

SUBMARINE CABLE GOVERNANCE REGIMES IN THE BALTIC SEA

**Questions on Jurisdiction, Immunities and NATO's
Capabilities to Safeguard this National Security
Infrastructure**

—Trabajo de Fin de Máster—

**Máster Universitario en Diplomacia y
Organizaciones Internacionales**

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Fecha de entrega: 10/05/2024

Abstract

This research project aims to shed light on an opaque topic with a considerable real-life importance, the legal governance of submarine cables. More specifically, it answers questions regarding jurisdiction, immunities and, in a contemporary context of great power competition, NATO's capabilities to defend this vital undersea infrastructure. The geographical setting of the study is the Baltic Sea, a rich environment regarding submarine cables, and populated by a unique set of actors, even inside the context of the transatlantic alliance. Submarine cables, due to their hidden nature, may also be both the target of the exploitation of legal gaps inside their jurisdiction, and vulnerable to hostile actions conducted in a prominent hybrid environment, as demonstrated with the Nord Stream bombings of September 2022. Thus, this research project aims to contextualize the main legal framework surrounding submarine cables, identifying vulnerabilities, and recommending solutions, to study NATO's tools in theatre and beyond to defend the vital infrastructure, and to identify hostile capabilities that would target these nodes of communication. Overall, the research shows that, while the legal system embedded in the International Law of the Sea and NATO policies and military might ought to be strong enough in principle, critical vulnerabilities and gaps remain, which could be exploited by any determined hostile actor.

Keywords

Submarine cables, NATO, Russian Federation, Baltic Sea, undersea, infrastructure, communications, seabed.

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List of Abbreviations

A2/AD: Anti-Access/Area-Denial	INF: Intermediate-Range Nuclear Forces Treaty
AIS: Automatic Identification System	ISR: Intelligence, Surveillance, Target Acquisition, and Reconnaissance Aircraft
AO: Area of Operations	ITLOS: International Tribunal for the Law of the Sea
ASN: Alcatel Submarine Networks	LOSC: Law of the Sea Convention
AWACS: Airborne Early Warning and Control	MARCOM: Allied Maritime Command
B-AOR: Baltic Area of Responsibility	MARPOL: International Convention for the Prevention of Pollution from Ships
CCS: Convention on the Continental Shelf	MCM: Mine Countermeasures Ship
CFCLR. Convention on Fishing and Conservation of the Living Resources of the High Seas	MPA: Maritime Patrol Aircraft
CHS or HSC: Convention on the High Seas	NAFTA: North American Free Trade Agreement
COLREGS: International Regulations for Preventing Collisions at Sea	NATO: North Atlantic Treaty Organisation
CUI: Critical Undersea Infrastructure	NGO: Non-Governmental Organization
DDA: Concept for Deterrence and Defence of the Euro-Atlantic Area	NGW: New Generation Warfare
DDG: Guided-missile Destroyer	OPSD: Optional Protocol of Signature Concerning the Compulsory Settlement of Disputes
DIANA: Defence Innovation Accelerator for the North Atlantic	PC: Patrol Craft
EC: European Commission	PCA: Permanent Court of Arbitration
ECOSOC: United Nations Economic and Social Council	PCIJ: Permanent Court of International Justice
EDA: European Defence Agency	RBIO: Rules-Based International Order
EEZ: Exclusive Economic Zone(s)	SEK: Swedish Krona
EU: European Union	SNMCMG: Standing NATO Mine Countermeasures Groups
FF/FFG: Frigate/Guided-missile Frigate	SNMG: Standing NATO Maritime Group(s)
FFL: Corvette	SSK: Attack Submarine (non-nuclear propulsion)
FPA: Foreign Policy Analysis	UfM: Union for the Mediterranean
GPC: Great Power Competition	UN: United Nations
HELCOM: Helsinki Commission	CTS: Convention on the Territorial Sea and the Contiguous Zone
HUR: Main Directorate of Intelligence (UKR)	UNCLOS: United Nations Convention on the Law of the Sea
IADS: Integrated Air Defence System	USSR: Union of Soviet Socialist Republics
ICJ: International Court of Justice	UUV: Uncrewed Underwater Vehicle
ICPC: International Cable Protection Committee	
ICSID/CIADI: International Centre for Settlement of Investment Disputes	
ILC: International Law Commission	

Introduction

The topic of this study is the Submarine Cable Governance Regimes in the Baltic Sea, a view on Jurisdiction, Immunities and NATO's capabilities to safeguard this national security infrastructure. The events that rose from the fires of Maidan square in 2014 which developed into the 2022 Russian aggression in Ukraine have decisively shifted the legal, political, and military landscape in Europe, and that does not exclude the Baltic region. Regarded in the past as the last bastion of neutrality in an increasingly polarised continent, nowadays the Baltic Sea stands as an avenue of freedom of navigation and rule of law, with nearly 94% of its coast composed of NATO member states. In some regards, the Baltic Sea region has witnessed a surge in strategic importance, marked by the geopolitical tensions between the so-called Western world and Russia due to the latter's war of aggression in Ukraine.

Yet under its waters exists a physical and metaphorical node of communication between these two antagonistic realities, the Baltic Sea submarine cable infrastructure or, in allied terms, the Critical Undersea Infrastructure. These submarine cables, which form the backbone of international communication (data differs from 95% to 99% of the total volume of worldwide communication), are susceptible to both physical and cyber threats. The governance of these cables is paramount for ensuring the integrity and security of data transmission, making it an issue of national and international significance. The jurisdictional challenges associated with submarine cables in the Baltic Sea also demand further scrutiny, as the overlapping nature of domestic and international law and the intricate nature of international waters need clear and updated regulatory frameworks, considering that evolving realities in the ground, as well as new technological advances, may no longer answer to contemporary issues as they did at the moment of their inception. Understanding the legal parameters and immunities governing these cables becomes imperative in the context of potential disputes or incidents, requiring a nuanced examination of applicable international laws and treaties, yet, it is important to underline that there is no legal definition for submarine cables in International Law as an object of legal regulation.

Moreover, the role of NATO in safeguarding undersea national security infrastructure, including submarine cables, needs to be critically evaluated. As a military alliance, NATO's ability to address emerging security threats in the conventional and cyber domains and its coordination with regional stakeholders become essential considerations in ensuring the resilience of submarine cable networks, specially under the provisions of articles 3 and 5 of the North Atlantic Treaty. To do so, the two main research questions on the topic are: "Which is the status of the legal framework surrounding submarine cables" and "How is NATO prepared to counter challenges on the Critical Undersea Infrastructure in the Baltic Sea?". Both inquiries aim to provide a comprehensive answer based on geopolitical, legal, and military perspectives, considering that a multidisciplinary analysis is needed to analyse such a complex topic. There is also a narrow selection on the subjects of study (NATO riparian countries and Russia), which is certainly needed as even inside the Alliance we can observe multiple perspectives and visions based not only in their contemporary view towards Russia but also their historical evolution or regard towards International Law.

The initial hypothesis was that while the international legal regime set in various treaties, both in the regional and global scope, was still in good health, it can still be extremely vulnerable to actions outside the normalised regime of the Rules-Based International Order. In addition, the author believes that lessons from the 2014 Crimea annexation have not been learnt to its fullest, acknowledging that there are gaps that still need to be filled, and that all international treaties are vulnerable to exploits, or disregard by determined, autocratic actors. Furthermore, the initial perception was that while it was true that NATO has had a political resurgence since 2022, it still lacks the necessary determination, mainly political, to pose a decisive deterrent against external interference, either covert or direct. It is heart-warming to see that most of the more pessimistic initial perceptions on the topic have been disavowed, but certainly, the present research has identified some avenues of work where further focus is still needed.

Yet, as a side note, the author believes it is relevant to underline two aspects of the field of study. First, it is an extended belief in the discipline that jurisprudence, especially these emanating from international courts, is scarce and considerably specific; and second (and intrinsically related) is that the challenges emanating from the discussion are under state jurisdiction and not bound by a specific treaty governing such specific aspect of admiralty law. Additionally, it is difficult *inter alia* to establish which state or non-state actor has ownership and thus legislative enforcement over certain parts of the infrastructure, as it has been already established in relevant chapters, and relevant literature continues to evolve on the topic.

Structure

As such, the research project has been structured in three chapters. The first one analyses submarine cables from a historical perspective, following their evolution and extension under all oceans of the globe, their advantages and inconvenients over alternative means of information transmission, as well as a brief introduction on the legal regimes governing them. The focus of the chapter rests on the ownership characteristics of the Critical Undersea Infrastructure, and on how state and non-state actors (mainly compromised conglomerates of communication companies and telecommunication operators) manage the installation, renewal, and daily operations of the arrays. There is also a dissection on three specialised fields that are considerably relevant in the Baltic Sea and their relation to submarine cables: matters about the delimitation of maritime borders and the continental shelf, matters on the environment, especially considering pollution; and matters related to fisheries, and their relationship with the main legal governing regimes of international maritime law. The chapter ends with a comprehensive analysis on all allied and non-allied state-actors geographically involved in the region.

The second chapter has a strong legal background to it, tackling all legal aspects of the governance of submarine cables, an area of International Law that has seen a continuity trend since the creation of the first infrastructures in the late 19th century. The first part of the chapter contains a brief overview of the historical evolution of International Law and case analysis on submarine cables, which is followed by a main body analysing all provisions relevant on submarine cable legislation. Furthermore, additional relevant regional legislation on the matter

is analysed, such as the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area of 1992, European Union legislative documents, coming from both the EU Commission and the EU Council, relevant for the theatre of study and relevant articles of NATO produced after the creation of the Critical Undersea Infrastructure Coordination Cell within NATO Headquarters in February 2023.

Finally, the third chapter dives into NATO's capacity to safeguard Critical Undersea Infrastructure (CUI) in the Baltic Sea from potential external aggression. More specifically, the chapter addresses both political initiatives adopted within the Alliance, especially in the light of the events occurring in the immediate post-Crimea period, with a special emphasis on NATO yearly summits, and the kinetic measures that NATO possesses in theatre to provide a hard defence of the CUIs, their relevance and adequacy speciality in the light of Sweden's and Finland's recent successful bids of accession in 2024. The chapter also delves into the Russian posture, its military capabilities in theatre taking into consideration daily updates of their attrition in military operations in the Black Sea and how has Russian hybrid warfare shaped the Baltic environment regarding traditional military threats, matters on economic warfare, cyberattacks and finally, the ever-present topic of *lawfare*.

Methodology and Objectives

This section will contain the qualitative avenues of study of the report based on its three chapters: First, the methodology of the initial chapter is the result of a combination of conducting a thorough review of academic and policy literature on submarine cables, their types, and their significance. There is also a systemic approach in the research, considering that the approach towards submarine cables has been made from different perspectives. It is further complemented with an analysis of each government's postures on historic, diplomatic, and international matters; and a data gathering initiative on the number and types of submarine cables in the Baltic Sea, carried out by data banks and map analysis. Secondly, the chapter on legal governance contains a primacy on the analysis of regional and international treaties, historical treaty comparison and evolution, the collection, and the mapping of relevant pieces of jurisprudence in the regional and international framework. Finally, the third chapter is the result of an exhaustive effort on policy analysis based on international relations theory, as well as military analysis conducted with the assistance of specialised documents and the usage of military simulation programs. There is also a study conducted on quantitative data about defence expenditures and their evolution, as well as the tangible impact that these economic initiatives have on the ground and regarding the topic at hand.

Regarding the objectives of the research project, the following list is a non-exhaustive set of parameters to be accomplished as to provide a comprehensive answer to both research questions:

General objectives

1. To analyse the legal, political, and military landscape in the Baltic Sea region, particularly in the context of submarine cable infrastructure.

2. To evaluate the significance of submarine cables as critical undersea infrastructure for international communication and national security.
3. To assess the jurisdictional challenges associated with submarine cables, both globally and in the Baltic Sea, and the need for clear regulatory frameworks regarding ownership.
4. To examine NATO's role in safeguarding critical undersea infrastructure arrays, especially submarine cables, in the Baltic Sea region.

Specific Objectives

1. To analyse the historical evolution and extension of submarine cables globally and their ownership characteristics, especially in the context of the Baltic Sea.
2. To examine the relationship between state and non-state actors in managing the installation, renewal, and daily operations of submarine cable arrays.
3. To investigate the state of the legal framework surrounding submarine cables, including international laws, treaties, and regional legislation.
4. To assess the vulnerabilities of existing international legal regimes to actions outside the normative framework, particularly considering recent geopolitical events.
5. To explore the legal aspects of submarine cable governance within the context of International Law, including relevant case analyses and provisions.
6. To evaluate NATO's preparedness and capabilities to counter challenges on critical undersea infrastructure in the Baltic Sea, considering both conventional and non-conventional domains.
7. To assess political initiatives within NATO and kinetic measures available for safeguarding critical undersea infrastructure in the Baltic Sea, considering recent geopolitical developments and the accession of Sweden and Finland to NATO.
8. To evaluate Russia's posture in the Baltic regarding conventional and hybrid warfare, and how their actions can shape the undersea landscape in the coming years.

CHAPTER I

An introduction to submarine cables

This initial chapter works as an introductory section to the complex world of submarine cables, with a focus on the decisive character of submarine cables, an infrastructure array that carries the lifeblood of our interconnected world, transmitting nearly all global communication data. Thus, this section is primarily a technical and historical approach to the matter, which will be followed by a legal perspective in the following segment.

Beneath the serene surface of the Baltic Sea and oceans all over the world lies a hidden network, unseen yet vital to our interconnected world. These are submarine cables, the unsung heroes of our digital age, carrying the lifeblood of data and communication across continents and oceans. Since their appearance in the 19th century (1840), submarine cables have been one of the most revolutionary aspects of continuous evolution in the field of international communication. While in their infancy they were simple telegraph cables, laid across rivers and harbours, and with a somewhat short lifespan and a very limited capacity of transmitting short messages at a high price toll, nowadays undersea cables are a high-end infrastructure layout built upon thousands and thousands of kilometres of fibre-optic connection encompassing nearly all riparian states. In general terms, the global network boasts over 400 active systems, carrying an estimated 95% of global communication traffic¹, with some metrics stating the number to be close to 99%².

In their essence, these submarine cables are precisely what their name suggests – cables laid on the seabed, acting as underwater highways for data transmission. During the telegraph age, they were essentially built upon a conductor, usually made of copper, which was encapsulated on successive layers of wire-based protective structures, insulated by *gutta percha* resin, a type of gum found in a Malaysian tree, which was brought to Britain and started to replace other materials that were used for electrical insulation, thus extending the life of the cable³. Nowadays, nearly the entire infrastructure is built around an optic-fibre wire (normally *osilica* glass), embraced by layers of composite materials made of polyethylene and fibreglass, with a single layer of copper and an outer structure built on a combination of wire and polyethylene.

These underwater giants come in various types, each serving a specific purpose and layered on a particular timeline: First, coaxial cables, which are older connections, once commonly used for voice, data transmission and short-range communication, and those that are gradually being replaced by fibre optics. Second, the fibre optic cables, which are the dominant carriers of data today, offer immense bandwidth and speed. Finally, we can find power cables, whose primary use is the transport of electricity across vast distances, connecting

¹ See International Cable Protection Committee Ltd, 2011a.

² See Jill C. Gallagher & Nicole T. Carter, 2023.

³ See Carter, 2009.

offshore wind farms and other energy sources to land.⁴ For the sake of this study, we shall focus only on the fibre optic cables located on the seabed of the Baltic Sea.

The first modern undersea cable was laid in 1988. Aptly named TAT-8, and ending the TAT series⁵. It was the first transoceanic fibre-optic cable system, connecting the USA to the UK and France. In the case of the Baltic Sea, the first cable was named Rønne-Rødvig and was situated between the landing points of Rødvig and Rønne, in continental Denmark and the island of Bornholm (Denmark), respectively. It was followed by the Finland-Estonia 2 cable, in 1992 between the capital regions of Tallinn (Estonia) and Helsinki (Finland) and Latvia-Sweden 1 in 1994 (between Ventspils, Latvia, and Nynashamn, Sweden)⁶. Other infamous systems, well documented by traditional media due to their complex geopolitical implications are Nord Stream 1 & 2, which primarily transport natural gas from the Russian Federation to Germany, though it also has fibre optic capacity. It was due to recent attacks on undersea infrastructure, including the already mentioned Nord Stream pipelines and several other undersea telecommunication cables in northern Europe, that awareness of the importance of undersea infrastructure has risen, and it has spurred calls from relevant officials for increased protection of undersea cables.

These fibre-optic submarine cables rely on a property of pure glass fibres whereby light is guided by internal reflection. Because the light signal loses strength *en route*, repeaters are required at regular intervals to restore it. These repeaters are now based on optical amplifying technology, which requires short lengths of erbium-doped optical fibre to be spliced into the cable system⁷. These are then energised by lasers that cause them to “lase”, thus boosting the incoming light signal. In terms of size, present-day submarine cables are quite compact, deep-ocean types, without protective armour, are typically 17-20 mm in diameter. When fielded with their normal armour, these fibre-optic cables may reach up to 50 mm in diameter. In contrast, submarine oil/gas pipes can reach 900 mm in diameter⁸. Yet, in terms of length, these are considerably flexible, ranging from tenths of kilometres to abnormal examples such as the Southeast Asia-Middle East-West Europe 3 system (SE-ME-WE-3), which is one of the longest cable systems with a total installed length (including branches) of almost 40,000 km. In the Baltic Sea, the largest one is the C-Lion cable between Finland and Germany (1,172 km), followed by the Kaliningrad Cable between the Russian provinces (*oblasts*) of Kaliningrad and Leningrad (1,115 km).

Submarine cables uphold considerable advantages over other forms of information traffic, such as satellites and ground-based systems. On the one hand, these are highly reliable systems, with considerable amounts of traffic capacity and physically secure, and are not easily

⁴ See Jenisch, 1996.

⁵ The TAT series were the first telephonic cables that used repeaters to help to propagate the information on the inside to overcome the huge distances in the transatlantic area. The first one was laid on the eve of the Second World War, in 1946. The project was led by AT&T, BT & France Telecom on behalf of a consortium of over 20 telecommunications companies. See International Cable Protection Committee Ltd, 2011b.

⁶ See TeleGeography, 2024.

⁷ See International Cable Protection Committee Ltd, 2011a, sec. 14.

⁸ Ibidem; sec. 13.

accessible. Furthermore, there is an insignificant delay of transmission compared to satellite-based communications and are considered the most cost-effective alternatives on major routes, hence why transmission rates are cheaper than those using satellites⁹. These reasons are the ones justifying the asymmetry of usage when compared to other systems, with cable-based communication amounting between 95 and 99% of all transoceanic voice and data traffic, as previously stated. On the other hand, satellite-based communications are more suitable for regions that are vulnerable to natural disasters or inherently insulated, such as island clusters or ultramarine territories. They are also able to provide a wider array of services, such as TV and similar broadcasting services.

Due to the geographical constraints of the Baltic Sea, all its undersea cable framework is built inside the Exclusive Economic Zones (EEZs) of its riparian states. Therefore, they are considered “coastal cable routes”¹⁰, thus having to fulfil a set of requirements to enhance their protection and that of other sea users, either being statutes or private entities. Some of those protective measures involve proper identification in international sea charts, the establishment of cable protection zones where other activities are strictly limited, and the partial or complete burial of the infrastructure up to 2,000 m, although it greatly difficulties its installation and maintenance.

