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**To what extent is the use of underwater surveillance
equipment for security and military purposes in conformity
with the Law of the Sea?**

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Table of Contents

- 1 Introduction 1
 - 1.1 Context and relevance of the topic 1
 - 1.2 Topic, objective and scope of the thesis..... 4
 - 1.3 Method and sources..... 7
 - 1.4 Structure 8
- 2 Underwater surveillance equipment as marine scientific research 9
 - 2.1 Introduction to marine scientific research..... 9
 - 2.2 Underwater surveillance equipment as marine scientific research 10
 - 2.2.1 Definition of marine scientific research 10
 - 2.2.2 The use of equipment for marine scientific research 13
 - 2.2.3 Hydrographic and military surveying 14
 - 2.2.4 Underwater surveillance equipment as marine scientific research 17
- 3 Peaceful uses/purposes 20
 - 3.1 Introduction to peaceful uses/purposes 20
 - 3.2 Underwater surveillance equipment as peaceful uses/purposes..... 22
- 4 Submarine cables and pipelines 27
 - 4.1 Introduction to the regime for submarine cables and pipelines 27
 - 4.2 Underwater surveillance equipment as submarine cables..... 29
 - 4.3 Underwater surveillance equipment in connection with submarine cables and pipelines 30
- 5 The individual maritime zones 32
 - 5.1 The territorial sea, archipelagic waters and international straits..... 32
 - 5.2 The EEZ 35
 - 5.2.1 Rights and duties of the coastal State and other states in the EEZ..... 35
 - 5.2.2 Installations and structures 38

5.2.3 Other internationally lawful uses of the sea	41
5.2.4 Due regard	43
5.2.5 Residual rights.....	46
5.2.5 Use of surveillance equipment in the EEZ by the coastal State.....	47
5.3 The continental shelf	48
5.4 High seas and the Area:.....	50
6 Conclusion.....	53
Bibliography.....	56

1 Introduction

1.1 Context and relevance of the topic

The topic of the thesis is to what extent the use of underwater surveillance equipment for security and military purposes is in conformity with the Law of the Sea. Recent events including the sabotage against the Nord Stream pipelines in the Baltic Sea, as well as incidents of damage against Norwegian submarine cables off the coast of the Norwegian mainland and off the coast of Svalbard, have highlighted the vulnerability of submarine infrastructure.¹ Further, a recent documentary jointly produced by the public broadcasters of Norway, Denmark, Sweden and Finland describes Russian activities to map key sites for possible sabotage as part of a Russian programme to sabotage wind farms and communication cables in the North Sea.²

This revelation has further put the security of submarine infrastructure high on the agenda in the region. Subsea has been described as a new target in the so-called grey zone warfare, a conflict level between peaceful competition and armed conflict, with the sabotage against the Nord Stream pipelines mentioned as an example.³ However, already before these recent developments, submarine cable infrastructure had been mentioned as targets in a hybrid warfare campaign, and as vulnerable to terrorism and attacks from non-state violent groups.⁴

One method to counter this threat against submarine infrastructure is the use of various types of underwater surveillance equipment. This surveillance equipment - that may be installed to increase security of, for example, subsea communications cables - includes acoustic sensors such as different forms of sonars and hydrophones, magnetic sensors, optical sensors such as cameras, and oceanographic sensors, which measure oceanographic variables such as

¹BBC, *Nord Stream leaks: Sabotage to blame, says EU* (28 September 2022), available at <https://www.bbc.com/news/world-europe-63057966>. The Barents Observer, *'Human activity' behind Svalbard cable disruption* (February 11 2022), available at <https://thebarentsobserver.com/en/security/2022/02/unknown-human-activity-behind-svalbard-cable-disruption>. The Drive, *Norwegian Undersea Surveillance Network had its Cables Mysteriously Cut* (November 11 2021), available at <https://www.thedrive.com/the-war-zone/43094/norwegian-undersea-surveillance-network-had-its-cables-mysteriously-cut>. All accessed 14. June 2023.

² BBC, *Ukraine War: The Russian ships accused of North Sea sabotage* (19 April 2023), available at <https://www.bbc.com/news/world-europe-65309687>. Accessed 14. June 2023; Danmarks Radio, *Nord Stream er ikke enestående: Flere lande efterforsker mystiske nedbrud på kritisk infrastruktur* (19 April 2023), available at <https://www.dr.dk/nyheder/indland/moerklagt/nord-stream-er-ikke-enestaaende-flere-lande-efterforsker-mystiske-nedbrud>. Accessed at 17. August 2023.

³ The Loop, *Nord Stream sabotage: The dangers of ignoring subsea politics* (October 7 2022), available at <https://theloop.ecpr.eu/nord-stream-sabotage-the-dangers-of-ignoring-subsea-politics/>. Accessed 14. June 2023.

⁴ C Bueger and T Libetrau 'Protecting hidden infrastructure: The Security politics of the global submarine data cable network' (2021) 42(3) *Contemporary Security Policy* 391, p 395-396.

temperature, salinity or pressure.⁵ The equipment can be carried by various forms of stationary platforms such as buoys, moorings and seafloor bottom mounts, or mobile platforms such as unmanned surface vessels (USVs), autonomous underwater vehicles (AUVs) and unmanned underwater gliders (UUGs).⁶ In relation to stationary equipment, it is possible to detect submarines, large AUVs and divers from hydrophones mounted on the seabed.⁷

Further, underwater surveillance equipment can be deployed independently of any submarine infrastructure for military purposes. In this context, ‘submarine cables have been used for intelligence gathering through acoustic monitoring’.⁸ An example of this is the American Sound Surveillance System (SOSUS), which was a system of hydrophones placed by the United States on the seabed of the Atlantic and Pacific coasts during the Cold War.⁹ SOSUS constituted a ‘long-range early warning asset’ of the United States for protection against Soviet ballistic missile submarines, and provided ‘information for tactical, deep-ocean anti-submarine warfare’.¹⁰ Similarly, it has been suggested that Russia has installed a system of sonars in the Barents Sea comparable to SOSUS, and has planned to further establish a network of sonars in the Arctic Ocean. The network is said to consist of, among other things, underwater sonars on the seafloor and floating sonar-buoys.¹¹ Further, the Ukrainian NGO Strategy XXI Centre for Global Studies has assessed that Russia may have installed underwater surveillance systems of passive sonar stations on both sides of the Nord Stream pipelines that run through the Baltic Sea.¹² Likewise, a publication from 2008 requested and published by the European Parliament and authored by the Swedish Defence Research Agency mentions that the pipeline of the Nord Stream project is an excellent platform ‘for sensors of various kinds, for example radars, hydro-

