

CSCAP MEMORANDUM NO. 24

Safety and Security of Vital Undersea Communications Infrastructure



**A Memorandum from the
Council for Security Cooperation in the Asia Pacific (CSCAP)**

May 2014

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Introduction

Submarine fibre optic cables carry 97 percent of all international telecommunications and are vital communications infrastructure for States globally and in the Asia Pacific region. Multiple cables breaks or hostile actions by terrorists or other third parties represent a significant risk to the security and economic interests of every State connected to that cable. There is currently no international legal regime addressing security issues that affect submarine cables, nor is there an international agency responsible for them.

This Memorandum proposes measures for moving forward at a regional level to protect submarine cables, reduce the risks to cables, and improve repair responses to damaged cables when faults occur. Cooperation between States at a regional level is required to plan in advance for incidents involving major breaks to submarine cables. There is also a need for States to establish national legislation and policy to reduce the risk of breaks and to improve response times for repairs to damaged cables. A cooperative partnership between government and industry is needed to ensure the resilience of the submarine telecommunications networks.

Submarine cables are vital telecommunications infrastructure

The global submarine fibre optic cable network is comprised of approximately 216 separate, diverse and independent cables systems, totaling more than 870,000 km of fiber optic cables. Presently, 97 percent of all international communications are carried by submarine fiber optic cables. The majority of countries now rely almost exclusively on undersea cables for their telecommunications needs, including essential finance, diplomacy and defence systems. The United Nations General Assembly has described these cables as “critical communications infrastructure,” which is “vitally important to the global economy and the national security of all States.”

Cable breaks pose a risk to the security and economy of States

The majority of submarine cable breaks are caused by negligent activities from fishing and shipping, and natural events such as earthquakes, tsunamis and

typhoons. There have, however, been incidents involving intentional damage being inflicted on cables. Industry reports that there are also increasing incidents of theft of cables at sea, causing millions of dollars of repairs and compromising the resilience of cable networks.

The risk of a deliberate attack against a network of cables with the intention to cripple the core telecommunications of multiple States is a real one. Given the broad range of man-made hazards that can damage cables, there is a real risk that in an area where there is a heavy network density of cables, deliberate actions to damage cables could result in multiple faults and maximum damage to international telecommunications systems. In addition to cable systems, supporting physical infrastructure such as landing stations may be also be targeted.

Adding to this are impediments by coastal States that result in delays to repairs; these may occur as a result of permit delays, requirements for vessels to enter port before carrying out repairs, customs duties, fees, and taxes, and cabotage requirements. These delays are sometimes in excess of three months, increasing the cost of repairs by hundreds of thousands of dollars and creating backlogs of repairs.

The current legal regime to protect submarine cables is inadequate

There is no specialized international agency responsible for law and policy relating to international submarine cables. The only applicable international rules are those contained in the 1982 United Nations Convention on the Law of the Sea (UNCLOS), but the provisions in UNCLOS are inadequate for dealing with the security of submarine cables. Even where States have enacted legislation to criminalize intentional acts against cables as required in UNCLOS, such legislation only applies to nationals of that State (or ships flying its flag), not to foreign nationals. In essence, national laws to protect submarine cables are often lacking, obsolete or not enforced.

In order to protect air navigation facilities and maritime navigation facilities, the international community has adopted treaties which establish a comprehensive cooperative regime to ensure that persons who intentionally destroy or damage critical infrastructure are punished for their actions as criminals, regardless of their nationality and regardless of where the acts took place. However, there is no such convention that applies to international submarine cables, even though they are arguably more important as critical communications infrastructure than air or maritime navigation facilities.

Areas for Action

There are annually on average approximately 200 or so cable fault repairs. Most repairs occur in the territorial seas and exclusive economic zone (EEZ), although some occur on the high seas. Repair costs vary between USD1 and USD3 million per repair, depending upon weather, location, and the extent of damage. Given these statistics, regional governments in the Asia Pacific need to recognize the importance of the protection and maintenance of submarine fibre optic cables as critical telecommunications infrastructure, and the Memorandum recommends that Governments in the region establish the following mechanisms to cooperate with each other and with the cable industry in order to protect submarine cables and ensure their rapid repair:

I. Contingency planning at the regional level

Given that the intentional cutting of submarine cables by thieves or terrorists is a serious threat to the economy and security of the coastal State, governments should look into developing contingency plans with industry to deal with attacks on the submarine cable network in the region. The contingency planning should include a standard procedure whereby the cable industry immediately notifies relevant government agencies through a designated national lead agency whenever there is a cable break or suspicious activity observed so that a risk assessment can be conducted to determine the likelihood of a possible hostile action. National designation of a lead agency for cables should be a priority.