The pivotal status of undersea cables as a critical infrastructure in worldwide communication cannot be sufficiently underscored. Therefore, it has been recognized and enshrined in International Law since the 19th century. More recently, submarine cables are covered by the United Nations Convention on Law of the Sea (UNCLOS or “the Convention”), and are under a priority status under the Convention, particularly relevant in international waters and the status of ships engaged in the laying or repair of submarine cables, which have protected status under the rules of the sea. Yet, it is important to underline that there is no legal definition for submarine cables in International Law as an object of legal regulation. Although the legal section of the study can be found in Chapter II of the research paper, some additional legal provisions found under UNCLOS include, but are not limited to: The freedom to lay, maintain and repair cables outside of a nation’s 12 nautical mile territorial sea, obligations on nations to impose criminal and civil penalties for intentional or negligent injury to cables and universal access to national courts to enforce treaty obligations¹¹. Also, the 1884 Convention for the Protection of Submarine Telegraph Cables (the Cable Convention) continues to be widely used in the cable industry. While its essential terms are included in UNCLOS, the Cable Convention remains the only treaty that provides the detailed procedures necessary to implement them.

That being said, while the freedom to lay submarine cables is afforded to States under UNCLOS, it is the privately owned “cable-ships” that are exercising these rights, entering into

⁹ Idem; sec. 15 and International Cable Protection Committee Ltd, 2011b.

¹⁰ *As per* the classification of the ISPC, the leading International Cable Protection Committee, that represents 98% of the world’s subsea telecom cables.

¹¹ See the Convention on the Law of the Sea, 1982

a sort of “cross-jurisdictionism”¹². Further complicating the situation is the fact that submarine cable systems are typically built or owned by many different private companies from different nations and, cables, unlike ships, do not sail under the banner of any state¹³.

On the global governance of submarine cables, its physical infrastructure, contents, and the security of the installations, the issue is complex, as it is with all matters related to a multi-actor environment. In very general terms, private companies, international consortiums, and even governments can own the physical infrastructure, and they do not necessarily have to be located on-site. Essentially three types of companies invest in, and become owners of, a submarine cable: namely, the telecommunication operator (state or private), the non-telecommunication company and an investment bank, either directly or through a special purpose vehicle¹⁴. For instance, the Baltic Sea Submarine Cable (1,042 km) is owned by CITIC Telecom International, a Chinese-based company, while its supplier is a NOKIA affiliate company, Alcatel Submarine Networks (ASN), which holds 33% of all worldwide internet market share networks. However, ownership of data flowing through these cables is distinct. It belongs to the individuals and organisations transmitting it, not the cable owners, analogically to all forms of communication, being both physical and cable based. In addition, states are present in some way or another in these dealings, as the most important telecommunication companies have some sort of state participation in them (those being in shares, active participation in the administrative environment of the company or direct control); the reason for that is the extended consideration of these companies as “strategically relevant”¹⁵.

In a general sense, the most employed method of commercial model for the physical ownership of the cables are *Submarine Cable Consortiums*, which is a collection of companies that “club” together to fund the design, construction, and maintenance of a new cable. The consortium lays down a Construction and Maintenance Agreement (C&MA) which is an agreement between all the members specifying how they will manage together to construct and maintain the cable throughout its operational life and beyond.¹⁶ It constitutes a legally binding document that acts as the primary governance contract for the infrastructure. Changes to the C&MA are binding for all members of the agreement, as they are approved by unanimity. Further adding to the complexity, there are two different managing schemes in the lifetime of a submarine cable, the installation and the operational one:

- The first element is supported by representatives of the consortium members who will land the cable and be responsible for managing the installation of the cable and establishing the Operations and Maintenance (O&M) capability for

¹² This is due to the fact that normally flag-states of those vessels are not the same as the ones that bid them to construct the infrastructure. Legal permits and immunity are granted to those vessels operating in territorial waters under a legal contract, born from an agreement that grants these ships similar legal considerations as those from the contracting country during the length of the contract.

¹³ See Carter & Burnett, 2016.

¹⁴ See Burnett et al., 2014.

¹⁵ For example, in December 2023 Spanish PM Pedro Sanchez acknowledged that the Spanish government decision to buy shares (10%) from the telecommunications company “Telefónica” answered to strategic considerations following the intention of a Saudi-based capital fund to acquire a majority share of the company.

¹⁶ See Burnett et al., 2014.

the cable on behalf of all the owners. This element is led by what is usually termed the Procurement Group. The Procurement Group only remains in existence during the construction of the cable and during any subsequent upgrades.

- The second element of the working group structure comprises several sub-committees. These sub-committees are responsible for the operational and financial performance and for other matters relating to the assignment and restoration of the cable. The committees of the working groups are open to attendance by all members of the consortium. The committees continue to operate throughout the life of the cable and are composed of representatives from all members of the consortium.

Other so-called special interest groups, or likely minded conglomerates, are international organizations whose mandate is centred on the international, shared governance of this single regime. In our field of study, the most relevant one is the International Cable Protection Committee (ICPC), which plays an essential role in providing leadership and guidance on issues related to submarine cable security and reliability. Since its inception in 1958 by BT and Cable & Wireless (C&W), the ICPC membership has grown to over 200 members from more than 70 countries (as of 2024). Members include a heterogeneous polyarchy of owners and operators of submarine cables, submarine cable-system suppliers, submarine cable suppliers, survey companies, cable-ship operators, and governments¹⁷, thus becoming a true paragon of multistakeholderism. Some of its core functions, as stated in its mandate by its foundational treaty, are to engage with governments, international organisations, and other users of the ocean and seabed, to further the development of ICPC Recommendations and best practices and enhance the protection and advancement of treaty protections and freedoms. All those efforts culminated in 2018 when the United Nations Economic and Social Council (ECOSOC) held a coordination and management meeting where the ICPC was awarded special consultative status, as recommended by the Non-Governmental Organization (NGO) committee of ECOSOC. As of 2024, the ICPC is the only submarine cable organisation with such a status within the United Nations forums.¹⁸

Finally, it is essential to talk about dangers to the undersea infrastructure and to discriminate between human-related infractions and nature-caused ones. According to Kordahi and Shapiro, “around 70 per cent of all cable failures associated with external aggression are caused by fishing and shipping activities in water depths shallower than 200 m”¹⁹. In practice, this translates to more than 70% of cable faults being caused by external, human-related aggression; from those numbers more than 80% of external aggression faults being the result of fishing and shipping activities, while less than 10% of faults are caused by natural forces such as earthquakes, waves, and sea currents²⁰. In the past, notorious accidents such as the Algerian earthquake of 2003, the undersea landslide between Taiwan and the Philippines

¹⁷ See Carter, 2009.

¹⁸ Ibidem.

¹⁹ See Kordahi, M.E & Shapiro, S., 2004.

²⁰ According to data from Tyco Telecommunications & Global Marine Systems.

(2006) and the depredation of cables near the Vietnamese coast in 2007 translated into the interruption of general communications, banking, the delay of airline bookings and general commerce, and considerable conditioning of normal-going life for the citizens in the area. In sum, any disruption of the telecommunications network has huge economic, social, and strategic repercussions, thus increasing the importance of resilience, which emanates from the immediate re-routing of traffic via spare capacity on other submarine cables and rapidly initiate cable repair operations that are fast and reliable, undergone by specialised installations such as the ones in Kalmar (Sweden) and Turku (Finland).

The Legal Governance of the Baltic Sea

The Baltic Sea region presents unique and intertwined challenges for the 8 states of the basin. Although characterised by a great diversity of history, languages, and cultures, there is a strong feeling of common heritage. From the mid-2000s until fairly recently, circumstances were more favourable than ever for a new regional cooperation, making the Baltic Sea a "Mediterranean of the North"²¹, which could certainly use regional structures comparable to the Union for the Mediterranean (UfM), aiming to promote stability and integration through the region. Such structures would have aided the transition of the post-Soviet states towards the new international order more harmonious and may have aided the Russian Federation to accommodate itself in the new security and economic framework being set up in its Western borders. Even the enclosed nature of the Baltic Sea and the intensive use in terms of transport, economics, and security, and the common environmental interests of the riparian states were the reasons why the Baltic Sea became one of the focal points of the creation process of UNCLOS²².

Three specialised regimes exist within the premises of the Baltic Sea that are especially relevant in the matter at hand, all of them dealing with causes, consequences, or realities of the layout of undersea cables: matters about the delimitation of maritime borders and the continental shelf, matters on the environment, especially considering pollution; and matters related to fisheries.

On maritime borders and other geographical considerations: Considerations built on Exclusive Economic Zones of 200 nautical miles are simply not feasible in the Baltic Sea due to its small expanse. As a result, these zones posed several delimitation problems, with multiple overlapping and controversies related to historic claims and *de facto* control of an area. According to UN documentation²³, all nine Baltic states have, since the 1960s, claimed continental shelf zones for the exploitation of the seabed by exercising the rights granted by the Geneva Continental Shelf Convention (1958), which represents the premier modern initiative to settle by an act of international legislation the scope of the continental shelf

²¹ Expression inspired from A. Violante "The Baltic Sea as the Mediterranean of the North: The Baltic Region and Poland in the periodical "Geopolitica" (1939–1942)" 2019. Studies in Political and Historical Geography Vol. 8.

²² See Jenisch, 1996.

²³ See The Law of the Sea, National Legislation on the Exclusive Economic Zone (UN, New York, 1993) and The Law of the Sea, National Legislation on the Continental Shelf (UN, New York, 1989).

doctrine in International Law. This has set the basic pattern for the division of the Baltic Seabed which, according to Charney and Alexander²⁴, has been settled fairly by bilateral agreements²⁵ and some rulings by international courts, such as the International Court of Justice (ICJ)²⁶.

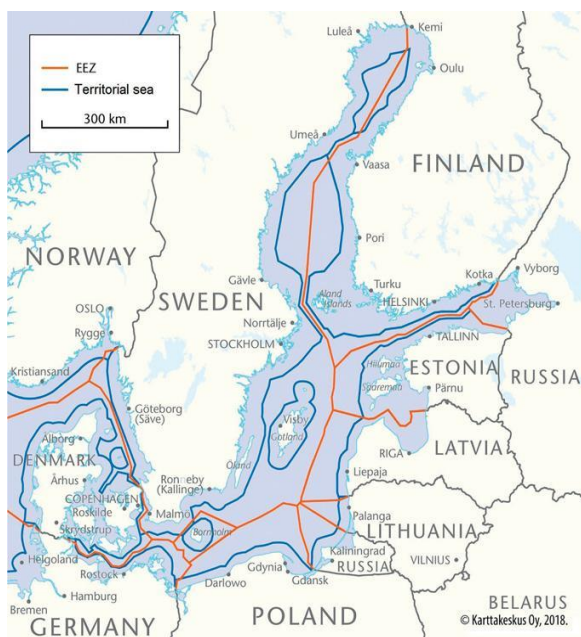


Figure 1 Baltic Sea EEZs

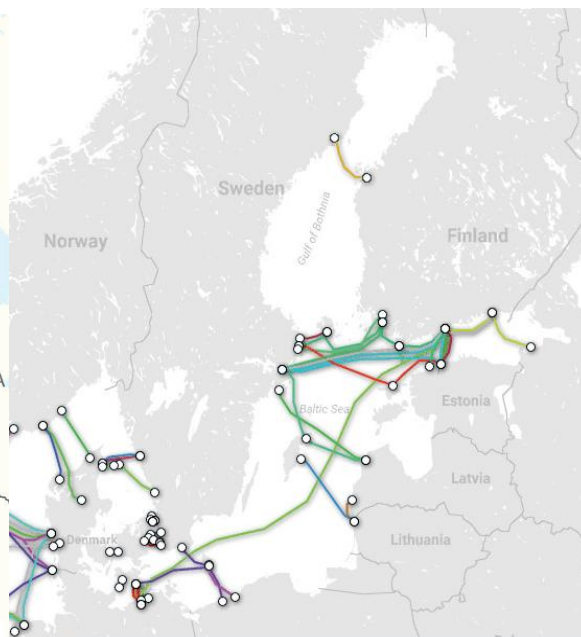


Figure 2 Baltic Sea Submarine Cables

Nearly all claimed EEZ zones are claimed as far as the meridian line (see Figures 1 & 2). The results of such partition, and the shaping of each country's international posture, give us important inputs on the *de facto* evolution of the Baltic Sea in the International relations arena considering the percentage²⁷ (%) of each country's EEZ in the Baltic Sea:

Country	1991	1995 (+EU)	2004 (+EU)	Country	1999 (+NATO)	2004 (+NATO)	2022 (+NATO)
Denmark	11	68	94	Denmark	25	41	57
Germany	4			Germany			
Finland	16			Poland			

²⁴ See Charney & Alexander, 1998.

²⁵ See the bilateral agreements between Finland-Sweden (Bogskar Area) of 1994 and Finland and Sweden on *the Delimitation in the Aland Sea and the Northern Part of the Baltic Sea* on 30 July 1995; Estonian-Latvian negotiations in 1991 following the dissolution of the Soviet Union, Estonia and Russia concerning the delimitation in the Narva River (1992-1995), and Lithuania-Russia, on the enclave of Kaliningrad and the territory of Memel.

²⁶ See literature related to *The Passage of the Great Belt* (Finland v. Denmark) ICJ. 1992, removed from the ICJ trial list after pre-trial settlement.

²⁷ Estimated percentages as shown in *Comprehensive Security for the Baltic* (1989), Flanders Marine Institute (VLIZ) (2014), Maritime Boundaries Geodatabase, Jenisch, 1996, and the United Nations Convention on the Law of the Sea (UNCLOS).

Sweden	37			Estonia	8		
Estonia	8	8		Latvia	6		
Latvia	6	6		Lithuania	2		
Lithuania	2	2		Finland	16	16	
Poland	10	10		Sweden	37	37	37
Russia	6	6	6	Russia	6	6	6

Figure 3: Representation in percentages of the total dimension of each country's EEZ compared to the total Baltic Sea Extension, added by EU enlargement (left) and NATO expansion (right). (see note 27).

That being said, it is important to notice that not all the agreements, especially the bilateral and the ones born from international arbitration, were ruled upon the traditional rule of equidistance as a governing principle, but also determined by historical, economic or traditional considerations. Strait's regimes, such as the one reigning over the Danish approaches, are also important in International Law²⁸, and states such as the former Soviet Union and Finland have complained on issues related to the possibility of building infrastructure in the premises of such straits and about limiting the volume of shipping in transit. However, the passage through the Danish straits poses no problems since the legitimate navigational rights of all states are respected. According to regional documentation, the same applies to the straits in the Central and Eastern Baltic Sea.

On environmental regimes: The legal framework for the protection of the marine environment is generally governed by Part XII of UNCLOS²⁹. In the Baltic Sea, and working from art. 197 of the Convention, standards must be fixed by "competent international organizations". As such, regional cooperation in protecting the marine environment rose from within the framework of the Helsinki Commission (HELCOM), the permanent institution of the 1974 Helsinki Convention on the Protection of the Baltic Sea Environment, which was born from a Finnish initiative that same year and became effective from May 3rd, 1980³⁰. The natural successor of the 1974 text is the Helsinki Convention of 1992, which builds upon its predecessor incorporating newer aspects in the evolving regime of climate change and environmental policy³¹.

This Convention provides covering for all sources of pollution, including pollution from the shore, waste dumping at sea, exploration, and exploitation of the seabed, etc. and

²⁸ As stated in Part III, Section 1, Articles 34 to 36 of UNCLOS, *Straits Used for International Navigation*.

²⁹ Articles 192 to 237 of UNCLOS, aimed at regulating the protection and preservation of the marine environment.

³⁰ *Convention on the Protection of the Marine Environment of the Baltic Sea Area* (1974) and *Convention on the Protection of the Marine Environment of the Baltic Sea Area* (1992).

³¹ As seen in the preamble of the *Convention on the Protection of the Marine Environment of the Baltic Sea Area* (1992) and Arts.19.2, 33.2 and 36.4 of the same Convention, formalizing its instrument of succession.

applies to both proactive and reactive measures to enhance the environmental protection of the area. There are no international enforcement instruments contained in the Convention, leaving it only to national enforcement. Furthermore, vessels navigating the Baltic Sea outside territorial waters under the flag of non-bordering nations are not subjected to the Convention, but to MARPOL³². Also, in case of a dispute between Contracting Parties as to the interpretation or application of the Convention, they should seek a solution by negotiation, to seek an amicable resolution or jointly request mediation by a third Contracting Party, a qualified international organisation, or a qualified individual. If all these mechanisms were to fail, the case could be sent to an ad hoc arbitration tribunal, or the ICJ³³.

Finally, *on fisheries and economic exploitation*: The first international agreement between the Baltic Sea parties concerning the division and conservation of maritime boundaries regarding fishing areas was the 1973 Gdansk Agreement, formally known as the *Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts*. While at first glance such an agreement may not seem relevant for the topic at hand, it is important in the sense that it portrays to what extent EU member states parties to the Convention managed to lend all their autonomy regarding fisheries management to the European Commission³⁴, and how the Commission can negotiate relevant matters, *vis a vis*, with the Russian Federation³⁵. These areas of negotiation are not only limited to the extra communitarian boundaries and other arrangements on fisheries, but also the establishment of consolidated protective areas near major cable hubs to enhance their protection from trawling and other fishing disciplines³⁶.

A Geopolitical Overview of the Baltic Sea

As of 2024, a considerable constellation lays on the Baltic seabed connecting all countries in the region, most of them being members of the EU or NATO. Only the Russian Federation is not part of the transatlantic alliance. In this study, and acknowledging that while these countries have distinct political processes and complex societal organograms, we have grouped them into four batches based on their stance on transatlantic relations, historical precedents, and current events:

Traditional Western members, Germany, and the Kingdom of Denmark. These two countries, considerably relevant to both European and Atlantic Councils, are the cornerstone of the traditional Western presence in the Baltic Sea. Both countries are founding members of the European Union in its present form, being signatories of the Treaty of the European Union

³² The *International Convention for the Prevention of Pollution from Ships*, 1973 as modified by the *Protocol of 1978 (MARPOL)*.

³³ Art. 26 of the *Convention on the Protection of the Marine Environment of the Baltic Sea Area* (1992).

³⁴ The exclusive right of the EU to manage fisheries is set forth in the Treaty of Lisbon (Article 2B), which states that the EU will have “exclusive competence” over “the conservation” of marine biological resources under the common fisheries policy, according to Treaty of Lisbon Amending the Treaty on European Union and the Treaty Establishing the European Community. European Union. 13 December 2007, 2007/C 306/01.

³⁵ As stated in the *Agreement Between the European Community and The Government of The Russian Federation on Cooperation in Fisheries and The Conservation of The Living Marine Resources in The Baltic Sea*. Official Journal of the European Union. 2009 and Council Regulation (EC) No 439/2009.