⁵ D Eleftherakis and R Vicen-Bueno, ‘Sensors to Increase the Security of Underwater Communication Cables: A Review of Underwater Monitoring Sensors’ (2020) 20 (3) *Sensors* 737, p 748-259. P 12-23 in the pdf-document that can be downloaded here: <https://www.mdpi.com/1424-8220/20/3/737>. Accessed 17. August 2023.

⁶ Ibid, p 744. P 8 in pdf-document.

⁷ Ibid, p 754. P 18 in pdf-document.

⁸ JA Roach ‘Military Cables’ in DR Burnett, R Beckman and TM Davenport (eds) *Submarine Cables - The Handbook of Law and Policy* (Brill 2013) p 340.

⁹ Ibid, p 340.

¹⁰ Ibid, p 340.

¹¹ H. I. Sutton, Covert Shores, *Analysis - Russia seeks submarine advantage in Arctic* (20 September 2016), available at <http://www.hisutton.com/Analysis%20-Russia%20seeks%20submarine%20advantage%20in%20Arctic.html>. Accessed 27. June 2023.

¹² Centre for Global Studies Strategy XII, *Nord Stream 2 and the hidden advantages of Russian fleet in the Baltic* (18 May 2021), available at <https://geostrategy.org.ua/en/media/articles/pivnichniy-potik-2-i-prihovani-mozhlivosti-rosiyskogo-flotu-na-baltici>. Accessed 15. June 2023.

acoustic systems and sonars, i.e. electronic eyes and ears that could be used both for monitoring the system and for intelligence purposes'.¹³

By the very nature of the topic, it is not possible to know for certain the accuracy of the assessments of these surveillance systems in the Arctic and in the Baltic Sea, nor their existence. However, even the suggestion that these systems have been employed showcases the possible use of such surveillance equipment for military purposes.

As underwater surveillance equipment installed in relation to submarine infrastructure potentially, depending on the type and capabilities of the particular equipment, can also gather information from a wider area of the marine environment than the immediate vicinity of the infrastructure, a clear line cannot necessarily be drawn between equipment installed in relation to submarine infrastructure and equipment installed to gather intelligence for military purposes. Meaning, equipment that might have been installed to monitor submarine cables or pipelines can potentially also provide information from a wider area that the cable or pipeline passes through. This issue is especially relevant when the equipment is used in proximity of or in a foreign maritime zone.

Finally, submarine equipment that collects information from the marine environment can be used for purposes that are not related to security of submarine infrastructure or to military intelligence gathering, but instead for purposes of marine scientific research. Submarine cables and other equipment, such as buoys can be used to measure, for example, ocean currents, salinity and temperature.¹⁴ Sensor equipment can further be used to detect natural hazards such as submarine earthquakes and tsunamis.¹⁵

An example of a system with a purpose of marine scientific research is the Lofoten-Vesterålen Ocean Observatory (LoVe Ocean) in Norway. The LoVe Ocean is a cabled ocean observatory with additional scientific nodes, which 'are equipped with a range of chemical, physical and

¹³ FOI Swedish Defence Research Agency, RL Larsson, European Parliament, *Security Implications of the Nord Stream Project* (29 February 2008), available at [https://www.europarl.europa.eu/RegData/etudes/note/join/2008/388931/EXPO-AFET_NT\(2008\)388931_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2008/388931/EXPO-AFET_NT(2008)388931_EN.pdf). Accessed 16. August 2023.

¹⁴ L Carter and AHA Soons 'Marine Scientific Research Cables' in DR Burnett, R Beckman and TM Davenport (eds) *Submarine Cables - The Handbook of Law and Policy* (Brill 2013) p 325-332.

¹⁵ *Ibid*, p 325-332.

biological sensors'.¹⁶ However, due to the possibility that scientific equipment collects information that may have military significance, a clear line can not always be drawn between systems that have scientific purpose, and systems that have a security or military purpose. This is well exemplified by the LoVe Ocean Observatory. The observatory collects information from the marine environment including acoustic background noise, and the data collected by the system is first sent to the Norwegian Defence Research Establishment before being handed over to the Institute for Marine Research to protect information about the vessels of the Norwegian Navy.¹⁷ The intersection between the scientific and military purposes of underwater surveillance equipment is also exemplified by the fact that some parts of SOSUS have been put to other uses, such as analysis of vocalizations from marine mammals.¹⁸

1.2 Topic, objective and scope of the thesis

In light of the possible uses of underwater surveillance equipment described in the previous section, this thesis wishes to examine the regulation under the Law of the Sea of the use of underwater surveillance equipment for security and military purposes. In this context the thesis will examine the legal possibilities and constraints in relation to a coastal State using such equipment within its own maritime zones, the use by states of such equipment on the high seas and the use by states of such equipment within the maritime zones of another state. The thesis will examine the legal implications of the use of such equipment both in relation to the protection of submarine cables and pipelines, and in relation to situations where the equipment is used without connection to any infrastructure for security and military purposes.

Many states would most likely be highly sensitive to the use by other states of surveillance equipment within its maritime zones and oppose such use, comparable to how some states object to hydrographic surveying activities and different military activities within its maritime zones.¹⁹ It is therefore interesting to examine which legal grounds a coastal State would have in the Law of the Sea to regulate or resist the use of such equipment.

¹⁶ Lofoten-Vesterålen Ocean Observatory, *About LoVe*, Available at <https://loveocean.no/about-love> Accessed 14. June 2023.