What may also be required is an arrangement among States in the region to share information on suspected attacks on submarine cables and to fully cooperate in the event of an attack on submarine cables outside the territorial sea of any State. State Parties and the cable industry should carry out joint desktop exercises to plan and develop protocols and practical responses in the event of possible disruptions of submarine cable infrastructure. For a successful desktop exercise, it is essential that all government agencies responsible for domestic and international security threats at sea be involved as well as the international companies that own or operate the cable systems and cable ships be involved. Such planning should include the development of protocols to facilitate the quick repair of damaged submarine cables.

II. Cooperation to develop best practice guidelines

Establishing best practice guidelines at a regional level is an important means for States to cooperate to ensure that submarine cables are protected in law and in practice, and to ensure that rapid repairs can be undertaken when damage occurs. Cable breaks are not solely a national matter for the coastal State in

whose waters the cables are laid; they are also a matter of concern for every State where that cable lands. Other States in the region are impacted as well because a damaged cable increases the risks to communications because a damaged cable is no longer available for traffic restoration from a damaged cable. States should ensure mariners, especially fishing vessels, are advised of dangers to cables from unsafe anchoring or trawling practices on them.

Industry studies have documented inordinate delays in the repairs of cables in several countries in the Asia/Pacific region. One reason for this is that in some countries there is no lead agency responsible for the law and policy on submarine cables. The uneven treatment of the repair of international cables by States in the region should be analyzed and reviewed by Governments in cooperation with the cable industry so that the problems can be identified and “Best Practice Guidelines” can be developed.

Specific Recommendations for Action

1. Actions by States

- a. All states should join the International Cable Protection Committee (ICPC).
- b. Each State should designate a national lead agency for submarine cable issues.

2. Regional Cooperation

- a. Once designated, national lead agencies of states should coordinate (with industry/ICPC and other states) to: (i) Develop regional protocols to facilitate prompt cable repairs, and (ii) Develop standard procedures for both information sharing and to notify other regional nations of cable breaks or suspicious activity.
- b. Include tabletop exercises to deal with cable breaks and threats to cables in regional multilateral and bilateral exercises.

3. Future Study

Submarine cables issues should be included as a topic for future study in ARF Maritime Security ISM and CSCAP Maritime Security Study Group work, to refine the above recommendations and to identify best practices and other specific actions for official consideration.

ABOUT CSCAP

CSCAP is a non-governmental (second track) process for dialogue on security issues in the Asia Pacific. Membership in CSCAP is on an institutional basis and consists of Member Committees. Current membership comprises Australia, Brunei Darussalam, Cambodia, Canada, China, the EU, India, Indonesia, Japan, the Democratic People's Republic of Korea, the Republic of Korea, Malaysia, Mongolia, New Zealand, the Philippines, Russia, Singapore, Thailand, Vietnam and the USA.

The functions of CSCAP are as follows:

- a. to provide an informal mechanism by which political and security issues can be discussed by scholars, officials, and others in their private capacities;
- b. to encourage the participants of such individuals from countries and territories in the Asia Pacific on the basis of the principle of inclusiveness;
- c. to organise various working groups to address security issues and challenges facing the region;
- d. to provide policy recommendations to various intergovernmental bodies on political-security issues;
- e. to convene regional and international meetings and other cooperative activities for the purpose of discussing political-security issues;
- f. to establish linkages with institutions and organisations in other parts of the world to exchange information, insights and experiences in the area of regional political-security cooperation; and
- g. to produce and disseminate publications relevant to the other purposes of the organisation.

Study Groups are the primary mechanism for CSCAP activity. As of May 2014, there were four CSCAP Study Groups. These are concerned with: (i) Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific. (ii) Principles for Good Order at Sea; (iii) Regional Security Architecture; and (iv) Preventive Diplomacy.