³⁶ See Gilek et al., 2016.

in 1993 (Treaty of Maastricht) and forerunners of the Washington Treaty of NATO (Denmark as a founding member in 1949, and West Germany in 1955). During the Cold War, these were the first line of defence facing the Warsaw Pact forces in East Germany, Poland, and Czechoslovakia, and both maintained well-trained forces and considerable contingents of American, British, and Belgian forces stationed permanently or in rotation.

After the fall of the Berlin Wall and the dissolution of the Warsaw Pact, both countries warmed their relations with a newborn Russian Federation, and prioritised their welfare system, the economic well-being of its citizens and EU enlargement as the way forward towards European peace and prosperity. The 2022 Russian invasion of Ukraine brought forward new trends in foreign policy in these countries, thus becoming important contributors of military and humanitarian aid to the affected party, both in the EU's framework of assistance and as individual donors³⁷.

Post-Cold War expansion, Republics of Poland, Estonia, Latvia, and Lithuania. While Poland still maintained some level of autonomy in the post-1945 international system of states, being a socialist state under the watchful eye of Moscow, the three Baltic states were swiftly annexed during the military occupations in the wake of the Second World War and the Molotov-Ribbentrop pact of 1939.

After the four of them won their political agency back by 1991, first by Gorbachev's *Sinatra* doctrine and later by the political dissolution of the USSR, they rapidly became members of the newly constituted international order built around Western values such as democracy, a free-market system, and the primacy of the rule of law. Poland became a member of NATO in 1999, and Estonia, Latvia, and Lithuania ratified the Washington treaty in 2004. Furthermore, all four became members of the European Union on May 1st, 2004, in the so-called fifth-enlargement or the A10 group of countries. They maintain a somewhat vigilant attitude towards the neighbouring Russian Federation and are therefore keener on engaging it through NATO with its military prowess and security guarantees derived from Article 5 of the Washington Treaty rather than searching for an EU-sponsored effort.

The Nordic Countries, the Republic of Finland, and the Kingdom of Sweden. Both being traditionally neutral countries, they have undertaken a considerable shift in their international politics following the Russian unjustified aggression against Ukraine. During the Cold War, Finland's international stance was characterised by its policy of neutrality and by its special relationship with the Soviet Union. Arguably, Finnish neutrality was more instrumental than ideological³⁸, and its security policy implied a need to avoid taking strong positions on the EU–NATO relationship, prioritising the former over the latter. Sweden, on the other hand, was one of the countries that also remained neutral during the Cold War. In comparison with Finnish neutrality, however, Sweden's form of neutrality appeared to be more ideological and deep-rooted in society, shaping all aspects of its EU membership (1995) and relationship with the Atlantic alliance.

³⁷ See Janovsky et al., 2022.

³⁸ See Tiilikainen, 2006, pp. 51–54.

This was to change swiftly on May 17th, 2022, when both countries deposited to NATO's Secretariat their instruments of application. In an unthinkable initiative nearly half a year before, both countries are expected to bring new capabilities to the table, such as Sweden's new psychological defence agency or Finland's highly regarded security of supply strategy. Furthermore, both Nordic allies also possess deep historical experience in interacting with Russian forces and their changing patterns of behaviour, a key element in shaping NATO's intelligence picture and deliberations on how to interact (and how not to) with the Kremlin.³⁹ Finally, both countries possess ample green-water navies with tailored capabilities for the Baltic area of operations (AO), which is another key element in order to defend the critical underwater structures.

Russian Federation: As a unique actor in theatre that does not share any major commonalities with all other actors, the Russian Federation stands as the sole counterbalance to the so-called “Western world” in the region. Being the natural successor state of the Soviet Union (USSR), the Russian Federation (Russia) has inherited the Soviet's unique perspectives on International Law and military matters. On the one hand, some authors argue that the USSR developed a unique and idiosyncratic concept of public International Law which was among other things anti-Western. In particular, the Soviets argued the existence of a distinct “Soviet” or “socialist” International Law and with the help of this concept set clear limits to the existence of general International Law⁴⁰. Such behaviour has shaped Soviet (and later Russian) views on multiple regimes of International Law, including the right to self-determination of the peoples, human-rights law and, for the sake of the study, maritime law. Even their membership in international forums or treaties is more in line with the need to counterbalance and defend a Russian (arguably imperial), non-homogenous position on the international stage rather than a constructive position seeking international agreements for the sake of forwarding an international agenda.

Speaking in geopolitical terms, and invoking the politics of international security, it is paramount in Russian strategic thinking that geography has not been kind to the Eurasian giant. According to Adm. A.T. Mahan (1890), “the coast of a country constitutes one of its borders, and the easier it is to cross a border, the greater the tendency of any people to communicate through it with the rest of the world. Such is, therefore, the case with the sea.”⁴¹. In this sense, two of the four Russian naval fleets are based close to Scandinavia, viz. the Northern Fleet at Murmansk and the Baltic Fleet at Kaliningrad. The Baltic fleet must pass the Danish straits to reach the North Sea and the Atlantic, which involves sailing under the watchful eyes of NATO members Lithuania, Poland, Germany, and Denmark, if the naval squadron is based in Kaliningrad, or adding Finland, Estonia, Latvia, and non-NATO ally Sweden to the equation if setting off from St. Petersburg⁴². To put it mildly, Russia's naval freedom of action has gone from only concerning itself to be able to sail through the Danish straits leaving behind a plethora of client and like-minded states to a context of constant overwatching of its naval

³⁹ See Germanovich, 2022.

⁴⁰ See Mälksoo, 2015 and Hildebrand, 1968.

⁴¹ See Mahan, 2014, p. 313.

⁴² See Laursen, 1993, p. 39.

activities not far from the crucially strategic enclaves of St. Petersburg and Kaliningrad. In sum, Russian doctrine and actions are due to adapt to this new security reality, and its consequences shall be analysed further in this paper.

Conclusion

In sum, beneath the surface of the Baltic Sea lies a hidden network of vital importance. These submarine cables carry the lifeblood of our interconnected world, transmitting nearly all global communication data. Unlike satellites, they offer very low latency and ease of installation and maintenance, making them the preferred channel for information exchange. These modern marvels are descendants of simpler 19th-century telegraph cables. Today, they are built from fibre optic technology, boasting immense bandwidth and speed. They coexist with power cables transporting electricity across vast distances, connecting offshore wind farms and other energy sources. While all cables in the Baltic Sea reside within the EEZs of their respective countries, International Law governs their ownership, protection, and data flow. The primary legal framework is the United Nations Convention on the Law of the Sea (UNCLOS), which recognizes the freedom to lay and maintain cables outside a nation's territorial waters. Additionally, the 1884 Cable Convention provides detailed procedures for implementing these protections, yet these legal considerations will be further analysed in the following section.

Despite these legal safeguards, ownership and operation of cables primarily reside with private companies and consortiums. They often form "Submarine Cable Consortiums," pooling resources to design, build, and maintain these critical infrastructures. International organisations like the ICPC play a crucial role in ensuring cable security and fostering multi-stakeholder governance. However, any disruption to these communication lifelines can have significant economic and social repercussions. Accidental damage from fishing or shipping activities, or even deliberate sabotage, can cause widespread internet outages, financial losses, and hinder essential services with human rights implications, such as the right to have access to health services in an event of power outage in a medical centre.

Also, the Baltic Sea region itself presents unique challenges. Its nine riparian states boast diverse histories and internal politics, and their political positions vary greatly. While the majority are firmly embedded in NATO and the EU, others, like the Russian Federation, maintain distinct perspectives on International Law and strategic interests. As such, understanding these legal and geopolitical nuances is crucial for navigating the complex world of submarine cables in the Baltic Sea. Further chapters will lay the groundwork for further exploration of the specific challenges that NATO faces in theatre and which options the Alliance does have, both in the security and legal frameworks, surrounding these vital underwater infrastructures.

CHAPTER II

Legal Governance of Submarine Cables

This chapter will tackle all legal aspects of the governance of submarine cables, an area of International Law that has seen a continuity effort since the creation of the first infrastructures in the late 19th century. The area of study is somewhat subjected to the phenomenon known as “fragmentation of International Law”, even if being in itself a pretty self-contained regime, as the intrinsic qualities of ownership, state-borderism and the tight connection between international maritime law and international relations has provoked the need for continuous evolution and adaptation of the sources of regulation. Also, it was believed in the start of the century that a well-established system of norms, widely regarded in International Law as treaty law or even consuetudinary law, ought to constitute a sufficient deterrent to address the myriad of challenges that actors may face in theatre, particularly given the extensive use and importance of submarine cables⁴³. Yet, in the current context of increasing Great Power Competition, tangible evidence in the wake of Russia’s aggression in Ukraine may show us that it is not enough.

The first part of the chapter will contain a brief overview of the historical evolution of International Law and case analysis on submarine cables; this shall be followed by a main body analysing all provisions relevant on submarine cable legislation, including but not limited to the 1884 Convention for the Protection of Submarine Telegraph Cables (1884 Convention), the 1956 International Law Commission's Articles on the Law of the Sea (1956 ILC Articles), the negotiations at the First United Nations (UN) Conference on the Law of the Sea (UNCLOS I), the 1958 Geneva Conventions on the Law of the Sea (1958 Geneva Conventions), the Third UN Conference on the Law of the Sea (UNCLOS III), and its product treaty, the 1982 Law of the Sea Convention (LOSC).

Furthermore, additional relevant regional legislation on the matter shall be included, such as the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area of 1992, European Union (EU) legislative documents, coming from both the EU Commission and the EU Council, relevant for the theatre of study and relevant articles of NATO produced after the creation of the Critical Undersea Infrastructure Coordination Cell within NATO Headquarters in February 2023. Also, a section on the evolution of singular articles from the 1884 Convention to the final documents of UNCLOS is especially due. Finally, a section shall be included on belligerent legislation considering damages or destruction of submarine infrastructure due to hostile actions coming from state or non-state actors, and the legal consequences of the bombing of the Nord Stream pipeline in 2023.

Historical Evolution of Maritime Law on Submarine Cables

As said, the legal regime governing submarine cables, the critical infrastructure underpinning global communication, reflects the broader evolution of maritime International Law. This section bars a historical exploration, analysing key milestones and their enduring

⁴³ See Dugard J., 2023.

impact on the legal framework governing these vital undersea infrastructure elements. It will also examine how the legal regime for submarine cables has adapted to the ever-evolving technological landscape and the growing importance of global connectivity.

Early recognition of their significance materialised in the 1884 Convention for the Protection of Submarine Telegraph Cables, establishing a pioneering framework for their protection on the high seas. This initiative was spurred by the inadvertent damage inflicted on British-owned cables in the North Sea by fishermen, highlighting the need for international collaboration to ensure the integrity of this crucial infrastructure. Recognizing the undeniable value and increasing reliance on submarine telegraph cables, governments embarked on a series of international discussions aimed at establishing a unified framework to govern and protect this critical “public good”⁴⁴. This endeavour, spanning several decades, reflects a collective acknowledgment of the cables' significance in facilitating global communication and fostering international cooperation. Also, its genesis was the recognition by States that these cables were vital means of communication which needed to be protected⁴⁵.

The remarkable outcome of these conferences, encompassing engineers, fishermen, naval officers, and diplomats from various nations, was that same 1884 Convention. Notably, its provisions extend beyond territorial waters to encompass all legally established submarine cables connecting the territories of the participating parties⁴⁶. However, the Convention explicitly excludes wartime scenarios, diverging from the approach of an earlier 1864 treaty that endeavoured to prevent cable destruction during conflict⁴⁷. In contrast, established state practice since the 1884 Convention acknowledges the unfortunate reality of international cables being deemed legitimate targets during wartime⁴⁸. However, the growing complexity of the maritime domain and the emergence of new technologies necessitated further development.

The mid-20th century witnessed significant advancements. The 1956 International Law Commission's (ILC) articles on the Law of the Sea and the subsequent negotiations at the First United Nations Conference on the Law of the Sea (UNCLOS I) in the late 1950s laid the groundwork for progressive codification. While UNCLOS I did not culminate in a comprehensive treaty, it paved the way for the 1958 Geneva Conventions on the Law of the Sea, which addressed specific aspects of maritime law, including the freedom of the high seas and some legal provisions for submarine cables. In a general sense, the Conventions of 1958 aimed at codifying existing International Law and ultimately sought to unite two millennia-old ideas by establishing who may use which parts of the sea: *mare liberum*, freedom of the sea, and *mare clausum*, the principle by which states claim sovereignty of the sea. Ultimately, a

⁴⁴ Despite submarine cables may not be considered as such yet, according to the International Monetary Fund (IMF), a “public good” are those that are available to all (nonexcludable) and that can be enjoyed over and over again by anyone without diminishing the benefits they deliver to others (nonrival). In addition, a “global public good” are those whose benefits affect all citizens of the world.

⁴⁵ See Burnett et al., 2014.

⁴⁶ See International Cable Protection Committee, 1884, art. I.

⁴⁷ See Swett, 2022.

⁴⁸ See International Cable Protection Committee, 1884, art. XV.

compromise was found with the territorial sea, the contiguous zone, and the high seas.⁴⁹ The United Nations Conference on the Law of the Sea opened for signature four conventions and an optional protocol: the Convention on the Territorial Sea and the Contiguous Zone (CTS); the Convention on the High Seas (CHS or HSC); the Convention on Fishing and Conservation of the Living Resources of the High Seas (CFCLR); the Convention on the Continental Shelf (CCS); and the Optional Protocol of Signature concerning the Compulsory Settlement of Disputes (OPSD).

The CTS sets out in detailed provisions the main rules on the territorial sea and the contiguous zone. Its rules address, in particular, baselines, bays, delimitation between States whose coasts are adjacent or face each other, innocent passage, and the contiguous zone. The CHS defines the high seas as all parts of the sea not included in the territorial sea and internal waters. It deals specifically with the freedoms of the high seas; the right of a State to have ships flying its flag under conditions fixed by it, stating the controversial requirement of the existence of a “genuine link”⁵⁰; the rights and obligations of the flag State; among others. The CFCLR sets out principles and mechanisms for the rational management of fisheries in the high seas. It insists on cooperation between States engaged in the same fisheries, it recognizes the special interest of the coastal State when the fisheries are in the high seas adjacent to its territorial sea and provides for compulsory settlement of disputes concerning all the key rules. Some of the provisions are similar to those that were to be adopted in 1995 in the United Nations Fish Stocks Agreement.

Furthermore, the CCS sets out rules on the notion, limits, and regime of the continental shelf. The basic concept of the sovereign right of the coastal State as regards resources of an area of the seabed beyond the external limit of the territorial sea had emerged in State practice only since the mid-1950s. It has been rightfully said that the Convention “crystallises” a relatively quick process of formation of a customary rule, which also includes the notion that the rights of the coastal State over the shelf do not require occupation or express proclamation. Interestingly, it is one of the “sub-regimes” that is further enhanced by International Law cases and has introduced notorious measurement systems set up to delimitate maritime areas: the rule on delimitation, based on the “equidistance” plus special circumstances concept, was clearly indicated by the ICJ as not corresponding to customary law⁵¹. It is noteworthy, however, that recent developments in the ICJ case law on delimitation have brought the Court to accept an “equitable principles/special circumstances” method which, as recognized by the Court, is “very similar” to the equidistance/special circumstances method of the CCS⁵². Ultimately, the OPSD, to which only States parties to at least one of the Geneva Conventions can become a party, provides for compulsory jurisdiction of the ICJ for all disputes concerning the

⁴⁹ See Roiger-Simek, 2020.

⁵⁰ See Hosanee, 2009.

⁵¹ See *North Sea Continental Shelf (Federal Republic of Germany/Netherlands)*, 1969, p. 42.

⁵² See *Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*, 2002, p. 441.

interpretation or application of the Conventions, unless the parties to the dispute agree to arbitration or conciliation. Yet, this Protocol has never been applied in practice.⁵³

Finally, the Third UN Conference on the Law of the Sea (UNCLOS III) marked a watershed moment. Convening in 1973 and culminating in the 1982 Law of the Sea Convention, this landmark conference aimed at focusing on two issues which remained unresolved in the Geneva Conventions, namely the breadth of the territorial sea and fishery limits. Also, and crucially to our study, it established a comprehensive framework governing all aspects of the Law of the Sea, including a dedicated regime for the protection and maintenance of submarine cables. Overall, while it has been widely stated that UNCLOS III covered an extremely wide range of issues, it was quickly realised throughout the negotiations that the outcome would need to be a “package deal” if it were to be widely accepted⁵⁴, which at the end was successful.

	1884 Convention ⁵⁵	Geneva 1958 CTS ⁵⁶	Geneva 1958 HSC ⁵⁷	Geneva 1958 CFLR ⁵⁸	Geneva 1958 CCS ⁵⁹	Geneva 1958 OPSD ⁶⁰	1982 Law of the Sea Convention ⁶¹
Germany	1885		1973		1958	1973	1994
Denmark	1885	1968	1968	1968	1963	1968	2004
Sweden	1885				1966	1966	1996
Finland		1965	1965	1965	1965	1965	1996
Estonia							2005
Latvia			1992		1992		2004
Lithuania		1992					2003
Poland	1934		1962		1962		1998
Russian Federation	1885	1960	1960		1960		1997

Figure 4 - Status of implementation of relevant treaties in the Baltic Sea (Source: author and see footnotes)

Note: in green = ratified, yellow = signed and red = not signed nor ratified

⁵³ See Roiger-Simek, 2020.

⁵⁴ See Treves, 2012.

⁵⁵ See International Cable Protection Committee, 1884.

⁵⁶ See Convention on the Territorial Sea and the Contiguous Zone, 1964.

⁵⁷ See Convention on the High Seas, 1962.

⁵⁸ See Convention on Fishing and Conservation of the Living Resources of the High Seas, 1966.

⁵⁹ See Convention on the Continental Shelf, 1964.

⁶⁰ See Optional Protocol of Signature Concerning the Compulsory Settlement of Disputes, 1962.

⁶¹ See Convention on the Law of the Sea, 1982.

On the matter at hand, different LOSC provisions refer to different activities relating to submarine cables and pipelines: For example:

- Articles 87(1)(c) and 112(1) refer to the “liberty” or right of laying of submarine cables and pipelines in the high seas.
- Article 145(a) refers to “drilling, dredging, excavation, disposal of waste, construction, operation or maintenance of...pipelines (which, while not being the same as submarine cables, they share a similar regime in what environment protection is about, as similar dispositions refer to both systems)”.
- Articles 79(1) through 79(5) are especially relevant, as they refer to laying, maintenance and repair of submarine cables and pipelines in the continental shelf; article 58(1) refers to both laying and operation of submarine cables and pipelines in the EEZ and the liberty to navigate above them.
- Article 51(2) refers to agreements concerning repair, maintenance, and replacement of cables on foreign waters previous agreement or notice. Similarly, articles 113 to 115 explicitly refer to rupture or damage of submarine cables by accident or negligence, yet these provisions do not apply if the breach occurs with the legitimate purpose of saving the lives of the crew or the safety of the ship, after having taken all measures to try not to cause such damage.
- Article 10(a)(i) explicitly defines an act of piracy one that acts against goods that are not found inside the jurisdiction of any state (such as the high seas).
- Article 297(a) gives the Convention solicit powers to submit controversies emanating from the previously stated articles concerning submarine cables to the solving mechanisms described in section 2⁶².