¹⁷ Forsvarets forskningsinstitutt, *Militær oseanografi*, available at <https://www.ffi.no/forskning/prosjekter/militaer-oseanografi>. Accessed 27. June 2023.

¹⁸ JA Roach, n 8, p 340.

¹⁹ DR Rothwell and T Stephens, *The International Law of the Sea*, 2nd edition (Bloomsbury 2015) p 296-297 and 357-258.

The objective of the thesis is therefore to clarify the regulation and legal implications of the use of underwater surveillance equipment for purposes relating to security and military purposes.

The thesis will examine the regulation of the use of underwater surveillance equipment for security and military purposes, as opposed to purposes that relate to scientific research. However, as mentioned earlier, the line between military and scientific purposes is not always clear due to the possible dual use of such equipment. The thesis defines the use of the surveillance equipment for purposes of security as situations where the equipment is used to *protect* submarine cables and pipelines against *intentional* damage in the form of sabotage. The thesis further defines the use of the equipment for security and military purposes as any use of the equipment by a state as a means to gain maritime domain awareness for security and defense purposes, for example to monitor the movement of surface vessels or submarines of other states. Due to this definition, the scope of the thesis does not include the use of underwater surveillance equipment to warn against tsunamis, earthquakes or other natural disasters or naturally occurring threats.

The thesis defines underwater surveillance equipment as any equipment installed on the seabed or in the water column, independently or in connection with other cable or pipeline infrastructure, that collects information from the marine environment for the before mentioned purposes. This collected information can be in the form of acoustic, optical, magnetic or oceanographic data. The scope of the thesis is the *placement* of *stationary* surveillance equipment on the seabed or in the water column. The thesis will therefore not focus on the use of surveillance equipment from ships, submarines, autonomous underwater vehicles, gliders or other types of moving vessels or vehicles.

In relation to the use of underwater surveillance equipment to protect infrastructure, the thesis will only single out the use in connection with cables and pipelines. The reason for this is that states in accordance with the 1982 United Nations Convention on the Law of the Sea (LOSC)²⁰ enjoy rights to lay submarine cables and pipelines within the Exclusive Economic Zone (EEZ) and on the continental shelf of a coastal State. It is therefore interesting to examine whether it includes the possibility to use underwater surveillance equipment to seek to increase the security of these installations. This is opposed to structures such as oil rigs and wind farms, the

²⁰ United Nations on the Law of the Sea, adopted 10 December 1982, entered into force 16 November 1994, 1833 UNTS 397, Art. 58(1) and 79.

construction of which falls under the jurisdiction of the coastal State in its EEZ and on the continental shelf.²¹ The use of underwater surveillance equipment to protect these types of infrastructure should therefore not be considered separately from the question of the coastal States' possibilities to use such equipment within its own maritime zones.

The thesis will on the other hand examine whether the use of underwater surveillance equipment will, in some cases, constitute MSR and thus require the prior permission of the coastal State giving it a legal ground to oppose or regulate the use. This line of thought is to some extent comparable to how some states, such as China, maintain that military hydrographic surveying is a form of marine scientific research subject to coastal State regulation, while other states, such as the United States, maintain that the activity is a freedom of the high seas.²²

The thesis will further examine whether the use of surveillance equipment can be considered a breach of the requirement of peaceful uses of the seas in Article 301 of the LOSC²³, thereby giving a coastal State grounds for resisting the use of the equipment by other states within its maritime zones. This is again comparable to how some states have argued for the right to regulate military activities such as military exercises or maneuvers within its EEZ based on the requirement for peaceful uses of the seas.²⁴

In the case of oil and gas pipelines, sabotage and subsequent breakage of the pipelines carries the risk of environmental damage. In these cases the use of surveillance equipment to increase the security of this infrastructure could additionally be argued to protect and preserve the marine environment and not just the mere protection of the infrastructure itself and avoidance of disruptions in energy supply, telecommunications, etc. However, due to space limitations, the thesis will regretfully not have space to consider any potential implications of this additional objective of protection and preservation of the marine environment for the use of underwater surveillance equipment.

²¹ LOSC, Art. 60 and 80.

²² DR Rothwell and T Stephens, n 19, p 296-297 and 357-258.

²³ The reference to 'Articles' will hereinafter refer to articles in the United Nation Convention on the Law of the Sea (LOSC) unless otherwise specified.

²⁴ DR Rothwell and T Stephens, n 19, p 296.

Moreover, the thesis will only examine the regulation of the use of underwater surveillance equipment for security and military purposes during peacetime under the Law of the Sea, not during wartime under the Law of Naval Warfare.

1.3 Method and sources

To answer the research questions outlined in the previous section, and achieve the objective of clarifying the regulation and legal implications of the use of underwater surveillance equipment for purposes relating to security and military purposes, the thesis will use the *doctrinal* approach.

The doctrinal approach, or ‘black letter’ research, ‘aims to systematize, rectify and clarify the law on any particular topic by a distinctive mode of analysis of authoritative texts that consists of primary and secondary sources’.²⁵ In doctrinal research case law and relevant legislation is collected and analyzed in order to answer the question of what the law *is* in a particular area.²⁶ The research may also include secondary sources such as written commentaries on the case law or legislation.²⁷ The ‘principal or even sole aim’ of the research ‘is to describe a body of law and how it applies’.²⁸

The relevant sources will be identified in accordance with the sources set out in art. 38(1) of the 1945 Statute of the International Court of Justice (ICJ).²⁹ This provision ‘is widely recognized as the most authoritative and complete statement as to the sources of international law’.³⁰ These sources include international conventions establishing rules expressly recognized by the contracting states, international custom, as evidence of general practice accepted as law, and the general principles of law recognized by civilized nations. The provision further mentions judicial decisions and the teachings of the most highly qualified publicists of the various nations as subsidiary means for the determination of rules of law.

²⁵ M McConville and WH Chui ‘Introduction and Overview’ in M McConville and WH Chui (eds) *Research methods for law* (Edinburgh University Press 2017) p 4.

²⁶ I Dobinson and F Johns ‘Qualitative Legal Research’ in M McConville and WH Chui (eds) *Research methods for law* (Edinburgh University Press 2017) p 20-21.