This memorandum was produced by the CSCAP Experts Group on Vital Undersea Communications Infrastructure, a sub-group of the CSCAP Study Group on Principles for Good Order at Sea and was approved by the out of session CSCAP Steering Committee Meeting via electronic consultation on 21 May 2014.

Further information on CSCAP can be obtained from the CSCAP website at www.cscap.org or by contacting the CSCAP Secretariat:

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CSCAP Memoranda

CSCAP Memoranda are the outcome of the work of Study Groups approved by the Steering Committee and submitted for consideration by the ASEAN Regional Forum and other bodies.

- Memorandum No.23 – Enhancing Water Security in the Asia Pacific
Author: Study Group on Water Resources Security
Date published: January 2014
- Memorandum No.22 – Non-Proliferation of Weapons of Mass Destruction
Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
Date published: September 2012
- Memorandum No.21 – Implications of Naval Enhancement in the Asia Pacific
Author: Study Group on Naval Enhancement in the Asia Pacific
Date published: August 2012
- Memorandum No.20 – Ensuring A Safer Cyber Security Environment
Author: Study Group on Cyber Security
Date published: May 2012
- Memorandum No.19 – Reduction and Elimination of Nuclear Weapons
Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
Date published: February 2012
- Memorandum No.18 – Implementing the Responsibility to Protect (RtoP)
Author: Study Group on the Responsibility to Protect (RtoP)
Date published: September 2011
- Memorandum No.17 – Promoting the Peaceful Use of Nuclear Energy
Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
Date published: June 2011
- Memorandum No.16 – Safety and Security of Offshore Oil and Gas Installations
Author: Study Group on Safety and Security of Offshore Oil and Gas Installations
Date published: January 2011
- Memorandum No.15 – The Security Implications of Climate Change
Author: Study Group on the Security Implications of Climate Change
Date published: July 2010

- Memorandum No.14 – Guidelines for Managing Trade of Strategic Goods
 Author: Export Controls Experts Group (XCXG)
 Date published: March 2009
- Memorandum No.13 – Guidelines for Maritime Cooperation in Enclosed and Semi-Enclosed Seas and Similar Sea Areas of the Asia Pacific
 Author: Study Group on Facilitating Maritime Security Cooperation in the Asia Pacific
 Date published: June 2008
- Memorandum No.12 – Maritime Knowledge and Awareness: Basic Foundations of Maritime Security
 Author: Study Group on Facilitating Maritime Security Cooperation in the Asia Pacific
 Date published: December 2007
- Memorandum No.11 – Human Trafficking
 Author: Study Group on Human Trafficking
 Date published: June 2007
- Memorandum No.10 – Enhancing Efforts to Address Factors Driving International Terrorism
 Author: Study Group on Enhancing the Effectiveness of the Campaign Against International Terrorism with Specific Reference to the Asia Pacific Region
 Date published: December 2005
- Memorandum No.9 – Trafficking of Firearms in the Asia Pacific Region
 Author: Working Group on Transnational Crime
 Date published: May 2004
- Memorandum No.8 – The Weakest Link? Seaborne Trade and the Maritime Regime in the Asia Pacific
 Author: Working Group on Maritime Cooperation
 Date published: April 2004
- Memorandum No.7 – The Relationship Between Terrorism and Transnational Crime
 Author: Working Group on Transnational Crime
 Date published: July 2003
- Memorandum No.6 – The Practice of the Law of the Sea in the Asia Pacific
 Author: Working Group on Maritime Cooperation
 Date published: December 2002

- Memorandum No.5 – Cooperation for Law and Order at Sea
Author: Working Group on Maritime Cooperation
Date published: February 2001
- Memorandum No.4 – Guidelines for Regional Maritime Cooperation
Author: Working Group on Maritime Cooperation
Date published: December 1997
- Memorandum No.3 – The Concepts of Comprehensive Security and Cooperative Security
Author: Working Group on Comprehensive and Cooperative Security
Date published: December 1995
- Memorandum No.2 – Asia Pacific Confidence and Security Building Measures
Author: Working Group on Confidence and Security Building Measures
Date published: June 1995
- Memorandum No.1 – The Security of the Asia Pacific Region
Author: CSCAP
Date published: April 1994