Beyond that, a brief analysis on the language used for those articles reveal some shortcomings: some activities relating to submarine cables and pipelines such as surveys, drilling for purposes of laying, burial, and securing of submarine cables to the seabed; and abandonment or removal of those cables are not explicitly stated in the LOSC. For instance, consulted provisions of the LOSC⁶³ mention that, while article 87 refers to laying, articles 79(2) and (5) refer to maintenance and repair, which could further an argument whether those articles are in favour or against the meaning of the term “laying” as stated in Article 87. This question could be solved by utilising the tools coming from treaty interpretation⁶⁴, more specifically, through the lenses of the Vienna Convention on the Law of the Treaties (1969). In this regard, the interpretative method and reasoning for determining that the scope of a LOSC provision encompasses other activities relating to cables and pipelines, and if so which ones, will differ depending on a variety of factors, including the terms of the provision in question, whether the activity relates to a submarine cable or pipeline, the activity itself as well as the maritime space in which such activity takes place. For that, an argument could be made that, in order to operate

⁶² Those being the International Tribunal for the Law of the Sea (a), the International Court of Justice (b), any other tribunal of arbitration constituted according to Annex VII-Arbitration (c), or any other special regime tribunal constituted following Annex VIII-Special Arbitration (d).

⁶³ See Convention on the Law of the Sea, 1982, art. 87.

⁶⁴ See Roach et al., 2020.

the infrastructure, it is assumed, necessary and/or required to survey the environment, drilling (both in the continental shelf and the high seas, with the exclusive rights to states when warranted), conduct operations involving repairs or maintenance and, in some capacity, to remove or abandon part or the totality of outdated structures. All these dispositions could therefore fall under articles 79 and 87 when necessary.

Furthermore, other dispositions especially relevant to the field of study concern ownership of the infrastructure and communication; and state jurisdiction. First, it is important to acknowledge that there are two distinct perspectives on the matter of who are the holders of the freedom to lay submarine cables and all the related infrastructure. On the one hand, revisionists and constructivists of International Law can argue that, due to the nature of the information being transmitted through, as well as the notional acknowledgment that a liberalisation of International Law does indeed exist, individuals have acquired rights towards submarine cables through the LOSC⁶⁵. Indeed, some of the consulted literature argues that the language of the articles under LOSC, particularly article 87⁶⁶, may suggest an alternative way of thinking when considering that such article gives full liberty to states to exercise their sovereign rights in the high seas but 1) arguably LOSC and its articles constitute self-executing treaty provisions in domestic law⁶⁷ (meaning that it becomes enforceable within a country's legal system, without needing any further action by the national legislature) and 2) and more crucially, historical practice has shown that private owners and entities have exercised those rights and related activities on their own and states have not shown apprehension towards it. Recent doctrine may also be supportive of such statement⁶⁸.

Analysis of Legal Jurisdiction

Practice in International Law may support this argument to some extent: states may have permitted individuals to conduct a certain number of activities on the high seas when it is required of them as International Law abides them to do so, considering that “rights or obligations under International Law are those of states, and the rights of individuals (personal jurisdiction) rest on the domestic law that derivatives from the implementation of such freedoms of states”⁶⁹. In related cases *Dispute regarding Navigational and Related Rights (Costa Rica v. Nicaragua)* and *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*, both from the ICJ, the Court found that individuals may acquire individual rights in regard to customary International Law, but those rights were inherently related to their condition of being part of a State under an obligation towards those rights, and those acquired rights are significantly reinforced when substantially backed by historical evidence and continued practice: “for the Court, the failure of Nicaragua to deny the existence of a right arising from the practice which had continued undisturbed and unquestioned over a

⁶⁵ See Lagoni, 1998 and Roach et al., 2020.

⁶⁶ Article which establishes the principle of freedom of the high seas (art.87).

⁶⁷ Even if some countries, like Spain or the United States, have yet to ratify the LOSC and publish it in their relevant constitutional documents (such as the ‘BOE’ in Spain). That being said, those countries act in recognition of the UNCLOS as a codification of customary international law.

⁶⁸ See Casanovas & Rodrigo Hernández, 2018, p. 181.

⁶⁹ See Roach et al., 2020, para. 20.

very long period, is particularly significant. The Court accordingly concludes that Costa Rica has a customary right⁷⁰.

On the other hand, more compelling arguments can be made to suggest that only countries that have ratified the Law of the Sea Convention truly possess the freedom to lay submarine cables and pipelines under the provisions of the LOSC itself, even in the face of customary law:

First, concerning international owned individual rights, International Law practice, in light of the Advisory Opinion of the Permanent Court of International Justice (PCIJ) (*Jurisdiction of the Courts of Danzig*, 1928) serves as an analogy regarding the question whether an individual or a corporation can be a bearer of international rights and obligations⁷¹ (as per art. 92 of the UN Charter, the continuity of the PCIJ is secured in the statute of the ICJ⁷²). In the present conceptualization of the International legal system, there was/is no place for the individual to obtain rights or bear obligations under International Law, even if some trends and notorious opinions, such as the one of late ICJ Judge Cancado Trindade, may opt for a different vision of customary International Law⁷³. The PCIJ did not accept that individuals are in all circumstances able to be holders of international rights (and thus bearers of obligations). It is otherwise accepted that a treaty may establish such rights (and obligations), under the condition that this is the intention of the treaty parties. In other words, because it refers to enforceability before domestic courts, which may suggest that in order for a treaty to create rights for individuals, explicit self-execution of the particular provisions of the treaty invoked before domestic courts is a requirement (or evidence of a right under International Law)⁷⁴. Invoking doctrine from that era also gives us a similar view of the topic, such as Anzilotti⁷⁵, who viewed this passage as non-supportive of the argument that a treaty can confer rights or impose obligations on individuals *per se* under International Law, because the Court referred to rights “enforceable by the national courts, or the Court’s requirement that the treaty’s object is to create rights of individuals directly under International Law.

Secondly, concerning treaty law, is that the intention of the parties to create rights on individuals is consistent with the current structure of the law of treaties, and thus be stated as

⁷⁰ See *Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicaragua)*, 2009.

⁷¹ *It may be readily admitted that, according to a well-established principle of international law, the [treaty], being an international agreement, cannot, as such, create direct rights and obligations for private individuals. But it cannot be disputed that the very object of an international agreement, according to the intention of the contracting Parties, may be the adoption by the Parties of some definite rules creating individual rights and obligations and enforceable by the national courts.* As seen in: (*Jurisdiction of the Courts of Danzig*, 1928) (Pecuniary Claims of Danzig Railway Officials who have passed into the Polish Service, Against the Polish Railways Administration), PCIJ Reports, Series B, No. 15, 3 March 1928.

⁷² See Simma, 2012 and the United Nations Charter, 1945, art. 94.

⁷³ In “International Law for Humankind: Towards a New Jus Gentium” (by Judge Trindade, 2010), he mentions how the general principles of law emanate from human conscience, rescuing international law from the pitfalls of state voluntarism and unilateralism which he considers to be incompatible with the foundations of a true international legal order. He also makes a brave statement, enunciating that “ultimately all law exists for the human being; and that the law of nations is no exception”.

⁷⁴ Some correlation exists here with the rules of interpretation provided for in Article 31 of the Vienna Convention on the Law of Treaties of 1969 if those are present in the aforementioned treaty.

⁷⁵ See Dionisio, 1929, p. 407.

such. Customary practice makes it so just as treaties cannot create rights or obligations for third States, unless the intention of the parties has been to create such rights and obligations and that third States have consented to such rights and obligations, following a similar principle to other *erga omnes* rights⁷⁶. Acknowledging the difference between the rights and obligations of third States towards treaties and rights/obligations of individuals, an analogy could be drawn in the sense that the question is about whether and under which conditions non-parties to treaties may acquire rights/obligations. The intention of the treaty parties is a requirement for the creation of rights and obligations for third States; this should also be a requirement if individuals are to acquire rights and/or obligations under a treaty⁷⁷.

Thirdly, international investment arbitration decisions made under treaties between States concerning the protection of foreign investment may provide some guidance by analogy about the question as to whether individuals acquire rights under the LOSC. An example can be found in the three investor-State arbitrations under Chapter XI of NAFTA brought by US investors against Mexico⁷⁸: Mexico argued as a defence that it did not comply with its investment protection obligations under NAFTA as a countermeasure against the US, the State of nationality of the investors that were Claimants, because the US had first violated the trade obligations under NAFTA. One of the Claimants' arguments was that Mexico's measures impaired their "individual substantive rights" under Chapter XI of NAFTA, which provides substantive and procedural rights for investors independent from the inter-State relationship between NAFTA's treaty parties. The Tribunal found that Chapter XI sets forth substantive obligations that are inter-State and do not confer substantive rights to individuals. It considered that this position "respects the traditional structure of International Law and the object and purpose of Chapter Eleven".

In *Corn Products v. Mexico* (2008), the Tribunal ultimately sided with the claimant. The reasoning focused on the substantive and procedural rights (not simply interests) acquired by investors under Chapter XI. Therefore, the wrongfulness of Mexico's violations could not be negated with respect to the investors. The Tribunal's core holding was that "States are not the only entities which can hold rights under International Law; individuals and corporations may also possess rights under International Law." They further elaborated that for treaty-derived rights, the key question lies in the treaty text itself. Specifically, the text must reveal an intention to confer rights not just upon the signatory states, but also upon individuals and/or corporations. *Cargill v. Mexico* (2009) further solidified this precedent. The Tribunal in this case reaffirmed that investors acquire rights directly under NAFTA.

Finally, and even if the specific method for identifying such an agreement was not explicitly addressed in *Cargill v. Mexico*, all three tribunals (including *ADM v. Mexico* and

⁷⁶ See the 1969 Vienna Convention on the Law of the Treaties, 1980, arts. 34–36; *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory. Advisory Opinion*, 2004 and the ILC's Responsibility of States for Internationally Wrongful Acts, 2001.

⁷⁷ See Roach et al., 2020.

⁷⁸ See the cases *Archer Daniels Midland Company and Tate & Lyle Ingredients Americas, Inc. V. United Mexican States*, 2007; *Cargill, Incorporated v. United Mexican States* and *Corn Products International, Inc. V. United Mexican States*, 2008, arts. 164–166.

Corn Products v. Mexico) implicitly agreed that treaty interpretation was paramount. *ADM v. Mexico* focused on the object and purpose of Chapter XI, along with the subsequent practice of its parties, while *Corn Products v. Mexico* centred its analysis on the treaty text itself. Significantly, all three tribunals concurred that the agreement of treaty parties, reflecting their intention, can be constitutive of rights for individuals under the treaty in question.

Fourth, the practice of one LOSC party confirms the interpretation that some LOSC provisions do not establish rights for individuals. In *Intertanko* (2008)⁷⁹, the European Court of Justice found that under numerous LOSC provisions concerning navigation, individuals are not granted rights. The Court's pronouncement concerning freedom of navigation, which to some extent is structurally similar to that of the freedom to lay submarine cables and pipelines, may by analogy support the position taken here that the LOSC freedom to lay submarine cables and pipelines is not conferred on individuals. Furthermore, in the *MOX Plant Case (Ireland v. United Kingdom)* of 2008⁸⁰, it clarified that some LOSC provisions regarding marine environment protection create obligations for states, not individual rights for citizens to sue directly, as well as affirming that identical or similar provisions in different treaties may be interpreted in different ways because of differences in the respective contexts, objects and purposes, subsequent practices of the parties. Finally, it is established in a well-founded manner in constitutional law that all the provisions of LOSC in matters of maritime law already constitute constitutional law in those countries that have incorporated them, as reflected in the sentences *Nicaragua v. Colombia*⁸¹ and *Peru v. Chile*⁸², and it forms a principle applicable even in the case where no-ratifying states are pitted against member states⁸³.

In sum, the most extended consensus on the topic at hand is that there is no evidence in the preparation procedure of the UN LOSC or on the articles themselves that the treaty, or the intentions of those clauses, were to provide or establish individual rights of individuals related to activities involving submarine cables.

Relevant Articles Analysis and Evolution

Given the increased importance of submarine cables to the international community, it was no surprise that the ILC spent some time considering submarine cables during its sessions. With regards to the protection of submarine cables, there was considerable debate during the ILC sessions on whether to include the provisions of the 1884 Cable Convention in any codification attempts on the law of the sea. This was part of a larger debate on whether the ILC should attempt to codify all aspects of maritime law, particularly when the subject was regulated by the convention. Ultimately, there is a consensus that the main UNCLOS provisions on submarine cables have largely evolved from the 1958 Geneva Convention on the

⁷⁹ See the case *On the Application of International Association of Independent Tanker Owners (Intertanko) and Others v Secretary of State for Transport*, 2006.

⁸⁰ See Churchill & Scott, 2004 and the case *MOX Plant Case (Ireland v. United Kingdom)*, 2008, p. 656.

⁸¹ See the case *Question of the Delimitation of the Continental Shelf between Nicaragua and Colombia Beyond 200 nautical miles from the Nicaraguan Coast (Nicaragua v. Colombia)*, 2016.

⁸² See the case *Maritime Dispute Case (Peru v. Chile)*, 2014.

⁸³ See Espósito et al., 2017.

High Seas and Continental Shelf, and in turn can be traced directly to the 1884 Cable Convention. This section will focus on how several UNCLOS cable articles are direct descendants of similar articles in the Cable Convention.

Despite that, only three articles on the protection of submarine cables from breakage or injury (dealt with above) in the 1884 Cable Convention were incorporated into the ILC Draft Articles. A review of the negotiating history of UNCLOS confirms this fact⁸⁴. It is suggested that it was on this basis that these three articles were essential principles on the Law of the Sea and were consequently necessary to include in any codification effort. Accordingly, the ILC only adopted Article 2 (protection of cables beneath the high seas from breaking or injury through wilful action or culpable negligence⁸⁵), Article 4 (indemnification obligation for breaking or injury of cable by another owner) and Article 7 (indemnification obligation for ship owners for sacrifice of equipment) from the 1884 Cable Convention (see Figure 5 below). In addition to three provisions in the 1884 Cable Convention, the ILC Draft Articles also contained an article which required States to regulate trawling to ensure that all fishing gear used shall be constructed and maintained as to reduce any danger or fouling of submarine cables or pipelines.

Article in the 1884 Cable Convention	Article in the 1956 Geneva Conventions	Article in the 1986 UNCLOS
2	27	113
4	28	114
7	29	115

Figure 5 - Succession of articles from the 1884 Cable Convention to 1986 UNCLOS (Source: author).

That being said, for parties to both UNCLOS and the Cable Convention, the latter’s articles that are not directly incorporated into UNCLOS continue in force among those parties since they do not conflict with UNCLOS, as stated in article art. 311(2):

“This Convention shall not alter the rights and obligations of States Parties which arise from other agreements compatible with this Convention and which do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under this Convention. The Convention explicitly goes beyond preexisting International Law in crucial areas of submarine cable installation, maintenance, and operations and provides binding dispute resolution to ensure

⁸⁴ See Simma, 2012, pp. 267–297, where it is stated that (113.2 - “The origin of Article 113 can be traced to Article II of the” Cable Convention, 113.7(b)); at 272 (114.2 - “The origin of article 114 can be traced to Article IV of the” Cable Convention); at 276-277 (115.2 - “The origin of article 115 can be traced to article IV of the” Cable Convention, 115.7).

⁸⁵ The origin of the term ‘culpable negligence’ is found in two early British cases: *Submarine Cable Company v. Dixon*, *The Law Times, Reports-Vol. X, N.S.* at 32 (1864) and *The Clara Killian*, *Vol. III L.R. Adm. and Eccl.* at 161 (1870).

proper enforcement of these new obligations, but only for countries that are parties to the Convention.”

Such a statement is especially relevant in the Baltic Sea, considering that all the actors in our theatre of operations have ratified the 1982 Law of the Sea Convention, and a considerable amount of them are members of the 1886 Cable Convention (see Figure 4). Also, to some extent, UNCLOS even contributed to expanding this specific regime in two main pieces: articles 87 (on the high seas) and article 112 (on building a submarine cable network in the high seas), which will be analysed in the following section.

LOSC art.87

Article 87(1)(c) of Part VI of the LOSC deals with the freedom to lay submarine cables, and reads as such:

1. “The high seas are open to all States, whether coastal or land locked. Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of International Law. It comprises, inter alia, both for coastal and land-locked States: (c) freedom to lay submarine cables and pipelines, subject to Part VI.”
2. “These freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area.”

Looking back at the original predecessor (the 1884 Cable Convention), one can observe that it did not include any provision compared to art. 87 on the basis that the right to use the ocean was a freedom conceded to all parties⁸⁶, and some provisions to that effect were present in the Convention in the form of art. I, which states that the Convention applies to the “outside territorial waters to any cables landed at the possessions of any of the Contracting Parties”⁸⁷, a principle also sustained in the doctrine of the time. Further on, the ILC Commission realised that some issues were arising concerning the protection of the infrastructure in the high seas⁸⁸, and it was soon realised that significant amends ought to be made in favour of a more comprehensive perspective on the matter: all states were eligible to lay cables⁸⁹ (especially relevant considering the multiplicity of states after the Second World War) and that pipelines and electric, high-tension cables were incorporated into the regime (as it was considered that, to some extent, both were ways of communication). Further on, UNCLOS I proved as a staging ground for all these novelties, as the text emanating from art. 27(3) of the 1956 ILC Articles was mainly maintained with some adjustments (art. 2(3) of the HSC)⁹⁰:

⁸⁶ See McDougal & Burke, 1987, p. 781.

⁸⁷ See International Cable Protection Committee, 1884, art. I.

⁸⁸ See François, 1950.

⁸⁹ See International Law Commission, 1950.

⁹⁰ See the Convention on the High Seas, 1962.

“The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas is exercised under the conditions laid down by these articles and by the other rules of International Law. It comprises, inter alia, both for coastal and non-coastal States: [...]

(3) Freedom to lay submarine cables and pipelines.

These freedoms, and others which are recognized by the general principles of International Law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas.”

Two major incorporations can be observed here: a) the phrase "under the conditions laid down by these articles and by the other rules of International Law" originated from the commentary by the ILC and art. 1(2) of their 1956 Series of Articles concerning territorial waters. This proposal gained support due to the reasoning that any freedom exercised for the benefit of all participants necessitates regulation. Therefore, the freedom of the high seas should be subject to the provisions outlined in the convention and existing International Law; and b) that the wording “both for coastal and for non-coastal States” was also added. It also introduced a “reasonable regard” clause in the exercise of the freedoms of the high seas, including the freedom to lay submarine cables and pipelines, which encouraged actors to refrain from acting in a way that may seem averse to use of the high seas by other States.