²⁷ *Ibid*, p 21.

²⁸ *Ibid*, p 21.

²⁹ Statute for the International Court of Justice, adopted 26 June 1945, entered into force 24 October 1945, USTS 993.

³⁰ MN Shaw, *International Law*, 9th edition (Cambridge University Press 2021) p 59.

As the thesis concerns the Law of the Sea and the use of underwater surveillance equipment the thesis will have its starting point in the LOSC and an analysis and interpretation of the various provisions of the LOSC will be undertaken. This will include the various provisions that concern the coastal State's sovereign rights, jurisdiction and obligations within its own maritime zones, as well as other states' rights and obligations in the different maritime zones. Further, the provisions regarding marine scientific research and peaceful uses of the seas will be examined.

The LOSC will be interpreted in accordance with the principles for treaty interpretation laid down in Articles 31-33 of the 1969 Vienna Convention on the Law of Treaties (VCLT)³¹, in particular 'in accordance with the ordinary meaning to be given to the terms of the treaty in their context'.³² Article 31 of the VCLT 'lays down the fundamental rules of interpretation and can be taken as reflecting customary international law'.³³

The thesis will include a reference to case law but will primarily use literature, including an expert manual in the form of The Oslo Manual on Select Topics of the Law of Armed Conflict³⁴, to answer the legal questions examined in the thesis. The thesis concerns the Law of the Sea which is by its nature global, and where there are official language versions of the LOSC in Arabic, Chinese, English, French, Russian and Spanish.³⁵ Due to the language abilities of the author, the thesis will however only include the English version and literature written in English, which might give a predominance of views presented by anglophone scholars.

It is not the objective of the thesis to suggest *lex ferenda* within the area, but only to clarify the content of the law as it currently exists.

1.4 Structure

First, in section 2 the thesis examines the question of whether the use of underwater surveillance equipment for security and military purposes constitutes MSR. Second, in section 3 the thesis examines the question of whether the use of underwater surveillance equipment for security

³¹ Vienna Convention on the Law of Treaties, adopted 23 May 1969, entered into force 27 January 1980, 1155 UNTS 331.

³² VCLT, Art. 31(1). This will typically be seen in the interpretation taking the wording of the articles as the point of departure for the analysis.

³³ MN Shaw, n 30, p 814.

³⁴ Y Dinstein and AW Dahl, *Oslo Manual on Select Topics of the Law of Armed Conflict Rules and Commentary*, (SpringerOpen 2020).

³⁵ LOSC, Art 320.

and military purposes constitute peaceful uses of the seas. Next, in section 4, the thesis examines the question of any potential implications of the regime of submarine cables and pipelines in the LOSC on the regulation of the use of underwater surveillance equipment for security and military purposes. In this section both the question of whether underwater surveillance can in itself constitute a submarine cable and the question of whether surveillance equipment can be used to increase security of other cables and pipelines is examined. Finally, in section 5, the thesis examines the regulation of the use of underwater surveillance equipment within the various maritime zones, with a particular focus on whether a foreign state is permitted to use such equipment within the zone without the consent of the coastal State. The section examines the territorial sea/archipelagic waters/international straits, the EEZ, the continental shelf, and the high seas and the Area, respectively.

2 Underwater surveillance equipment as marine scientific research

2.1 Introduction to marine scientific research

The first question that the thesis will consider in relation to the regulation of the use of underwater surveillance equipment under the Law of the Sea, is whether it constitutes MSR. If the use of underwater surveillance equipment does, in all or some cases, constitute MSR this would mean that the activity is subject to the specialized regime for MSR in Part XIII of the LOSC. This section will first provide a short outline of the regime for MSR to illustrate the legal implications of the use of underwater surveillance equipment should it fall within the scope of this regime. The section will only briefly describe the provisions concerning coastal state jurisdiction over MSR, and the rights of researching states to conduct MSR within the various maritime zones. The section will not include a description of the other provisions of Part XIII concerning MSR.

In the territorial sea coastal States, ‘in the exercise of its sovereignty, have the exclusive right to regulate, authorize and conduct [MSR] in their territorial sea’.³⁶ Further, MSR ‘therein shall be conducted only with the express consent of and under the conditions set forth by the coastal State’.³⁷ By implication of Article 2(1), the same applies to internal waters and archipelagic

³⁶ LOSC, Art. 245; DR Rothwell and T Stephens, n 19, p 353-354.

³⁷ LOSC, Art. 245; DR Rothwell and T Stephens, n 19, p 353-354.

waters.³⁸ Further, it follows from Article 40 that during transit passage through straits used for international navigation, ships may not carry out any research or survey without the prior authorization of the States bordering the strait.³⁹

In the EEZ and on the continental shelf, '[coastal] States, in the exercise of their jurisdiction, have the right to regulate, authorize and conduct [MSR] [...] in accordance with the relevant provisions of [the LOSC]. Further, MSR in the EEZ and on the continental shelf shall only be conducted with the consent of the coastal State.'⁴⁰

In accordance with Article 257 '[all] states, irrespective of their geographical location, and competent international organizations have the right [...] to conduct [MSR] in the water column beyond the limits of the [EEZ]'.⁴¹ It further follows from Article 87(1)(f) that 'freedom of scientific research, subject to Part VI and VIII' of the LOSC, is a freedom of the high seas. 'All states, irrespective of their geographical, and competent international organizations have the right, in conformity with the provisions of Part XI, to conduct [MSR] in the Area'.⁴²

As can be seen from the description of the MSR regime above, concluding whether the use of underwater surveillance equipment for security and military purposes falls within the scope of the regime would provide some answers in relation to the regulation of such equipment under the Law of the Sea.

2.2 Underwater surveillance equipment as marine scientific research

2.2.1 Definition of marine scientific research

The LOSC does not contain a definition of MSR. The LOSC therefore also does not contain any obvious answer as to whether the use of underwater surveillance equipment for security, and military purposes falls under the regime for MSR. In literature, MSR has been generally defined as 'any scientific study or related experimental work *having the marine environment as its object* which is designed to increase knowledge of the oceans'.⁴³ It has been described

³⁸ DR Rothwell and T Stephens, n 19, p 354.