Finally, regarding its usage in international jurisdiction (considering both art. 2(3) of the HSC or art. 87(1)(c) of the LOSC), there are four (4) cases that are relevant to further the interpretation and/or usage of such clauses. Yet, none of those deal specifically with the freedom to lay submarine cables, but ought to be of service should the need for it arise:

First, on the *Fisheries Jurisdiction Case (United Kingdom v. Iceland)* of 1974, the ICJ reflected on the construction “reasonable regard” that appears in art.2 of the HSC. The Court considered that Iceland’s actions in extending fishing zones unilaterally violated such a principle. The Court considered that, due to the nature of the litigation and the State’s involved (plus their shared history), their rights should be reconciled and must continue to coexist, as no right is absolute in this case⁹¹, negotiation being the correct way forward for both. Second, in the *Chagos Archipelago Arbitration (Mauritius v. United Kingdom)*, the Permanent Court of Arbitration (PCA) was called upon to clarify both the terms “under the conditions laid down by [...] other rules of International Law” and “due regard”. On the first, the PCA reflected on the link between art. 87(1) and art. 2(3) of the HSC and concluded that the obligation in art. 2(3) is “limited to exercising sovereignty subject to the general rules of International Law” and that LOSC parties ought to operate in good faith in the completion of their duties related to the treaty. On the second, and socially relevant considering the following to cases, is the matter of “due regard”. Based on its view of articles 87(2) and 56(2), the PCA found that the UK (who

⁹¹ See the case *Fisheries Jurisdiction Case (United Kingdom v. Iceland)*, 1974, paras 67–78.

was the party bound to the principle in the case) was required to “reasonably” consult Mauritius on which rights and interests that were affected by the UK’s actions⁹².

Third and fourth, the cases *South China Sea Arbitration (Philippines v. China)* of 2016 (PCA) and *The Dispute Concerning Delimitation of the Maritime Boundary Between Bangladesh and Myanmar in the Bay of Bengal (Bangladesh v. Myanmar)* of 2012 in the International Tribunal for the Law of the Sea (ITLOS) both dealt with the conclusions extracted from “due regard” in *Mauritius v. United Kingdom*. In the *Philippines v. China* case, the Court considered that China failed to exhibit “due regard” for the Philippines sovereign rights under UNCLOS art. 58(3)⁹³, while in the last case ITLOS applied the principle in regards to articles 56, 58, 78 and 79 of the LOSC in matters regarding “grey areas”, which are ones that reflect specific geographical zones where State A has sovereign rights over a continental shelf area where State B also has sovereign rights in the EEZ suprajacent to the continental shelf after delimitation has taken place⁹⁴. This last point is of special relevance should a revisionist trend emerge in the context of the Baltic Sea, which is not as far-fetched as it would have been a decade ago considering the souring of relations between Russia and the Atlantic alliance in what is widely considered a quiet theatre regarding maritime delimitation.

In sum, this section discusses three key points related to the freedom to lay submarine cables or pipelines on the high seas according to the LOSC. Firstly, it explores whether the term “laying” encompasses activities beyond the physical installation, such as surveying, repair, and maintenance. The interpretation may depend on treaty interpretation, with no clear evidence in the preparatory works indicating the exclusion of other activities. Secondly, the text notes that LOSC, in its art. 87, grants this freedom to all states without distinguishing between coastal and landlocked states, and there is no evidence suggesting that individuals were intended to be the bearers of this freedom (as previously seen). Lastly, questions arise regarding the “due regard” obligation, which imposes limitations on the freedom to lay submarine cables or pipelines by considering the interests of other states and the rights under LOSC. The extent of this obligation depends on the circumstances, and our work suggests a need for further consideration regarding recent developments in laying submarine cables in the “Area”.

LOSC art. 112

Article 112(1) of part VII on LOSC reads:

Right to lay submarine cables and pipelines

1. All States are entitled to lay submarine cables and pipelines on the bed of the high seas beyond the continental shelf.

⁹² See the case *Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom)*, 2015, paras 513–519.

⁹³ See the arbitration case of *The South China Sea Arbitration (The Republic of Philippines v. The People’s Republic of China)*, 2016, para. 757).

⁹⁴ See Roach et al., 2020, p. 16 and *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission (SRFC)*, 2015, para. 216.

2. Article 79, paragraph 5, applies to such cables and pipelines.

The lineal evolution such an article is similar to the last instalment (art.87), in the sense that it is somewhat born from the same, non-specific statement in art.I of the 1884 Cable Convention, stating that it (the Convention) applies to “outside territorial waters to any cables landed at the possessions of any of the Contracting Parties”⁹⁵. It becomes more developed in the redaction of the ILC (1956), when it becomes the basis of art. 61(1) of the Series of Articles, recognizing the freedom to lay cables, high-voltage connections, and pipelines (which were added similarly to the previously analysed article), and giving further rights to all states, even those with no coastline. Further on, the principle was further matured at UNCLOS I, where the provisions concerning high-voltage cables were dropped after an US proposal covering art.26 of the HSC, as well as adding precautionary measures in terms of previous surveillance of the seabed for existing cables and similar infrastructures⁹⁶.

UNCLOS III became the object of a rigorous consideration at the meetings of the Convention⁹⁷. Discussions appear to have focused on two main areas. On the one hand, some States wanted to ensure that the laying of submarine cables and pipelines did not interfere with other uses of the high seas⁹⁸, while on the other, there was the interaction of the high seas’ regime on submarine cables and pipelines with the new regime of the EEZ and the existing continental shelf regime. Ultimately, informal negotiations in the context of the Sea-Bed Committee gave birth to the modern iteration of art.112 of the LOSC. There is also the consideration that the statement “all States” may give some individual rights to owners and private corporations, yet as previously discussed, specialised literature⁹⁹ does not give a lot of room in that regard: while those private owners are entitled to these provisions, customary law has established that these cable owners may lay, maintain and operate their cables on the high seas on the basis of and in accordance with their State’s law, as it is not a self-executing provision.

In sum, art. 112 complements the existing high seas rules for submarine cables and pipelines set out in art. 87(1)(c). All countries, regardless of whether they have a coastline or not, can exercise this freedom. This includes not just the nation where the pipeline or cable owner is registered or operates, but also the countries exporting or importing the resources transported. For instance, if a submarine power cable carries electricity or a pipeline carries oil or gas, both the sending and receiving countries uphold this freedom. This makes sense because the freedom to lay these structures also implies the freedom to operate them. In some cases, the nation where the owner or operator of the submarine cable or pipeline is registered might not be directly involved (like the NordStream infrastructure, which is registered in Switzerland). However, the countries sending and receiving the resources still have a stake (potentially even

⁹⁵ See François, 1950.

⁹⁶ See Nelson, L. D. M. 2001.

⁹⁷ See Nandan & Kraska, 2011, p. 780.

⁹⁸ See Roach et al., 2020.

⁹⁹ Ibidem; also see Lagoni, 1998, p. 13.

a legal one) and can claim their own freedom to lay these structures, even if they aren't the owner, operator, or installer.

Cable Convention art. II - LOSC art. 113

As it can be seen in figure 5, the origin of article 113 can be traced back to art. II of the 1884 Cable Convention, which states that “it is a punishable offence to break or injure a submarine cable, wilfully¹⁰⁰ or by culpable negligence [...] such punishment being without prejudice to any civil action for damages. This provision does not apply when those who break or injure the cable with the lawful object of saving their life or their ship”¹⁰¹. At first glance, the crimes described in art. 2 invites universal jurisdiction, yet neither the historical context nor the primal state of modern International Law would invite it. Some states proposal in subsequent committees addressed the proposal of making it a crime parallel to piracy, yet it failed¹⁰². Furthermore, it is known that the main asset of the 1884 Cable Convention is to give primary jurisdiction to the State of registration of the offending vessel and secondary jurisdiction to the state of citizenship of the offender (art. 8); also, there is no general rule for civilian claims on damages, yet the penal responsibility does not prejudice civil action for damages. which are applicable to each State party¹⁰³.

The ILC adopted art. 2 of the 1884 Cable Convention into art.62 of the ILC series of Articles, adding the fact that ruptures in the high seas do also apply. It also extended the protection to high voltage cables and pipelines, and most importantly, it became leaner regarding incidents on cables or other infrastructure which may be incorrectly or insufficiently marked, thus the rule of “culpable negligence” does not apply¹⁰⁴. Finally, UNCLOS I crystallised the principle in art. 27 of the HSC, and UNCLOS III in art. 113. The previous reinforced elements such as the state primacy in taking the necessary legislative measures to provide that the breaking of the cable in the continental shelf or the high seas constitutes a punishable offence; and the latter incorporated the statement “this provision shall also apply to conduct calculated or likely to result in such breaking or injury” due to alleged concerns with fishing vessels¹⁰⁵, as well as the elimination of the phrase “without prejudice to any civil action for damages”, which had been kept since art. 2 of the Cable Convention (1884). In sum, art. 113 leaves the implementation of domestically punishable offences to the flag state’s domestic jurisdiction, obliging them to adopt the necessary regulations to persecute offenders, which may make it not appropriate to deal with more systemic threats such as rogue/hostile states or non-state actors. Furthermore, international practice has also denoted that a) art. 113 requires states to exercise jurisdiction penalising conduct, yet it is silent in prescribing persecution; and b) that art.113 has not been properly enforced by states and it is becoming further inadequate

¹⁰⁰ Defined in a way that it is intentional, or determined to do as you want, the 1884 Cable Convention saw it relevant to argue that responsibility does not apply to cases of breakage caused accidentally or by necessity in the repair of the infrastructure, with the usual precautions applying and in Anand, 1982.

¹⁰¹ See the International Cable Protection Committee, 1884, art. II.

¹⁰² See both Anand, 1982 and Davenport, 2015.

¹⁰³ See International Cable Protection Committee, 1884.

¹⁰⁴ See United Nations, 1957, art. 62.

¹⁰⁵ See Nandan & Kraska, 2011.

to deal with new threats in the “grey zone”¹⁰⁶, yet this final notion shall be entertained in the following chapter.

Cable Convention art. IV- LOSC art. 114

Art. 114 of the LOSC was inspired by article IV of the 1884 Cable Convention, that states that: “The owner of a cable which, on laying or repairing its own cable, brakes or injures another cable, must bear the cost of repairing the breakage or injury, without prejudice to the application, if need be, of art. 2 of the present Convention”¹⁰⁷. On the fair side, such an article does not bear more responsibility to what it is explicitly said here, to empower competent courts to decide in conformity to their national laws the question of civil responsibility; yet it was deemed important enough to be incorporated in the ILC Series of Articles of 1956 (art. 63), which only added provisions concerning the high seas, UNCLOS I (which became art. 28 in the HSC), which limited the liability to the cost of repair and not the burden to replace the cable or other lost profits; and finally UNCLOS III, where it became art. 114 without significant modifications. Overall, somehow there is a departure from the tendency to defer to flag State jurisdiction typical of other articles concerning submarine cables¹⁰⁸, while at the same time it requires states to exercise their jurisdiction based on “active nationality” over the owner of the cable rather than other doctrines¹⁰⁹.

Cable Convention art. VII- LOSC art. 115

Art. 115 of the LOSC was, in turn, inspired by art. 7 of the 1884 Cable Convention, which read: “Owners of ships or vessels who can prove that they have sacrificed an anchor, a net, or other fishing gear in order to avoid injuring a submarine cable, shall receive compensation from the owner of the cable [...] evidence by the crew ought to be drawn up immediately in order to claim such a compensation”¹¹⁰. Successive revisions in subsequent conventions did not change significantly, adding the by now traditional statements concerning “provided the owner of the ship has taken all precautionary measures beforehand” and similar statements concerning negligence (ILC art. 65), UNCLOS I (art. 29 HSC) and UNCLOS III (art. 115), where it rose little to no debate but was maintained in the effort to maintain a well-established practice of reimbursements in case of accidents at sea. Overall, this provision is intended to prevent damage to submarine cables, with a rather narrow sense of civil liability¹¹¹.

Yet, unlike articles 2, 4 and 7, other Cable Convention articles have no direct reference in UNCLOS. The principle articles not in UNCLOS that, according to the current trends at sea and the complex geopolitical environment we are currently in, it is the opinion of the author and the literature around the topic that the following articles ought to be amended and somehow

¹⁰⁶ As recognized in the United Nations General Assembly in the Resolution on Oceans and the Law of the Sea of December 10th, 2019, A/Res/74/19 (United Nations, 2019) and A/RES/78/69 on December 5th 2023 (United Nations, 2023).

¹⁰⁷ See International Cable Protection Committee, 1884, art. IV.

¹⁰⁸ See Burnett et al., 2014; Nandan & Kraska, 2011.

¹⁰⁹ See Roach et al., 2020, p. 26.

¹¹⁰ See International Cable Protection Committee, 1884, art. VII.

¹¹¹ See Nandan & Kraska, 2011.

incorporated, or even amend other relevant treaties at sea, such as the Convention on the International Regulations for Preventing Collisions at Sea of 1972 (COLREGS):

Cable Convention art. 5

Article 5 involves an old problem still very much present in most modern cable repairs: there is usually some interference with the cable ship by other vessels, principally fishing vessels that are impeding a cable ship engaged in a repair, whether by design, negligence, or inattention. Such action is a violation of COLREGS, under which a vessel engaged in laying or repairing a cable is considered a “vessel restricted in its ability to manoeuvre” (COLREGS, rule 3(g)(i)). Such action was firstly recorded in 1881, when a cable broke in the North Sea and fisherman affected by the infrastructure attempted to hold the repair ship at ransom¹¹²; or more recently in the case “Ninety-Four Consortium Cable Owners vs. Eleven Named French Fishermen”, by the Tribunal de Grande Instance de Boulogne Sur Mer (1st Chamber), on August 28, 2009, where it was found that these fishermen violated articles of French national law which were derived directly from article 5 of the Cable Convention.

COLREGS Rule 18 simply requires that vessels to “keep out of the way of” the cable ship, but no objective distance to measure keeping out of the way is provided¹¹³. That is a problem for cable repair ships engaged in repairs, and such statement was reaffirmed in the case already mentioned; other vessels can come as close as they want to the cable ship as long as there is no physical contact. On the other hand, the Cable Convention Article 5 clearly states that the “keep away” distance is of one nautical mile (1nm).

Cable Convention art. 10

Article 10 of the Cable Convention states that offences against the Convention “may be verified by all means of proof allowed by the legislation of the country of the court”¹¹⁴. It was conceived when officers commanding warships, or ships specially commissioned for the purpose by one of the High-Contracting Parties, had reason to believe that an infraction of the measures provided for in the convention were committed by a non-warring vessel, so they may demand from the captain the official documents proving the nationality of the said vessel in order to identify to whom may a letter of complaint and/or compensation be issued. To some extent, article 10 dealt with the vital task of obtaining evidence of violations for the civil and criminal penalties required to be implemented by Member States for Articles 2, 5 and 6.

That being said, UNCLOS is silent on how evidence of infractions of Article 113-115 are to be obtained. This is a major gap because violations are likely to occur on the high seas with no witnesses but the crew of the culprit vessel. In the modern era, the Automatic Identification System (AIS) is now becoming a useful tool in identifying culprit vessels, but its use is limited, it is not always mandatory in some national jurisdictions (such as the Russian

¹¹² As seen in Renault, “The Protection of Submarine Telegraphs and the Paris Conference (October-November 1882) in Brussels and Leipzig,” *International Law Review* (Flanders: Merezbach & Falk).

¹¹³ See the *Convention on the International Regulations for Preventing Collisions at Sea (COLREGs)*, 1972.

¹¹⁴ See International Cable Protection Committee, 1884.

Federation) and, in most cases, it may not alone be sufficient evidence. In this sense, there is only one case when an identification following article 10 has happened¹¹⁵. Under UNCLOS, boarding of vessels by warships or coast guard vessels outside territorial seas is restricted, only possible in very limited circumstances¹¹⁶, such as a vessel reasonably suspected of engaging in piracy or refusing to show its flag can be engaged.

Similarly, vessels can be boarded with flag state consent¹¹⁷, so an argument can be made that Cable Convention parties have already consented for visits by warships of other parties in regimes that have constituted customary law, as previously proven. Yet these nations constitute a small number of the world's merchant and fishing fleets¹¹⁸. In that sense, a modern international legal solution could include bringing attention to the problem of obtaining evidence on the high seas of threatened and actual hostile actions against submarine cables. Regarding physical challenges, the two primary concerns are that the cables might be destroyed or tapped—by either a non-state actor, such as contemporary actions carried by non-state actors like the alleged Houthi attacks on cable infrastructure on February 24th and March 5th, in the context of rising geopolitical tensions in the Red Sea area or, more likely, by a state adversary like Russia.¹¹⁹. Arguably, flag state consent may be likely to be obtained speedily when the procedures are spelled out by the international community, as these are more likely to become customary, not only regarding law, but also in behaviour. Also, the fact that art. 10 allows warships to require the master of a vessel suspected of having broken a cable to provide documentation in the event of a preventing inspection to show the ship's nationality and thereafter be able to make a report to the flag state may provide an effective deterrent, legal or otherwise, to prospective attacks, a relevant factor in the next chapter.

Conclusion

In sum, this chapter has tackled two major areas of the legal governance of submarine cables: the legal ownership of cables and adjacent infrastructure, and an analysis of the most relevant treaties and articles in International Law tackling these issues.

First, this chapter dives into a complex issue arising from the Law of the Sea Convention. The LOSC governs activities in various maritime zones, and these activities can involve a mix of players – not just governments, but also numerous private companies and individuals. The author, after analysing matters related to international jurisdiction, treaty interpretation, arbitration case analysis and the practical application of the LOSC, specifically examines whether non-State entities, such as companies that lay or own submarine cables and

¹¹⁵ The Embassy of the United States of America refers to the Ministry's note No. 17/OSA, dated March 4, 1959 concerning recent breaks in certain transatlantic submarine telecommunication cables and the consequent visit to the Soviet trawler *Novorossiysk* by a boarding party from the American warship *USS Roy O. Hale*, which was the subject of the Embassy's *aide* documentation of February 28, 1959. See (US Department of State, 1959).

¹¹⁶ See the Convention on the Law of the Sea, 1982, arts. 94–111.

¹¹⁷ *Ibidem* art. 110

¹¹⁸ According to the CIA Factbook (2023) in tonnage, Indonesia (11,422), China (8,314), Panama (8,174), Japan (5,229) and Liberia (4,821) are the countries with the biggest bulk carrier fleets. Of those 5, none are parties to the 1884 Cable Convention. See (CIA, 2023).

¹¹⁹ See Gambrell, 2024 and Wall & Morcos, 2021.

pipelines, or the companies that operate them, gain any rights directly under International Law provisions explored in the chapter.

Yet this exhaustive analysis reveals a key point: the LOSC doesn't appear to establish individual rights directly. There's no evidence within the relevant provisions themselves, nor in the background materials outlining the LOSC's development, that the creators intended to grant such rights to individual people involved in cable and pipeline activities on the high seas. In other words, the LOSC seems to focus on the rights and responsibilities of countries, rather than individual companies or people working for those companies. All individual rights that could, arguably, be gained from treaty interpretation are intrinsically related to the fact that these companies (or individuals) have a demonstrable link towards its state of origin, which is the emanating source of these rights.

Secondly, and regarding the treaty governance of submarine cables, this chapter has shown that the rules laid out in the LOSC don't explicitly cover every single action involving cables and pipelines. This difference in how the LOSC talks about these things makes it unclear whether all or only certain activities are allowed under each specific rule. Figuring this out requires examining each LOSC provision itself to see what it means, an exercise of treaty analysis and interpretation. That being said, the evidence shown in our work tends to illustrate a trend towards a progressive codification of the main points in the cable governance, from the 1884 Cable Convention, through the Geneva conventions, UNCLOS I and III and culminating in the LOSC. Furthermore, LOSC application in modern cases of jurisprudence is still somewhat lacking, as cases involving the Law of the Sea are scarce and far between, yet there is a positive drift shown towards arbitration and mediation rather than judicial settlements or other settling instruments as shown in art.33.1 of the UN Charter¹²⁰.

Finally, the research identifies two key areas where the 1884 Cable Convention offers stronger protections for undersea cables than UNCLOS. It is argued that incorporating these Cable Convention provisions, or similar language, into UNCLOS or other relevant maritime treaties would significantly improve the legal framework safeguarding submarine cables. The first gap identified concerns interference with cable repair operations. UNCLOS offers some protection, but it lacks specifics on how far other vessels must stay away from a cable ship engaged in repairs. This ambiguity can create difficulties and potentially endanger repair crews. The second area for improvement relates to evidence collection. UNCLOS is silent on how to gather proof of violations occurring on the high seas, where witnesses are often scarce. The Cable Convention, however, empowers warships under certain circumstances to collect evidence from vessels suspected of violating the Convention's provisions. This ability to gather evidence is crucial for enforcing the rules and holding violators accountable. Therefore, by incorporating these Cable Convention provisions or similar measures into UNCLOS, the author argues, these legal loopholes would be closed. This would strengthen the international legal

¹²⁰ Article 33.1 reads as follows: "The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice".

framework for protecting submarine cables, which are vital for global communication and internet connectivity. The author highlights a recent example of suspected attacks on cable infrastructure in the Red Sea, underlining the growing need for robust legal mechanisms to deter and address threats to these critical underwater assets.

CHAPTER III

NATO's Capabilities to Defend Submarine Cables

With the legal background behind us, we shall delve into the intricacies of NATO's capabilities to defend the underwater infrastructure in the Baltic Sea, otherwise known as CUI, or *Critical Undersea Infrastructure*. Despite its depleted ground forces and strained military industrial base, all product of its ill-advised campaign of aggression in Ukraine, Russian hybrid tactics and its remaining military presence in the Kaliningrad and Leningrad *oblasts* remain the most pressing threat to CUI in northern Europe. In this sense, this chapter will tackle both policies adopted within the Alliance, especially in the light of the events happening in the immediate post-Crimea period¹²¹, and the kinetic measures that NATO possesses in theatre to provide a hard defence of the CUIs, their relevance and adequacy speciality in the light of Sweden's and Finland's recent successful bids of accession in 2023 and 2024¹²².

In this present complex context of GPC¹²³, the focus of CUI debates has shifted from an emphasis on terrorism and cyber threats toward the increasing frequency and efficacy of hybrid tactics¹²⁴, in a sense mirroring the global tendencies of military strategic thinking all over the world in the period post Global War on Terror. Arguably, NATO has not been ready to counter increasingly prevalent Russian aggression against European CUIs just as it has not been able to provide for Ukraine in terms of ammunition and other pieces of hardware in a timely, consistent, and abundant manner. The reasons for that are twofold: Europe's reticence in investing in defence while enjoying the US security umbrella are not without its own set of critical limitations, and the nature of hybrid warfare as a discipline enjoyed mainly by actors not necessarily involved in the whole "rule of law business".

It is also relevant to take a more individualistic view on the inherent characteristics of all NATO allies in the theatre in how they deal with Russia on a generalist basis. On the one hand, Nordic countries, such as Sweden and Finland, former neutral countries to some extent, have been notoriously keen to settle agreements with its much influential neighbour based on (1) survival, considering the imbalance of military power and terrain difficulties; (2) ideology/societal pragmatism, as Nordic countries are more prone to reach agreements and consensus; and (3) economic considerations, as fishing and technology trading is crucial in order to develop the hazardous region¹²⁵. There are also the added ideological/doctrinal challenges on the Russian perspective when some political and military collective argue that negotiating on an equal basis with the Nordic countries undermines Russia's political might¹²⁶.

¹²¹ Understood as the period comprised between March 2014 and 2024; relevant events that shape the reality of underwater security are the start of the war in eastern Ukraine, the upstaging of Russian maritime, aerial, and underwater presence in the Baltic, the 2022 Invasion of Ukraine and its maritime dimension, the 2022 Nord-Stream bombings, the meddling in the Baltic CUI of October 2023 and other relevant events.

¹²² See Monaghan et al., 2023.

¹²³ Great Power Competition.

¹²⁴ See James Foggo III, Vice Adm. & Fritz, 2016.

¹²⁵ See Børresen, 2011, Heininen et al., 2014, Moe et al., 2011 and Regehr, 2019.

¹²⁶ See Heininen et al., 2014.

On the other hand, the Baltic states of Estonia, Latvia, Lithuania, and Poland have had cold relations with Russia since they were under the control of the tsarist Russian Empire. Nowadays, Baltic-Russian relations are strained because of Russia's unfunded concern for its geopolitical security. Ethnic politics and territorial disputes exacerbated pre-existing conflict between the nations and have led to years of Russian intimidation, which is unlikely to cease in the coming years¹²⁷. Furthermore, there is an underlying assumption that Russia is perennially under threat. NATO is not accepted on its own terms as genuinely defensive, and simply by constraining Moscow's strategic options, the Baltic states' strong and understandable commitment to NATO becomes a challenge to Russian security and freedom of manoeuvre. In this sense, deployments of military forces represent not simply Russian responses to perceived vulnerabilities but also demonstrative political acts. For example, the 2016 deployment of dual-use Iskander-M (SS-26) missiles into Kaliningrad were clearly a move calculated for its symbolic as much as practical impact.

Yet, and despite its current limitations, NATO is the primary and maybe sole actor capable of effectively deterring and preventing hybrid attacks on its allies and has expedited its approach to CUI protection by establishing new organisations to that aim. For instance, Article 3 of the Washington Treaty (1949) calls on Allies to build resilience against armed attack through "continuous and effective self-help and mutual aid"¹²⁸, a reference not only to the design and procurement of new weapon systems, but also parallel organisations and initiatives aimed at maintaining such resilience. Yet, parallelly, the European Defence Agency (EDA) has just approved its EU Capability Development Priorities, focused on closing gaps identified in European defence after the war in Ukraine. In this document, the importance of the seabed is highlighted, with an emphasis on capabilities such as mine warfare and anti-submarine warfare¹²⁹. Furthermore, the EU Strategic Compass¹³⁰ underlines the vulnerability of the underwater domain, calling for a new doctrine to address emerging threats, even if the sabotage of two Nord Stream pipelines off the Danish island of Bornholm in September 2022 forced European governments to grapple with their limited ability to deter and defend against hybrid tactics in the undersea domain, and showed yet again how the EU's ability to answer these complex issues is reactive rather than proactive.

NATO's Political Tools

The political discourse of NATO has clearly shifted from 2022 onwards. From being deemed as a "brain-dead" organisation by one of its nuclear guarantors, to becoming one of the most trusted Western multilateral institutions by the citizens it is sworn to protect, contemporary circumstances have reinvigorated the Alliance. Analysing NATO's shift based on a Foreign Policy Analysis (FPA), and according to Hudson and Morin & Paquin¹³¹, in FPA it is assumed that foreign policies are usually determined by the complex interplay of multiple

¹²⁷ See both Galeotti, 2019 and Matthews, 2020.

¹²⁸ See Matjaž Kačič, 2019.

¹²⁹ See Augusto Conte de los Ríos, 2024.

¹³⁰ See EEAS, 2022.

¹³¹ See Hudson, 2005 and Morin & Paquin, 2018.

factors, among which the interplay between international and domestic politics as well as the individual factor. Thus, in the context of a blatant act of aggression of the likes not seen since the end of the Second World War, Western leaders undertook one of the most radical shifts of foreign policy since the end of the Cold War regarding Russia.

It is sometimes argued that individuals may or may not play a determining role in policy shifting, but it is the author's perspective that, at the case at hand, they certainly were relevant. Even in front of a lack of what Kenneth Waltz would call "great man", ones of the likes of Peter the Great, Napoleon Bonaparte, Otto von Bismarck, Winston Churchill or others, some European and American leaders certainly came forward to defend what could have been the last vestiges of the Rules-Based International Order (RBIO)¹³². Although these leaders came from different political backgrounds and ideologies, most had one thing in common: they had their trust betrayed by empty assurances by Russian President Vladimir Putin and his ministers¹³³. Arguably, one could consider this added emotional component on the shift, adding to the logical turn of behaviour moved by purely political and geopolitical concerns. After all, some recent studies rooted in social psychology show that emotions generated by leaders' perceptions have "distinct effects on cognition, perception, and memory"¹³⁴. It is also important to consider the political opportunity available to decision-makers regarding influencing foreign policy. Heads of state, such as Emmanuel Macron, and to some extent even Olatz Scholz and Mr. Stoltenberg, found greater decision-making power in times of crisis, in particular, as they found that their personalities could permeate foreign policy and also provide a considerable breath of fresh air to their international legacy. Furthermore, it is worth mentioning the decisive role of NATO's North Atlantic Council regarding the rule of consensus in both the Council and parallel summits such as the "Ramstein Format", consensus which is vital to make decisions at NATO's political and military levels.

Moreover, this gradual shift which resulted in a more realistic approach of foreign policy, by blurring the line between direct and indirect intervention, ended up consolidating the classic cornerstone of the Alliance's defensive nature, article 5 of the Washington Treaty, as we will see further on. While arguably the present situation aided in returning NATO to its roots (the classical hard-power based, great-power competition vis-a-vis a comparable adversary in Europe), at the end decisions taken in the birth of NATO's Political and Military Committees and in the Summits of Madrid (2022) and Vilnius (2023), were the necessary tangible commitments considering the protection of CUIs.

Expanding on this idea, NATO has undergone the most tangible transformation in protecting undersea infrastructure in the high seas since its inception in the past century, after

¹³² As seen in Dugard (2023) p.225, the RBIO is founded on a liberal international order, it is 'based on principles of democratic governance, the protection of individual rights, economic openness and the rule of law' and is characterised by equality, human rights, freedom, multilateralism, free movement of goods, and collective security.

¹³³ See the Putin-Biden meeting in Geneva, Switzerland on June 16th, 2021; Putin-Macron meeting on February 8th, 2022; Putin-Scholz meeting on February 15th, 2022, and Lavrov-Borrell on February 5th, 2021, all three at the Kremlin, Moscow.

¹³⁴ According to Dolan, in "Emotion and Strategic Learning in War" (2016).

the 2023 Vilnius Summit. On the one hand, NATO's role in protecting the CUIs is grounded in its founding principles, such as articles 2 and 3 of the North Atlantic Treaty, which call for the strengthening of institutions, economic collaboration between allies, and growing resilience to attack, both kinetic and hybrid¹³⁵. At the last NATO summit, all allies also reiterated that hybrid operations against the alliance could meet the threshold of armed attack and trigger article 5, NATO's collective defence guarantee¹³⁶, in a similar manner than how the Cyberspace and the Space domains were considered as "Operational Domains" by NATO Allies in the 2016 (Warsaw) and the 2019 (London) Summits. To this end, it primed the launch and establishment of a new NATO Maritime Centre for the Security of Critical Undersea Infrastructure, located in MARCOM¹³⁷, (UK), with the compromise to set up a network "that brings together NATO, Allies, private sector, and other relevant actors to improve information sharing and exchange best practices"¹³⁸.

Yet, it is imperative to underline that the whole security infrastructure of NATO is based on its members adherence to the core principle of article 5: that "an armed attack against one or more [members]... shall be considered an attack against them all" and that members would assist the victim or victims of such an attack "forthwith". It is also worth remembering that the only time that article 5 has been invoked was after the attacks of September 11th, 2001, with the result that NATO led a security mission in Afghanistan for a decade and a half from 2003¹³⁹. Yet, Article 5 does not rule military force as its only way to resolve an issue, it may include such armed force, but it does not mandate it. Furthermore, even if the Alliance has been shifting emphasis back towards article 5 capabilities, it is a process that may take time¹⁴⁰, and is bound to be difficult to implement due to the nature of the new threats and the heterogeneity of the Western political landscape, as in the past three half decades most members have changed their force structures, reduced their defence budgets and lowered their readiness levels; and, most importantly, have been politically inconsistent.

Other Allied initiatives created in the context of this new technology-based approach to seabed security is the "Data Knowledge and Operational Effectiveness" project. Funded by Allied Command Transformation and launched by the Centre for Maritime Research and Experimentation, it aims to provide enhanced capabilities in the framework of seabed-to-space situational awareness exploiting all the information available. Further developments are being conducted in the framework of the Seabed Warfare Symposium at NATO Headquarters, which brings together more than 100 experts from across the Alliance and partner countries. Finally,

¹³⁵ See the Washington Treaty, NATO, 1949, arts. II–III.

¹³⁶ As cited in the 2023 Vilnius Communiqué: "We continue to face growing hybrid threats and challenges from state and non-state actors, who use hybrid activities, including through interference and the harmful use of technologies, to target our political institutions, our critical infrastructure, our societies, our democratic systems, our economies, and the security of our citizens. We remain united in defending our open and democratic societies against these malign activities. We reiterate that hybrid operations against Allies could reach the level of an armed attack and could lead the Council to invoke Article 5 of the Washington Treaty" as seen in NATO, 2023b, para. 64.

¹³⁷ NATO's Allied Maritime Command, located in Northwood, United Kingdom.

¹³⁸ See note 128, para. 65.

¹³⁹ As seen in The Economist, 2024.

¹⁴⁰ See both Deni, 2017 and NATO, 2019, p. 5.

2024 saw the consolidation of DIANA, the Defence Innovation Accelerator for the North Atlantic, an organisation established by all the Allies to find and accelerate dual-use innovation capacity across the Alliance. DIANA provides companies with the resources, networks, and guidance to develop deep technologies to solve critical defence and security challenges, from operating in denied environments to tackling threats to our collective resilience. In this regard, DIANA's focus on dual-use technology is especially relevant to the realm of CUIs, as technology used for sensing and information management in subsurface coastal zones can also be employed in the passive defence of the critical underwater infrastructure¹⁴¹.

NATO's Military Strategy

The cornerstone of NATO's hard approach to external, traditional threats is to maintain a high-readiness, highly technological armed force based on the notion of deterrence, both conventional and nuclear, as set in stone in the new military concept approved in June 2020, the Concept for Deterrence and Defence of the Euro-Atlantic Area (DDA). According to its authors, the DDA reflects a hard-fought conclusion that 21st century deterrence and defence aims cannot be achieved through only employing a crisis management approach, and that the Alliance required a new strategy to address the security threats and risks of this era in the immediate post-COVID, post-Global War on Terror period¹⁴².

The DDA's peacetime activities and operations in defence are guided by the principles that no country or non-state actor should achieve advantage over the Alliance in capability, readiness, or geography; that no Ally will be alone to address the threats and challenges of this era; and that every inch of allied territory, especially critical infrastructure, will be defended by all Allies¹⁴³. These fundamental principles are reflected in DDA military activities in peace, crisis, and conflict. On deterrence, DDA emphasises that preventing the transition to conflict starts in peacetime, not in crisis, and it requires timely and robust, purpose-driven military deterrence activity to contest attempts by an adversary to accrue military advantage over the Alliance¹⁴⁴. Deterring in peacetime also requires integrating multiple instruments of power to contest destabilisation and intimidation and prevent its widening, such as hybrid-nature threats, which will be developed further in this Chapter. On defence, DDA holds that NATO force employment in response to aggression requires the integration of mutually reinforcing, robust, multi-domain operations on an operational-strategic scale across the totality of the Alliance area¹⁴⁵.

NATO is modernising its forces in two ways: through national purchases of new equipment and through a new force structure. This new model aims to create a more powerful, agile, and sustainable military capable of undertaking any operation directed by the North Atlantic Council, anywhere in the world. The goal is to have at least 100 brigades, 1,400 fighter

¹⁴¹ See NATO, n.d.-a, 2023a.

¹⁴² See Covington, 2023.

¹⁴³ Ibidem, p. 4.

¹⁴⁴ Ibidem, p. 7.

¹⁴⁵ Ibidem, p. 9.

jets, and 250 ships and submarines¹⁴⁶ readily available, a significant amount of which are to be headquartered in the Baltic Area of Responsibility (B-AOR). This will ensure a faster response time and more adequate forces for new collective defence plans. This new force structure and planning aligns with the DDA strategy and a new alert system for NATO forces being set up by Allied Command. Additionally, robust logistics and regional capabilities are crucial elements of the DDA strategy, as seen in Ukraine.

Also, Russia's recent aggression against Ukraine exemplifies the DDA strategy in action. In 2022, Russia attempted to overpower Ukraine militarily while simultaneously trying to weaken NATO's political unity through military intimidation and infiltration tactics. This included troop build-ups around Ukraine, aerial and maritime deployments within NATO's area of responsibility, large-scale naval manoeuvres, and strategic nuclear exercises. However, these efforts failed to achieve their intended effect. NATO responded with swift and decisive measures to strengthen its deterrence posture across the AOR, demonstrating its unwavering political and military unity, and put an added emphasis on the physical defence of key underwater infrastructures, such as submarine cables¹⁴⁷. The DDA's reorganisation of peacetime vigilance activities within the AOR and the adoption of a single strategic defence plan for the entire region were instrumental in coordinating NATO's military response to Russia's military actions and attack on Ukraine and assuring the Allies in the line of contact.

II. NATO's Military Capabilities in the Baltic Sea

Due to the nature of submarine cables and other pieces of critical undersea structures, there is a traditional mindset that a potent navy is needed in order to ensure the physical security of littoral installations and their underwater ramifications. In this sense, NATO fields in the Baltic Sea a potent, multinational squadron made up with all the countries present in the AO and sees constant deployment of rotational groups such as the Standing NATO Maritime Groups (SNMG1 & SNMG2) and the Standing NATO Mine Countermeasures Groups (SNMCMG1 & SNMCMG2). These task forces are useful in their own accord in many areas: they provide a reliable platform for training and information sharing purposes, they are a source of trust-building between allies and, more importantly, act as a credible deterrent force against a potential foreign aggression¹⁴⁸.

NATO's fleet composition is considerably superior to the other naval formations that can be found in the Baltic Sea, namely Russia's Baltic Fleet (Дважды Краснознамённый Балтийский флот), whose numbers have dwindled even further with the transition of amphibious ships of the Ropucha-class to the Black Sea Fleet months before the 2022 Invasion of Ukraine took place¹⁴⁹. These ships were transferred when naval transit of military equipment which was not headquartered in the Black Sea was still permitted under the peacetime application of the Montreux Convention. Of these 6 amphibious units, 4 of them have been damaged and/or sunk by Ukrainian efforts. This is especially relevant considering that

¹⁴⁶ See Lorenz, 2023.

¹⁴⁷ See Arteaga & Simón, 2021.

¹⁴⁸ See Bekkevold & Till, 2016, p. 121.

¹⁴⁹ See IISS, 2024, p. 167.

amphibious ships pose a direct threat to submarine cables in the sense that these units are potential avenues of aggression if land sites supporting the infrastructure are targeted¹⁵⁰, and moreover, are excellent logistical platforms to lend aid to smaller, more specialised units.