³⁹ JA Roach, *Excessive Maritime Claims*, 4th edition (Brill 2021), p 423.

⁴⁰ LOSC, Art. 246(1) and 246(2); DR Rothwell and T Stephens, n 19, p 354.

⁴¹ LOSC, Art. 257; DR Rothwell and T Stephens, n 19, p 360.

⁴² LOSC, Art. 256.

⁴³ Y Tanaka, *The International Law of the Sea*, 4th edition (Cambridge University Press 2023) p 468; See also T Treves, 'Marine Scientific Research' (2008) *Max Planck Encyclopedias of International Law*, p 1 [1].

that ‘MSR includes physical oceanography, marine chemistry, marine biology, scientific ocean drilling and coring, geological and geophysical research, as well as other activities with a scientific purpose’.⁴⁴

It has been argued that MSR has to be distinguished from exploration of marine natural resources, as exploration of resources is governed by a different legal framework.⁴⁵ In the EEZ, exploration of natural resources is regulated by the coastal State in accordance with Article 56(1)(a) of the LOSC, while MSR is regulated in accordance with the provisions of Part XIII.⁴⁶ Exploration is understood to mean ‘data-collecting activities (scientific research) concerning natural resources, whether living or non-living’, and the main difference between MSR and exploration is described as being the *purpose* of the data-collection activity.⁴⁷ In practice, it can be difficult to distinguish between MSR and exploration because the techniques used can be identical.⁴⁸

MSR is traditionally not considered to include the search for objects of an archaeological or historical nature at sea, ‘on the grounds that [MSR] is concerned only with the natural environment, not artificial objects’.⁴⁹

It has also been argued that the regime for MSR does not extend to all types of marine data collection.⁵⁰ In this context it is suggested that ‘activities that employ technical means, unmanned systems, sonar and remote sensing and other techniques frequently used in [MSR] may not, depending on the purpose of collecting the data, constitute MSR’.⁵¹ It is mentioned that ‘these activities include prospecting and exploration of natural resources; hydrographic surveys, military activities, including military surveys; [and] environmental monitoring and assessment’.⁵² It has further been argued that the ‘*intended* use distinguishes MSR from surveys, operational oceanography and exploration and exploitation of resources’, even though

⁴⁴ JA Roach, n 39, p 414; DR Rothwell and T Stephens, n 19, p 348.

⁴⁵ Y Tanaka, n 43, p 470.

⁴⁶ Ibid, p 470.

⁴⁷ Ibid, p 470.

⁴⁸ Ibid, p 470.

⁴⁹ R Churchill, V Lowe and A Sander, *The law of the sea*, 4th edition (Manchester University Press 2022), p 788.

⁵⁰ J Kraska, *Maritime Power and the Law of the Sea - Expeditionary Operations in World Politics*, (Oxford University Press 2011) p 272-273.

⁵¹ Ibid, p 273.

⁵² Ibid, p 273.

‘the means of data collection are often the same and may appear indistinguishable from MSR’, and that ‘[the] data collected might be the same.’⁵³ However, this view that some forms of marine data collection, such as hydrographic surveying, does not fall within the scope of MSR is not uncontroversial, as it will be demonstrated below in the section concerning hydrographic and military surveying and operational oceanography.

Specifically concerning so-called operational oceanography, this has been defined as ‘the routine collection of ocean observations, such as temperature, pressure, current, salinity, and wind in all maritime zones’, which is used ‘for the monitoring and forecasting of weather (meteorology), climate or ocean state’.⁵⁴ It has been argued that operational oceanography is not MSR which is also the view of the United States.⁵⁵

From this review of the definition of MSR, it appears that it is a central part of the definition of MSR that the activity has the marine environment as its object, and that the activity has a scientific purpose of increasing knowledge about the marine environment. The review further suggests that the purpose of a given activity, and the intended use of the collected data, is more decisive for the categorization of an activity than the particular methods and equipment used. This is seen in the distinction between MSR and exploration of natural resources, where the difference is the purpose of the collection of the data. This is further seen in the proposed distinction between MSR and other data collection activities such as surveying, operational oceanography and exploration of resources, where the difference is again the intended use of the data. The consequence of this view is that the actual techniques used and the data collected can be identical between the different activities, and that it is the *purpose* and *intended use* that determines whether a given activity falls within the scope of MSR. This of course creates potential difficulties in distinguishing between MSR and other activities, as collected data can be imagined used for several different purposes. These difficulties also apply to the use of underwater surveillance equipment, as such equipment can be multipurpose as described in the introduction to the thesis.

⁵³ JA Roach, n 39, p 450.

⁵⁴ Ibid, p 417.

⁵⁵ Ibid, p 448; R Churchill, V Lowe and A Sander, n 49, p 786-787.

2.2.2 The use of equipment for marine scientific research

The scope of the thesis is the use of underwater surveillance equipment that is placed stationary on the seabed or in the water column. To determine whether the use of such surveillance equipment for security and military purposes constitutes MSR, it is relevant to consider whether the use of autonomous and fixed equipment deployed into the marine environment, as opposed to equipment used from or attached to vessels, falls within the scope of MSR under the LOSC, or whether the concept of MSR only includes research conducted from research vessels.

This subject is addressed in Section 4 of Part XIII which covers scientific research installations and equipment in the marine environment. It follows from Article 258 that ‘the deployment and use of any type of scientific research installations or equipment in any area of the marine environment shall be subject to the same conditions as are prescribed in [the LOSC] for the conduct of [MSR] in any such area’.⁵⁶

In the context of the use of equipment for MSR, it can be mentioned that the introduction to the revised guide from the United Nations on MSR highlights that MSR ‘is increasingly conducted from autonomous platforms that can be either fixed or mobile, within the ocean’.⁵⁷

Because of the broad wording of Article 258, referring to ‘any type of scientific research installation or equipment’, the provision has been interpreted as ‘including within its scope all objects that are used to conduct research that are not ‘vessels’’.⁵⁸ Because Article 258 refers generally to ‘scientific research’, it has further been argued that the ‘provision applies not only to installations and equipment used in ‘marine’ scientific research, but also to any such item deployed in the marine environment and used for any kind of research’.⁵⁹

Specifically concerning submarine cables, these ‘can be used for collection of oceanographic data (by the incorporation of sensors in the cable repeater) and/or for the transport of such data collected at sea by other instruments or structures’.⁶⁰ Additionally, ‘the cables can be used

⁵⁶ LOSC, Art. 258; R Churchill, V Lowe and A Sander, n 49, p 802-803; Y Tanaka, n 43, p 475.