Moreover, NATO's standing anti-submarine forces are the most specialised units that the Alliance can employ in theatre in order to deter any submarine action carried out by a state actor. Surface forces of frigates, destroyers and smaller littoral craft are supplemented by an experienced submarine force that fields some of the best conventional submarines in the silent service¹⁵¹. Moreover, due to the nature of CUIs, employing a reasonably large mine-countering force complemented by the increasing addition of Uncrewed Underwater Vehicles (UUVs) and other kind of seagoing drones is a priority that NATO has identified and prioritised in the latest revision of the Alliance warfighting planification¹⁵².

	Maritime Presence in the Baltic Sea in 2023						
	DDG	FF/FFG	FFL	PC	MCM	Aux	SSK
Germany	3	8	5		12	26	6
Denmark	3	2		12	6	12	
Sweden			7	13	9		5
Finland			8		20	6	
Estonia				6	4		
Latvia				5	4	1	
Lithuania				4	3	1	
Poland		2	5		21	26	1
NATO total	6	12	25	40	69	72	12
Russian Fed	1	7		35	12		1

Figure 6 - NATO and Russian Maritime presence in the Baltic Sea. Source: (IISS, 2024). Acronyms established following the ones from <https://www.udxf.nl/NATO-general-warship-classifications.pdf>

Being a naval domain, air power is the other relevant dimension of warfighting in the AO. An analysis of fielded allied warplanes in the Baltic Sea regarding the protection of submarine cables may be seen in two ways, the physical protection of the Allies' airspace and therefore the protection of its territorial integrity and all infrastructure contained in it, and the protection of the Exclusive Economic Zone conducted by maritime patrol aircraft and similar.

¹⁵⁰ Analysis conducted in simulations using Command Modern Operations, by Warfare Sims (2019).

¹⁵¹ See IISS, 2024 and Sutton & Davis, 2017.

¹⁵² See Defense Mirror, 2023, Monaghan et al., 2023 and NATO, 2023c.

On the one hand, allied combat jets are considerably superior in quantity to its Russian counterparts in a proportion of nearly 5 to 1¹⁵³, without considerations regarding availability rates, overseas deployments, or rotational/maintenance episodes. Moreover, countries located in the hypothetical “line of contact” enjoy yearly rotations of air power coming from other allies, such as Spain, Italy, or the United States of America, that protect the airspace of fellow allies Estonia, Latvia, Lithuania, and Poland in the Baltic Air Policing mission¹⁵⁴.

On the other hand, maritime patrol aircraft (MPAs) are a specialised batch of aircraft whose mission is to monitor the surface and underwater picture by employing a wide array of sensors, radars, and disposable sonobuoys. Of the Baltic NATO allies, only two countries field MPAs, those being Poland (9 airframes of the An-28 type) and Germany (with legacy P-3C Orion). It has been widely reported that NATO has dwindled its maritime alert force, notably after the end of the Cold War and the switch to a so-called low-intensity warfare period (2001-2014), when tracking Soviet and later Russian submarines was not seen as a policy priority¹⁵⁵. Both countries, especially Germany, are stepping up capabilities in that regard by securing the acquisition of the modern P-8A Poseidon, already in use by the US Navy, the Royal Navy and prospective use by Norway and other countries in Europe and Asia¹⁵⁶. As well, both fighter and MPA forces are being supplemented with the rotational deployment of NATO’s 14-strong AWACS force, the Alliance’s “Eyes in the Sky”, composed of American-build E-3A Sentry Air Warning and Control Aircraft. These aircraft, with modern radar and communication monitoring stations, are vital to track and intercept potential air and naval threats and act as mobile battle command posts. The fleet is currently involved in assurance measures that followed Russia’s illegal and illegitimate annexation of Crimea in 2014, as well as in tailored assurance measures to Turkey. In addition, following Russia’s invasion of Ukraine in February 2022, the fleet is currently monitoring NATO airspace to assure and protect Allies.

	Air Presence in the Baltic Sea in 2023 (In parentheses - NATO Enhanced Forward Presence)						
	Fighter	Multirole	Attack	MPAs	Transport/ Tanker	ISR/ AWACS	Helicopter
Germany	78	60	88	4	61	6	79
Denmark	44	10			8		31
Sweden		99			9	5	53
Finland		62			11	1	20
Estonia	(8)				2		
Latvia					6		2

¹⁵³ As seen in IISS, 2024.

¹⁵⁴ Consult NATO, n.d.b.

¹⁵⁵ See Maskell, 2001.

¹⁵⁶ See both the Federal Ministry of Defence, 2022 and IISS, 2017, p. 26.

Lithuania	(4)				6		6
Poland	14 (8)	58	11	9	51	22	65
NATO total	136 (20)	289	99	13			
Russian Fed	60	20	20		28	14	14

Figure 7 - NATO and Russian air presence in the Baltic Sea. Source: Google Maps, 2024 (IISS, 2024; Warfare Sims, 2019). Important Note: Numbers displayed may not correspond to reality due to availability and operational requirements on both sides. Russian numbers are the result of the nominal strength of an Aviation Regiment per number of regiments in theatre and should be taken approximately.

Another traditional point of litigation is Allied defence expenditures figures. It is easily arguable that the reality of a war being fought in Europe has given a new sense of urgency to the Alliance’s defence investment efforts, and as Secretary General Jens Stoltenberg put in the Hague in June 2023: “Russia’s war in Ukraine demonstrates that we cannot take peace for granted. And that we must invest more in our security.” Such initiative is not novel, since from the Wales Summit in 2014, Allied Heads of State and Government agreed to the Defence Investment Pledge, which called for all Allies to meet the NATO-agreed guideline of spending 2% of their Gross Domestic Product on defence by 2024. Last year in 2023, at the Vilnius Summit, there was another commitment made to invest at least 2% of their GDP annually on defence. They also committed to investing at least 20% of defence budgets on major equipment, including related research and development, recognising that this should be met in conjunction with a minimum of 2% of GDP on annual defence expenditure¹⁵⁷. They also affirmed that, in many cases, Allies will need to spend more than 2% of GDP on defence if they are to remedy existing shortfalls and meet the demands of a more contested security order.

In tangible terms, this rise in expenditure signifies that in 2023, Poland (3.92%), Estonia (2.89%), Lithuania (2.75%), Finland (2.46%), Latvia (2.37%) and Denmark (2.00%) were above the mandated threshold, while Germany (1.66%) still lagged behind. To provide some perspective outside of the AO, Spain has gone from less than 1.00% to 1.26%, and the United States remains around 3.49%. Also, with 2023 data, new NATO-ally Sweden, which by then was still awaiting Turkey’s and Hungary’s sign-off to join the Alliance, earmarked SEK126bn (USD11.83bn) for its 2024 military budget, a 28% increase¹⁵⁸. Moreover, an increasing majority of Allied citizens (77%) think that defence spending should either be maintained at current levels or increased. Only 12% think less should be spent on defence. This data is even further accentuated in our case study, with citizens located in Baltic riparian countries (78.5% for maintained or increased levels with 10.38% that believe that less should be spent)¹⁵⁹. Such raw data ought to demonstrate the unwavering resolve of the countries in the AO to strengthen the deterrence and defence of the Alliance, especially in the wake of Russia’s unprovoked aggression in Ukraine.

Russian Military Strategy in the Baltic: A2/AD

¹⁵⁷ See both NATO, 2022 and 2023a.

¹⁵⁸ See Dewey, 2023 and NATO, 2023a.

¹⁵⁹ See NATO, 2023a.

As seen, the Russian military presence is substantially weaker than the whole pool of resources that regional NATO powers have at their disposal. In order to counter this vulnerability, and to be more cost-effective with their limited pool of resources, the Soviet and later Russian Navies envisioned the concept of the so-called Naval Bastion. According to maritime strategy, a bastion is a “heavily defended area of water in which friendly naval forces can operate safely”¹⁶⁰. The Bastion concept still focuses on defending sea-based nuclear assets, although due to the lack of such assets in the Baltic Sea, it is safe to assume that the Russian strategy resolves between (1) securing the only reliable warm water harbours left for the Russian navy and (2) be able to interdict NATO lanes of communication in the Baltic, specially the Suwałki Gap (or corridor) between Poland and Lithuania, whose hypothetical capture of the would likely jeopardise NATO's attempts to defend the Baltic states in case of armed conflict¹⁶¹.

Control is ensured through sea denial and interdiction capabilities at sea and in the air, and a clear distinction between “inner defence”, which relates to ambition of control, and “outer defence”, for the aspiration of denial, is made. Both defence stratagems are conducted primarily by the Russian Baltic fleet, due to the lack of long-range capabilities in deference to its Northern and Black Sea comrades¹⁶². They are aided in this venture by rotational deployments of long-range air assets coming from the Kola Peninsula, including constant deployments of dual-capable aircraft such as strategic bombers TU-22M3 Backfire and TU-160 Blackjack, deployed in long-range patrols in the vicinities of NATO countries, supported by TU-142 Bear-F long range MPAs and escorted by a plethora of MIG-31 and SU-27 interceptors¹⁶³. Furthermore, long-ranged, land-based assets have also proliferated in the Russian Baltic regions in the form of four new, highly capable systems: The S300 and S400 surface-to-air systems for long-range surface to air protection; the 3K60 BAL (SC-6 Sennight) and K-300P Bastion-P for medium-range anti-surface protection; and the dual-capable Iskander-M system, which includes a short-range ballistic missile and a short-range cruise missile (which was in more relevant times in material infraction of the INF Treaty, according to US officials¹⁶⁴). These new systems add offensive value to the bastion concept, augmenting its reach over NATO and neutral countries. Technology has evolved rapidly in this last decades, and it has allowed Russia to project power “from the shore” to a level which was only possible before by employing naval forces, it has gained range and has evolved from a “defensive bastion” to an “anti-access, area-denial warfare” (A2/AD) strategy¹⁶⁵.

Regarding CUIs, such a strategy may hinder NATO's ability to safeguard the infrastructure considering that the main assets located in theatre fall inside the defensive umbrella of Russian long-range assets. NATO planners should, in this regard, take into consideration lessons learned from the opening tunes of the Russian missile campaign of 2022

¹⁶⁰ See J. Tangredi, 2013.

¹⁶¹ See Elak and Śliwa, 2016.

¹⁶² See IISS, 2024 and Nicoll & Delaney, 2015.

¹⁶³ See IISS, 2018 and Villanueva, 2017.

¹⁶⁴ See Durkalec, 2019 and Warfare Sims, 2019.

¹⁶⁵ Anti-access and area denial “are modern terms referring to warfighting strategies focused on preventing an opponent from operating forces near, into, or within a contested region”.

and 2023 regarding asset dispersion, passive and active defence, operating under a heavily jammed environment and capacity and political will to retaliate, as well as the vigilant position needed to be adopted by NATO planners to build better resilience and deterrence. Contemporary actions carried out by the Ukrainian Armed Forces and the Main Directorate of Intelligence (AFU & HUR) over Crimea and Belgorod *oblast* have demonstrated that a willing actor, employing a combination of both cheap, out-of-the-shelf equipment and high-tech weaponry, can penetrate the once-famed Russian Integrated Air Defence System (IADS) and inflict considerable damage on critical equipment.

Russian Hybrid Warfare Strategy

It has been clear for many years that Russia's approach to warfare has evolved beyond conventional military tactics, especially in the immediate period post Crimea. The primal version of the concept arose in Russian circles after the first consequences of the Arab revolutions in Northern Africa and the Middle East were developing, and the Euromaidan protests in Ukraine were in full swing. The Moscow regime identified such actions as “deeply concerning and threatening”¹⁶⁶ in a context where Russia was seeking *détente* with the West under the Medvedev administration. According to Valeri Gerasimov, Chief of Staff of the Russian Armed Forces, and creator of the so-called *Gerasimov Doctrine*, non-military methods could be superior to direct military action in reaching political and strategic goals, and this needed to be reflected in a new and diversified order of battle, the new generation warfare (NGW - Война нового поколения) concept. Thus, the modern conceptualisation of Russian hybrid warfare was born.

This analysis of Russian capabilities in the Baltic is born from two theoretical considerations: First is the framework of Balance of Power: It predicts a monotonically increasing effect of power on the likelihood of using force. Several authors use this concept, so there will be widespread use of the ideas by J. Mearsheimer and Inis L. Claude¹⁶⁷. Furthermore, we may also use the Offensive Realism sub-theory, which in this case was coined by Mearsheimer in a following development of his own work¹⁶⁸, which assesses that the Great Powers, in an anarchical state of international relations and with enough military capabilities, cannot be sure of others intentions and have survival as a primary goal; being rational actors as they are¹⁶⁹. Secondly, we ought to consider the Soft Balancing sub-theory, by author R. Pape¹⁷⁰. It determines that weaker states decide that the omnipresence and influence of a stronger actor are unacceptable. Still, the vast gap in military capabilities makes it impossible to confront it conventionally, thus resulting in strategies to frustrate the dominant power.

The vehicle of employment of this strategy commonly known as hybrid warfare or “threats” is compromised by a mix of military and non-military, conventional and irregular

¹⁶⁶ Moscow Conference on International Security (MCIS), 23-24 May 2014 loosely based on the model of the Munich Security Conference (MSC).

¹⁶⁷ See Claude, 1962 and Mearsheimer, 1990.

¹⁶⁸ Also see Mearsheimer, 2001.

¹⁶⁹ See Hirose, 2014 and Organski, 1968.

¹⁷⁰ See Pape, 2005.

components, that can include all kinds of instruments such as cyber and information operations¹⁷¹. These multimodal activities can be conducted by separate units, or even by the same unit, but are generally operationally and tactically directed and coordinated within the main battlespace to achieve synergistic effects in the physical and psychological dimensions of conflict. In contemporary times, the first employment of hybrid methods has been evident from Russia's activities in Crimea and the Donbas region of Ukraine, with its deployment of "little green men", namely professional soldiers wearing unmarked uniforms that make direct state attribution complex¹⁷².

None of the single components is new; nor the concept in itself, yet it is the combination and orchestration of different actions that achieves a surprise effect and creates ambiguity, making an adequate reaction extremely difficult, especially for multinational organisations, such as NATO¹⁷³. This approach aims to achieve strategic objectives below the threshold of war or at least prolong the period pre-conflict, weakening and destabilising a target from within. According to the Latvian specialist Berzins, the "Russian view of modern warfare is based on the idea that the main battlespace is the mind and, as a result, new-generation wars are to be dominated by information and psychological warfare, [...] morally and psychologically depressing the enemy's armed forces personnel and civil population. The main objective is to reduce the necessity for deploying hard military power to the minimum necessary"¹⁷⁴.

Undoubtedly, such actions are extremely threatening for the Critical Undersea Infrastructure, such as pipelines and submarine cables, which are inherently vulnerable to hybrid warfare tactics due to their location and overall ownership system. These threats may be from different natures, aligning with the nature of hybrid warfare:

- Military or kinetic threats: Submarines, small submersibles, and even covert divers can be used to disrupt or disable undersea structures. The secretive nature of undersea warfare and the geographic considerations of the Baltic Sea¹⁷⁵ makes it excel in this kind of covert operations, popular especially in the height of the Cold War in the Northern Sea and the Barents' Sea approaches¹⁷⁶. While a full-scale attack might trigger a strong response, smaller, targeted actions could create uncertainty and panic. The Russian Navy in the Baltic and Northern seas field some types of specialised hardware to this end, such as submarines K-329 Belgorod, the former 70m long *Losharik* (AS-31), whose status is

¹⁷¹ The hybrid warfare concept recognises the existing and documented notion of hybrid threats as identified by NATO (NATO's Bi-Strategic Command Capstone Concept, 5000 FXX/0100/TT-0651/SER: NU0040, dated August 25, 2010; BI-SC Input for a new Capstone Concept for The Military Contribution to Countering Hybrid Threats (MCCHT)). NATO's Bi-Strategic Command Capstone Concept describes these hybrid threats as "those posed by adversaries, with the ability to simultaneously employ conventional and non-conventional means adaptively in pursuit of their objectives": (Hybrid Threats Description 1500/PPCAM/FCR/10-270038 AND 5000 FXX/0100/TT-0651/SER: NU0040 dated August 25, 2010; BI-SC Input for a new Capstone Concept For the Military Contribution to Countering Hybrid Threats (para 7), as seen in S. D. Bachmann & Mosquera (2015).

¹⁷² See Herbst, J., 2016.

¹⁷³ See Murphy, 2016 and Reisinger & Golts, 2014.

¹⁷⁴ See Berzins, 2014, p. 5.

¹⁷⁵ See both Kaplan, 2013 and Marshall, 2021.

¹⁷⁶ See Sontag & Drew, 2000.

unclear after a severe fire killed the whole crew in 2019, and 55m long PALTUS-class boats (AS-35 and AS-21)¹⁷⁷. The aim of these submarines is to conduct “autonomous nuclear deep-water stations” or AGS, which mainly means laying sensor networks on the sea floor, and possibly place wiretaps on submarine cables.

- Economic coercion: Undoubtedly, energy-carrying pipelines are a major source of revenue for Russia, with volumes of 27 billion cubic metres to the EU alone (2023 data, after Ukraine-linked sanctions). The Ukraine conflict has also become a reminder that energy security is an integral part of national and regional security; and that dependence on Russia can be a strategic liability; resulting in interdependence between the producer and the consumer that will not encourage stability if the producer can go longer without revenue than the consumer can go without gas¹⁷⁸. Yet, current low oil prices have emerged as a major challenge for Russia’s economy, while the crisis has given Europe an additional incentive to diversify its energy sources and distribution networks¹⁷⁹.
- Cyberattacks: As it has been sufficiently stated before, submarine cables carry more than a significant portion of global internet traffic. Cyberattacks on the Baltic’s communication infrastructure can cripple communication networks and financial systems, causing widespread economic damage by disrupting internet and communication networks, hindering businesses, government operations, and emergency services. Such were the conclusions of the *Tallinn Manual 2.0* of 2017, which was written at the invitation of the Tallinn-based NATO Cooperative Cyber Defence Centre of Excellence by an international group of approximately twenty experts following the 2007 series of cyberattacks which targeted websites of Estonian organisations¹⁸⁰.
- *Lawfare*: A notably extensive topic on its own, *Lawfare* constitutes the usage of law as a weapon with a goal of manipulating the law by changing legal paradigms which can be certainly used in the context of hybrid warfare¹⁸¹. The most notable example is the contemporary ambiguity in the legal usage and consequences of the terms war, conflict, military operation, international armed conflict, non-international armed conflict, or civil unrest. This ambiguous situation creates patent confusion as to the source or paradigm of applicable law and any eventual action to identify and assign legal responsibilities and demand accountability¹⁸².

The blurry lines defining hybrid conflicts make it difficult to categorise them as international armed conflicts, non-international ones, or simply civil unrest. This ambiguity creates uncertainty for law-abiding parties (the members of the so-called Rules-Based

¹⁷⁷ See Sutton & Davis, 2017 and U.S. Naval Forces Europe-Africa/U.S. 6th Fleet Public Affairs, 2020.

¹⁷⁸ See Rühle & Grubliauskas, 2015.

¹⁷⁹ See the interactive map in Georg Zachmann, Can Europe survive without Russian gas? Bruegel blog, March 21, 2014, as seen in <http://www.bruegel.org/nc/blog/detail/article/1283-can-europe-survive-without-russian-gas/>.

¹⁸⁰ See Jensen, 2018 and Schmitt, 2017.

¹⁸¹ Colonel Dunlap first coined this term in 2001. See C. Dunlap, ‘Law and Military Interventions: Preserving Humanitarian Values in 21st Conflicts’, Humanitarian Challenges in Military Intervention Conference, November 2001, and later expanded by the same author in 2007.

¹⁸² See A. B. M. Mosquera & Bachmann, 2016.

International Order), who are then forced to prove that International Law is being broken. This "fog of *Lawfare*" creates a legal grey area where a new tactic thrives exploiting loopholes and manipulating legal thresholds. *Lawfare*, in the context of hybrid warfare, flourishes in this ambiguity¹⁸³. State and non-state actors, unbound by International Law, can leverage it to their advantage. This creates a form of "asymmetric warfare by abusing laws" where those who play by the rules are disadvantaged. Within this legal terrain, the law-abiding states shall be constrained to the contours of a law-fearing realm, the adversaries will not¹⁸⁴. This is the reason why, in the author's point of view, law-abiding states need to reach major levels of asymmetry in law interpretation and compliance in legal interoperability so as to overrun the "legal" methods used by the adversary.

What the Baltic Sea enjoys as opposed to the Arctic Sea or even the South China Sea is a robust, recognised and enforced legal framework regarding territorial extension and resource exploitation. As it has been already discussed in Chapter 2, territorial boundaries in the area of operations are set according to UNCLOS, resulting in all the Baltic Sea divided in set economic exclusion zones historically respected by all parties, without any physical space to expand without interloping another EEZ. For example, in the case of the Arctic Sea, Russia's favourable geographical position and the precarious legal architecture applicable to the Arctic makes it an ideal playing field for such non-lethal, warfighting action. Arctic-applicable law is extremely complex and fragmented and has tributaries stemming from domestic, regional, and International Law, as well as hard and soft law¹⁸⁵. On the other hand, the particular circumstances of the South China Sea, where China approaches the use and abuse of law from an instrumentalization perspective as a result of what its authorities perceive as a Western failure to deliver the promises of a RBIO world.

Yet, that same Rules-Based International Order has not sat idle. According to Mosquera and Chalanouli¹⁸⁶ and following a joint exercise with the University of Exeter, NATO lawyers have defined three distinct criteria to apply the methodology of legal operations response focused on defence activities. A legal attack can be qualified as such only if the following can be identified: a) the existence of an intention is acknowledged to harm the allies and their organisations, their reputation or operations; b) the use of particular instruments allowing qualifying the attack as belonging to the legal field directly or indirectly; and c) finally, the measure of the impact of that attack on the allies and their organisations, reputation or operations¹⁸⁷. Furthermore, a new debate has emerged in western circles on whether hybrid warfare calls for updates in the law of armed conflict¹⁸⁸. Ultimately, it is the legal characterisation which determines whether a situation is considered to amount to armed conflict, and accordingly, whether peacetime law or law of war applies, or such is reflected in the conclusions of the 2023 Vilnius Summit, where Allies also restated and enhanced the Cyber

¹⁸³ See Reeves & Barnsby, 2013.

¹⁸⁴ See Kittrie, 2016.

¹⁸⁵ See S.-D. Bachmann & Mosquera, 2017.

¹⁸⁶ Supreme Headquarters Allied Powers Europe

¹⁸⁷ See A. M. Mosquera & Chalanouli, 2020, p. 7.

¹⁸⁸ See Mälksoo, 2018, pp. 3–4.

Defence Pledge and committed to more ambitious goals to strengthen national cyber defences as a matter of priority, including for critical infrastructures, to the point of including cyberattacks and other hybrid threats as potential Article 4 and/or 5 situations. Of course, to deter hybrid adversaries from operating against NATO below the threshold of an armed attack, one solution could be that the Allies remove the word “armed” from Article 5 of the North Atlantic Treaty, yet as some commentators put it clearly, this is not a viable proposal: Pursuant to the United Nations Charter (art. 51) and customary International Law, the use of force in self-defence is permissible only in response to an armed attack¹⁸⁹.

All in all, a chaotic legal environment where the rules of the game have been blown out by those using hybrid warfare requires law abiding states and others to act by using counter tactics containing a comprehensive legal approach and broad legal interoperability. Solutions to counter such actions by malignant entities, both state and nonstate actors, in the defence of the Baltic Sea’s undersea infrastructure should settle on a multifaceted approach set in constant evolution: the traditional paradigm of interstate warfare, characterised by uniformed soldiers engaging in physical combat, is giving way to a more complex and fragmented landscape. For example, nowadays within NATO’s structure there are five areas of operations: Maritime, Land, Air, and the recent additions of Space and Cyberspace¹⁹⁰. Even the mind, discourse, or the so-called “tribunal of the public opinion” may end-up settling as a new, sixth battlespace dimension in the following revisions of NATO’s command structure.

Conclusion

In sum, this chapter dives into NATO's capacity to safeguard critical undersea infrastructure (CUI) in the Baltic Sea from potential Russian aggression. The urgency of CUI protection has come to the forefront in recent years, particularly following Russia's annexation of Crimea in 2014 and its full-scale invasion of Ukraine in 2022. Consequently, NATO has undergone a strategic shift, prioritising defence against hybrid warfare tactics employed by Russia over traditional counterterrorism and low-intensity warfare threats. On the political front, NATO has solidified Article 5, the collective defence clause enshrined in the North Atlantic Treaty, as the cornerstone of its response. The Alliance has established new entities, such as the Maritime Centre for the Security of Critical Undersea Infrastructure, to foster information sharing and best practices in CUI defence.

Militarily, NATO boasts a considerably superior force in the Baltic Sea compared to Russia. Its naval fleet is larger and more modern, encompassing advanced anti-submarine warfare units and a growing arsenal of UUVs. Airpower constitutes another domain where NATO enjoys a significant edge, wielding a vast fleet of combat jets and maritime patrol aircraft. However, NATO's defensive posture is challenged by Russia's A2/AD (anti-access/area denial) strategy and its penchant for hybrid warfare tactics. A2/AD tactics rely on land-based missile systems and long-range aircraft to deter NATO forces from entering the

¹⁸⁹ See both Sari, 2017 and Simma, 2012.

¹⁹⁰ See Reynolds, 2022.

Baltic Sea. Conversely, hybrid warfare tactics involve a blend of military and non-military instruments to achieve strategic objectives below the threshold of conventional war.

In essence, while NATO possesses the military capability to defend CUI in the Baltic Sea from Russian aggression, Russia's A2/AD strategy and its utilisation of hybrid warfare tactics pose a substantial threat. To counter these challenges, NATO is actively bolstering its defences by solidifying its political resolve and spearheading the development of novel military capabilities. Beyond the military realm, the chapter delves into the economic ramifications of the issue. It emphasises the importance of maintaining robust defence spending amongst NATO allies, especially those bordering the Baltic Sea. The chapter highlights a positive trend in this regard, with several Baltic nations exceeding the recommended defence expenditure of 2% of GDP. This financial commitment reflects the unwavering resolve of these countries to strengthen the Alliance's deterrence and defensive capabilities.

Final Conclusions

This research project has tackled the political and judicial status of submarine cables in a complex geographical context, the Baltic Sea, and how NATO has readied its political and military tools to defend this critical undersea infrastructure. We have operated under the assumption of a diverse in nature, yet unified Alliance ready to employ the whole array of tools provided by the Washington Treaty of 1949 in a steady, decisive, and unitary consensus, which translates into a certainly magnificent military powerhouse ready to defend its one billion citizens and the infrastructure sustaining its way of life.

Thus, the writing has been divided into three sections. The introductory section has mainly focused on the decisive character of submarine cables, an infrastructure array that carries the lifeblood of our interconnected world, transmitting nearly all global communication data. Yet today's undersea cables are far more sophisticated than their 19th-century telegraph ancestors; built with cutting-edge fibre optic technology, they have incredible bandwidth and transmit data at lightning speed, which makes them indispensable for any activity that involves data transmissions (not only those of domestic or labour implications, but also health-related, economic and, certainly, military applications). These cables share the seabed with power lines that carry electricity across vast distances, connecting offshore wind farms and other renewable energy sources, as well as critical nodes for fossil energy transmission. While due to the geographical narrowness of the assessed theatre of operations all cables in the Baltic Sea lie within the exclusive economic zones (EEZs) of their respective countries, Domestic law and International Law dictate their ownership, protection, and the flow of data that travels through them.

FIRST: Regarding ownership, this research identifies a multi-actor environment as the basis of operation, as private companies, international consortiums, and even governments can own the physical infrastructure, and they do not necessarily have to be located on-site. Yet, in a general sense, the most employed method of commercial model for the physical ownership of the cables are Submarine Cable Consortiums, which is a collection of companies that join together to fund the daily operations of new cables. Also, after a comprehensive historical study we have concluded that undersea cables are certainly vulnerable to damage from human activities, especially fishing and shipping in shallow waters (over 70% of cable faults), which validates our study concerning human-related wrongdoing in the Baltic. On the other side of the spectrum, natural disasters like earthquakes and landslides are less frequent causes (under 10%). Of course, these disruptions can have major economic, social, and strategic impacts, so to minimise downtime, spare capacity on other cables and rapid repairs by specialised crews are crucial.

SECOND: Chapter one also provided an initial justification on whether an analysis of the judicial aspects of the legal governance of submarine cables was relevant in a multidisciplinary environment, tackling three specialised regimes which coexist within the premises of the Baltic Sea that are especially relevant in the matter at hand, all of them dealing with causes, consequences or realities of the layout of undersea cables: matters about the delimitation of maritime borders and the continental shelf, matters on the environment,

especially considering pollution; and matters related to fisheries. First, the unique geography of the Baltic Sea, with its compact size and overlapping exclusive economic zones (EEZs), has presented challenges in maritime border delineation. Historic claims and resource control have also been points of contention. Thankfully, most seabed boundaries have been peacefully resolved through bilateral agreements and international court decisions, often considering factors beyond just equidistance, so the employment of International Law is still a viable venture in this fragmented international landscape. Second, the Geneva Continental Shelf Convention establishes the legal framework for resource exploration and exploitation, while environmental protection is governed by the Helsinki Convention. This convention, established by Baltic Sea states themselves, sets standards for pollution prevention and mitigation across various sources, and while enforcement primarily falls on individual countries, the convention also allows for dispute resolution through negotiation, arbitration, or international courts. Finally, fisheries management is guided by agreements like the Gdansk Agreement. This agreement not only allocates fishing quotas but empowers the European Union to negotiate fishing rights with the Russian Federation and establish protected zones around critical infrastructure like undersea cables, thus it could be argued that it is a viable way for the EU (and well according to its status as a normative powerhouse) to project power while, at the same time, complying with International Law rules regarding environmental law and the Law of the Sea. This collaborative approach ensures the sustainable use of Baltic Sea resources while safeguarding vital communication networks between arguably antagonist powers.

THIRD: The second chapter deals with the ever-important matters of International Law as a viable tool for employment in the dealings related to the Baltic Sea, specially addressed at dealing with differences between NATO countries by themselves, or as part of a broader campaign in a hypothetical, legal struggle against the Russian Federation. Broadly, the chapter tackled two major areas of the legal governance of submarine cables: the legal ownership of cables and adjacent infrastructure, and an analysis of the most relevant treaties and articles in International Law tackling these issues. The analysis meticulously dissects the LOSC, examining international jurisdiction, treaty interpretation, arbitration cases, and real-world application. Despite the exhaustive approach, a key point emerges: the LOSC doesn't appear to grant individual rights to companies laying, owning, or operating these underwater cables and pipelines. Neither the relevant provisions themselves nor the historical background materials surrounding the LOSC's development suggest an intention to grant such rights. In simpler terms, the LOSC prioritises the rights and responsibilities of countries, not individual companies, or their employees/shareholders. Any potential individual rights would likely hinge on a demonstrable connection to a company's home nation, which acts as the source of those rights. A solution would be to consider them as an object of global public interest, a global common/good, yet this perspective or how it ought to be formulated falls beyond the scope of this work.

FOURTH: The chapter also tackles the issue of treaty governance for submarine cables. It reveals that the LOSC's rules aren't entirely clear-cut when it comes to specific cable and pipeline activities, and that there is an absence of a central regulative authority responsible for submarine cables. This ambiguity necessitates a close examination of each LOSC provision to

determine its intended scope. However, the analysis identifies a positive trend towards clearer cable governance. This trend builds upon previous treaties like the 1884 Cable Convention, culminating in the progressive codification of key points within the LOSC itself. Notably, real-world application of the LOSC in cable-related legal cases remains somewhat limited. Disputes arising from the Law of the Sea are uncommon, with a current preference for arbitration and mediation over judicial settlements (as highlighted in Article 33.1 of the UN Charter).

FIFTH: Furthermore, the research identifies two crucial areas where the 1884 Cable Convention offers stronger protections for undersea cables compared to the LOSC. The chapter argues that incorporating these Cable Convention provisions, or similar language, into the LOSC or other relevant maritime treaties would significantly bolster the legal framework safeguarding submarine cables. The first identified gap concerns interference with cable repair operations. While the LOSC offers some protection, it lacks specifics regarding the distance other vessels must maintain from a cable ship undergoing repairs. This ambiguity creates potential difficulties and safety hazards for repair crews. The second area for improvement relates to evidence collection. The LOSC remains silent on how to gather proof of violations occurring on the high seas, where witnesses are often scarce. The Cable Convention, however, empowers warships under certain circumstances to collect evidence from vessels suspected of violating its provisions. This ability to gather evidence is crucial for enforcing the rules and holding violators accountable. Finally, by incorporating these Cable Convention provisions or similar measures into the LOSC, the author argues, these legal loopholes would be closed. This would significantly strengthen the international legal framework for protecting submarine cables, which are vital for global communication and internet connectivity. Yet, considering the final highlight of the chapter about a recent example of suspected attacks on cable infrastructure in the Red Sea, underlining the ever-growing need for robust legal mechanisms to deter and address threats to these critical underwater assets, yet it would be more complex to put blame on a robust naval, nuclear-armed actor such as Russia than a non-state, irregular group like the Yemen's Houthis.

SIXTH: The third and last chapter examines NATO's kinetic capabilities to protect critical undersea infrastructure (CUI) in the Baltic Sea from potential Russian attacks. The need for robust CUI defence has become especially critical since Russia's annexation of Crimea in 2014 and the full-scale invasion of Ukraine in 2022. As a result, NATO has shifted its focus from counterterrorism and low-level conflicts to countering Russia's hybrid warfare tactics. Politically, in the last NATO summits, NATO has reaffirmed Article 5, the collective defence clause, as the foundation of its response. New organisations have been created in this regard, like the Maritime Centre for Critical Undersea Infrastructure ordered to promote information sharing and best practices for CUI defence.

SEVENTH: Militarily, NATO has a clear advantage in the Baltic Sea over other state and non-state actors. Its modern and larger naval fleet includes advanced anti-submarine warfare units and a growing arsenal of UUVs. Similarly, NATO dominates the air with a vast fleet of fighter jets and maritime patrol aircraft. However, Russia's A2/AD (anti-access/area denial) strategy and its use of hybrid warfare tactics have the potential to challenge NATO's

defences. A2/AD tactics use land-based missiles and long-range aircraft to keep NATO forces at distance in the Baltic Sea, creating bubbles of opportunity centred in the Kaliningrad and Leningrad *oblasts*. In contrast, Russian proved employment of hybrid warfare blends military and non-military tools to achieve strategic goals without triggering a full-scale war, and the study has proved that similar.

EIGHTH: Finally, while NATO has the military strength to defend CUI from Russian aggression, Russia's A2/AD strategy and hybrid warfare tactics pose a significant threat. To address these challenges, NATO is actively strengthening its defences by solidifying its political commitment and developing new military capabilities. Also, the chapter goes beyond military aspects to explore the economic consequences, as it emphasises the importance of maintaining strong defence spending, especially for Baltic Sea nations bordering Russia. The chapter highlights a positive trend within NATO, with several Baltic nations exceeding the recommended defence spending of 2% of GDP, thus demonstrating that this financial commitment represents the unwavering determination of these countries to bolster NATO's deterrence and defence capabilities in the wake of an assertive Russian Federation.

In a broader sense, the study reveals certainties about the co-existence of a robust legal system in the context of a rather quiet front. The nature of the actors involved in the region, as described in chapter one, which are bound by considerable periods of shared history and values, and their relations with the, on paper, antagonistic entity have been the perfect definition of a watchful peace. Neutrality has always been respected, even when the objective threat of a military expansion of the Soviet Union on Sweden and Finland was higher than now in militaristic terms, and the importance of submarine cables was always considered by all actors and their preservation and extension regarded as the natural evolution of things. In regard to territorial integrity, International Law was and continues to be a cohesive and robust framework for difference settling, and the lack of open cases in contrast with the Arctic and the black Seas, or in a broader scale the south China Sea, confirms the good health of the Baltic framework.

Yet, and as the Russian war of aggression against Ukraine has certainly demonstrated, all it takes in this contemporary system of the rule of law is one determined actor to blow it up completely. In this regard, two major elements arise that could prevent, or at least mitigate, the chances of that happening in the Baltic Sea. First, NATO as a military deterrent power and the transition from neutrality to parity by the only two remaining Nordic countries outside of the alliance, Sweden, and Finland, has now ensured that the whole array of submarine cables fall inside the jurisdiction of NATO member states, and new certainties about the reach of article 5 of the Washington treaty makes them eligible of cause for article 5 application, or at least article 4 consultations¹⁹¹. The second point rests on the duality, both in tangible and metaphorical terms, of submarine cables. It is in the same best interest of the Russian Federation and NATO to safeguard Critical Undersea Infrastructure arrays, its legal framework

¹⁹¹ Article 4 of the Washington Treaty is an especially useful article in the current age as it prompts consultations between allies in an event of major tensions, without requiring Article 5 consultations. It has been invoked more than 7 times and normally in threatening situations in the “Grey Zone”, which may lead to regional conflicts in the short or mid-term.

and diplomatic protection, as both entities are equally and unequivocally dependent on it. By all means, limited tensions and isolated incidents over and around submarine cables have, are and will occur, but what is undeniable is that miscalculations on the use of hybrid stratagems, such as *lawfare* schemes or covert military operations, have a higher chance of failing, and thus backfiring, than other initiatives that the Russian Federation may pursue around the globe against other, non-NATO actors. That is because NATO is more prepared than a half a decade ago to combat a phenomenon identified nearly 15 years ago not by its novelty as a new category of warfare, but the immediacy and increased possibility of facing the threat head on. There is a new sense of urgency born from 2022, the realisation that the ideal, yet fragile system born from the belief that the international rules-based system was foolproof, that NATO has had to back it up with a credible political and military deterrent posture. It would seem that, in the context of the submarine cable governance regimes in the Baltic Sea, peace through legal, political and military strength has become more relevant than ever.

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