⁵⁷ United Nations, Division for Ocean Affairs and the Law of the Sea, *The Law of the Sea, Marine Scientific Research, A revised guide to the implementation of the relevant provisions of the United Nations Convention on the Law of the Sea* (2010), available at https://www.un.org/depts/los/doalos_publications/publicationstexts/msr_guide%202010_final.pdf. Accessed 24 June 2023, Introduction, p V.

⁵⁸ I Papanicolopulu ‘Article 258’ A Proless et al (eds) *The United Nation Convention on the Law of the Sea A Commentary* (Beck Hart Publishing 2017) p 1733-1734.

⁵⁹ *Ibid*, p 1733-1734.

⁶⁰ L Carter and AHA Soons, n 14, p 332.

exclusively for these purposes, or they can potentially be used for dual purposes such as telecommunications data transfer and oceanographic data collection'.⁶¹ Cables used for MSR are both subject to the regime of MSR and to the rules of the LOSC concerning submarine cables.⁶² It has been argued that submarine 'cables actually collecting oceanographic data', as opposed to cables that are merely 'transporting oceanographic data collected elsewhere in the marine environment', should be subject to the regime for MSR.⁶³ This also applies to cables used for dual purposes, such as telecommunications and collection of oceanographic data.⁶⁴

It must therefore be concluded that the use of equipment can potentially, depending on the purpose and way it is used, constitute MSR. It hereafter needs to be answered whether the use of surveillance equipment for specifically security and military purposes constitutes MSR. The purpose of the activity and intended use of the collected data as the distinguishing factor for whether a particular activity constitutes MSR or not, rather than the techniques and equipment used, seems to suggest that the use of underwater surveillance equipment for security and military purposes does not fall within the scope of MSR. This is without consideration for the possible difficulties in distinguishing between MSR and other activities that stem from the fact that underwater surveillance equipment can be multipurpose. However, the disagreement between both states and legal scholars as to whether hydrographic and military surveying falls within the regime for MSR or not, suggests that the question might need further consideration. This disagreement will therefore be considered in the following section.

2.2.3 Hydrographic and military surveying

Disagreement exists between some maritime powers and coastal States over whether the regime for MSR in Part XIII of the LOSC extends to all forms of data collection in the EEZ.⁶⁵ The United States and the United Kingdom regard hydrographic and military surveying as falling outside the scope of MSR, and argue that it may be exercised in the EEZ, free from coastal State regulation.⁶⁶ Several coastal States disagree with this position, among them China and

⁶¹ L Carter and AHA Soons, n 14, p 332; Y Tanaka, n 43, p 476.

⁶² L Carter and AHA Soons, n 14, p 335; Y Tanaka, n 43, p 476.

⁶³ Y Tanaka, n 43, p 476-477.

⁶⁴ L Carter and AHA Soons, n 14, p 336. Y Tanaka, n 43, p 476-477.

⁶⁵ R Churchill, V Lowe and A Sander, n 49, p 784-786; DR Rothwell and T Stephens, n 19, p 357; S Bateman 'Hydrographic surveying in the EEZ: differences and overlaps with marine scientific research' (2005) 29 *Marine Policy* 163, p 163.

⁶⁶ DR Rothwell and T Stephens, n 19, p 357; R Churchill, V Lowe and A Sander, n 49, p 786; S Bateman, n 65, p 163-164.

India, which have both protested to surveying activities by vessels of the United States and the United Kingdom within their EEZs.⁶⁷

This section will outline the arguments that have been put forward for and against whether hydrographic and military surveying falls under the regime for MSR, and the jurisdiction of the coastal State within its EEZ. This is done to examine whether any of the arguments can be applied to assess whether the use of underwater surveillance equipment for the security and military purposes at issue in this thesis would be considered MSR. As the objective of the thesis is not to examine the legal implications of hydrographic or military surveying, the arguments will only be presented and no firm conclusions will be drawn concerning hydrographic and military surveying. The case concerning hydrographic and military surveying is seen as comparable to the case of underwater surveillance equipment because both are activities that do not seem to have a purely scientific purpose, and where the collected data is intended for various applied uses. Further, both hydrographic and military surveying and the use of underwater surveillance equipment by one state within the maritime zone of another state are sensitive issues, and it is likely that some coastal States will protest the use of surveillance equipment within their maritime zones by other states, as has been the case with surveying.

The activity of surveying can be divided into hydrographic surveying and military surveying. Hydrographic surveys have been defined as ‘activities undertaken to obtain information to make navigational charts and for the safety of navigation’.⁶⁸ The information includes ‘the depth of water, the configuration and nature of the sea floor, the direction and force of currents, heights and times of tides, and hazards to navigation’.⁶⁹ Military surveys have been defined as surveys involving marine data collection for military purposes that are potentially classified and not shared with the public, and ‘can include oceanographic, hydrographic, marine geological, geophysical, chemical, biological, acoustic, and related data’.⁷⁰ It has been described that ‘hydrographic surveying is carried out primarily to improve the safety of navigation for all maritime users, including navies, while military surveying is relevant for different non-classified and classified military purposes, from tactical and strategic planning in

⁶⁷ DR Rothwell and T Stephens, n 19, p 357; R Churchill, V Lowe and A Sander, n 49, p 786; Y Tanaka, n 43, p 477-478.

⁶⁸ JA Roach, n 39, p 416.

⁶⁹ Ibid, p 416; S Bateman, n 65, p 167.

⁷⁰ Ibid, p 417.

relation to potential theaters of conflict to the testing and development of military equipment, such as underwater acoustic sensor systems'.⁷¹

It has been suggested that 'military surveys raise particular sensitivities associated with the national security of coastal States'.⁷² Hydrographic surveying in another state's EEZ also raises sensitivities, because the survey may have economic and commercial value as it can be used for the production of up-to-date charts that 'may contribute to stimulate tourism, fishing, and exploration and exploitation of natural resources'.⁷³ Further, 'such charts may be used for the regulation of marine pollution, coastal management, the modernisation of port facilities and coastal engineering'.⁷⁴

One argument presented to support the view that hydrographic surveying falls outside the scope of MSR is the fact that the text of the LOSC in several places makes a distinction between MSR and surveying.⁷⁵ In this context reference is made to Article 19(2)(j), Article 21(1)(g) and Article 40.⁷⁶ Another view in this context is that since a primary purpose of hydrographic surveying is to improve the safety of navigation, something which benefits all states, hydrographic surveying constitutes 'an 'internationally lawful use of the sea' related to navigation' which may be freely exercised in the EEZ in accordance with Article 58 of the LOSC.⁷⁷ It has further been argued that '[m]ilitary surveys are not specifically addressed in the [LOSC] and [that] there is no language implying that military surveys may be regulated in any manner by coastal States outside of the territorial sea and archipelagic waters'.⁷⁸

On the other hand, one argument that has been made to support the position that the coastal State has jurisdiction over hydrographic and military surveying is that it is *essentially* MSR, because it is concerned with 'much the same phenomena as oceanographers have always been interested in', and that '[t]he only real difference stems from the motivation of the activity, with

⁷¹ DR Rothwell and T Stephens, n 19, p 357-358.

⁷² Y Tanaka, n 43, p 477.

⁷³ *Ibid*, p 477.

⁷⁴ Y Tanaka, n 43, p 477; JA Roach, n 39, p 416; S Bateman, n 65, p 169.

⁷⁵ R Churchill, V Lowe and A Sander, n 49, p 785; JA Roach, n 39, p 435.

⁷⁶ R Churchill, V Lowe and A Sander, n 49, p 785. JA Roach, n 39, p 435.

⁷⁷ R Churchill, V Lowe and A Sander, n 49, p 785.

⁷⁸ JA Roach, n 39, p 437.

hydrographic and military surveying tending to serve different purposes from either pure or applied research'.⁷⁹

Another view presented to support the argument that hydrographic surveying in the EEZ should be within the jurisdiction of the coastal State is 'the relevance of hydrographic surveying to economic development'.⁸⁰ It is argued that '[h]ydrographic data in the EEZ clearly has an economic value to the coastal State, and [that] the coastal State should be in a position to manage and control the release of such data, regardless of how and by whom it was collected'.⁸¹ It is therefore argued by some that hydrographic surveying can be regarded as an "activity for the economic exploitation and exploration of the EEZ" since the data obtained often has a commercial value', and that it falls within the sovereign rights of the coastal State in accordance with Article 56(1).⁸²

2.2.4 Underwater surveillance equipment as marine scientific research

In this section, it will be considered whether the use of underwater surveillance equipment for security and military purposes falls within the scope of MSR based on the definition of MSR and the views concerning hydrographic and military surveying above.

The use of underwater surveillance equipment for security and military purposes, as it has been defined within this thesis, means the use of any equipment installed on the seabed or in the water column, independently or in connection with other cable or pipeline infrastructure, that collects information from the marine environment for security and military purposes. These purposes are defined as opposed to purposes that relate to scientific research and include the use of the equipment to protect submarine cables and pipelines against intentional damage in the form of sabotage, and any use of the equipment by a state as a means to gain maritime domain awareness for security and defense purposes.

Like with military surveying, a coastal State would likely be sensitive to the use of underwater surveillance equipment within its maritime zones as it could, for example, be used to monitor the movement of its naval vessels. The sensitivity of the data that can be collected from such equipment is showcased by how the data from the LoVe Ocean Observatory is first transferred

⁷⁹ DR Rothwell and T Stephens, n 19, p 357.

⁸⁰ S Bateman, n 65, p 169.

⁸¹ *Ibid*, p 169.

⁸² R Churchill, V Lowe and A Sander, n 49, p 785-786; S Bateman, 64, p 169-170.

to the Norwegian Defence Research Establishment to protect information about the vessels of the Norwegian Navy. The LoVe Ocean Observatory is a Norwegian research facility, but the example demonstrates that the deployment by a state of equipment with these capabilities within the maritime zones of another state would also be a sensitive issue.

As described, the use of equipment to collect data from the marine environment can be within the scope of MSR. However, as mentioned, the particular purpose for the use of underwater surveillance equipment that is examined in this thesis suggests that this activity would not constitute MSR. The question is then whether any other considerations can support the view that the use of surveillance equipment would fall within the scope of the regime for MSR.

The argument presented in relation to hydrographic surveying regarding the wording of the LOSC and its distinction in certain provisions between MSR and surveying is naturally not applicable in the case of underwater surveillance equipment, as the wording of the LOSC makes no reference to ‘surveillance equipment’ or comparable terms. Likewise, the argument concerning the importance of hydrographic surveying to improve the safety of navigation, and the resulting connection with navigation is also not applicable in the case of submarine surveillance equipment used for security and military purposes.

On the other hand, one of the main arguments as to why hydrographic surveying should be under the jurisdiction of the coastal State in the EEZ, namely that the collected data has an economic and commercial value to the coastal State, is not relevant in the case of the use of underwater surveillance equipment. The data that would be expected to be collected from the types of surveillance equipment covered by this thesis in the form of acoustic, optical, magnetic or oceanographic data, does not have an economic or commercial value in the same way as with hydrographic data, that can be used to produce hydrographic maps of the seabed in the coastal State’s EEZ.

The other main argument presented to support the view that coastal States have jurisdiction over hydrographic and military surveying is that it is essentially MSR because it is concerned with the same phenomena as oceanographers are interested in, and that the only real difference stems from the motivation of the activity. The proponents of the view that surveying is not MSR has conversely argued that military surveys are not undertaken for the purpose of advancing science or expanding human knowledge of the marine environment.

This line of argumentation would seem to apply differently to the case of the use of underwater surveillance equipment for security and military purposes. The purpose or motivation of the use of surveillance equipment is *different* from the purpose of advancing science and human knowledge of the marine environment, as used in the argument above. However, the use of the surveillance equipment is also not aimed at the natural marine environment or concerned with natural phenomena as is argued to support the view that hydrographic and military surveying is MSR. Underwater surveillance equipment might use some of the same techniques that could be utilized to conduct MSR, such as the collection of acoustic or oceanographic data, but the activity is not concerned with the same phenomena as MSR.

Thus, the strongest argument against the use of underwater surveillance equipment being MSR seems to stem from the definition of MSR as having the *marine environment* as its object and the purpose of increasing knowledge of the marine environment. The use of the equipment for the purposes that have been defined in this thesis is aimed at *man made threats or objects* such as surface vessels, submarines, USVs, divers, etc. This is opposed to, for example, military surveying which, even if the purpose of the activity is ultimately a military one, is still aimed at the features of the natural environment and provides increased knowledge of the marine environment.

It is therefore the view of this thesis that it cannot meaningfully be argued that the use of underwater surveillance equipment for security and military purposes constitutes MSR, as it does not have a scientific purpose to increase knowledge of the marine environment and correspondingly does not have the natural environment as its object. In this context, it is further argued that the installment of, for example, a fixed sonar sensor in the EEZ to monitor objects such as vessels and submarines, is more comparable to a naval ship navigating with sonar or radar systems active than to MSR or surveying activities.

This conclusion does not solve the difficulties that stems from the fact that equipment can be multipurpose and can, for example, be used for both military and scientific purposes, and that collected data can be used for various purposes. However, these difficulties are inherent in several issues concerning the categorization of activities of marine data collection, where the purpose and intended use of the data is the decisive factor for whether the activity constitutes pure, or applied research, or MSR at all. The conduct of marine data collection carries the possibility that the collected data is from the beginning intended for an additional, or entirely

different purpose, or that an additional possible use of the collected data comes up later. The possibility that the collected data is used for other purposes than the one declared, does not change the conclusion that the use of underwater surveillance equipment strictly for security and military purposes, as they are defined within this thesis, does not constitute MSR.

A coastal State might have a very real security and military interest in not wishing other states to use such equipment within its maritime zones. However, it is not a legitimate ground to oppose the use of such equipment to claim that it constitutes MSR. In the following parts of the thesis, it will be considered whether other rules exist under the Law of the Sea to safeguard the coastal State's security interests, providing it the legal grounds to oppose the use of underwater surveillance equipment within its maritime zones.

3 Peaceful uses/purposes

3.1 Introduction to peaceful uses/purposes

In the LOSC, 'the use of the oceans is reserved for 'peaceful purposes''.⁸³ The next question that the thesis will examine is therefore whether the use of underwater surveillance equipment for security and military purposes constitutes peaceful uses of the seas, as called for in the LOSC. As will be discussed later in this section, some disagreement exists concerning the legality of military operations, including intelligence gathering operations, by one state within the EEZ of another state, with some of this disagreement concerning whether these activities are for peaceful purposes.⁸⁴

Article 301, with the headline 'peaceful uses of the seas', provides that states, in exercising their rights and performing their duties under the Convention, 'shall refrain from any threat or use of force against the territorial integrity or political independence of any state, or in any manner inconsistent with the principles of international law embodied in the Charter of the United Nations'.

Further, various provisions of the LOSC make reference to 'peaceful purposes'.⁸⁵ According to Article 88, the high seas are reserved for peaceful purposes, while Article 141 reserves the

⁸³ J Kraska, 'Military Operations' in DR Rothwell et al (eds), *The Oxford Handbook of the Law of the Sea*, 1st edition, (Oxford University Press 2015) p 868; DR Rothwell and T Stephens, n 19, p 286.

⁸⁴ J Kraska, n 83, p 884; K Zou, 'Peaceful Use of the Sea and Military Intelligence Gathering in the EEZ' (2016) 22 *Asian Yearbook of International Law* 161, p 163.

⁸⁵ DR Rothwell and T Stephens, n 19, p 286; J Kraska, n 83, p 868.

deep seabed for peaceful purposes. Further, according to Articles 240, 242 and 246, MSR is to be carried out exclusively for peaceful purposes.

In the literature, it has been argued that ‘there appears to be no substantial difference between [the] two terms’ ‘peaceful uses’ and ‘peaceful purposes’ in the LOSC, or that the two terms are synonymous.⁸⁶ Within this thesis, the terms ‘peaceful purposes’ and ‘peaceful uses’ are therefore taken to have the same meaning.

The LOSC gives no definition to the meaning of ‘peaceful uses/purposes’.⁸⁷ It has been argued that the prevailing view is that the reservation of the oceans for peaceful purposes only prohibits ‘aggressive military acts, which broadly are acts that contravene the UN Charter’.⁸⁸ A good argument put forth to support of this position is that Article 301 is a direct reference ‘to the prohibition on the use of force in Article 2(4) of the United Nations Charter’, and that ‘it is apparent from the wording of the provision that the peaceful purposes requirement does not absolutely or even relatively prohibit military activities in any maritime zone’.⁸⁹ The implication of this argument is that ‘[only] those activities which are incompatible with the prohibition of the use of force in the UN Charter are forbidden’.⁹⁰

Another argument in support of the view that the reservation of the oceans for peaceful purposes does not prohibit all military activities but only those that violate the prohibition on the use of force in the UN Charter relates to the history of the drafting of the LOSC. During the negotiations of the LOSC, there were diverging views on what the meaning of the reservation of the oceans for peaceful purposes should be.⁹¹ Some developing states suggested that the requirement for peaceful purposes should ‘mean that all military operations in the oceans were prohibited’.⁹² A second group of states suggested that the term peaceful purposes ‘prohibits only military activities for ‘aggressive purposes’’.⁹³ The major maritime powers, including the

⁸⁶ M Hayashi ‘Military and intelligence gathering activities in the EEZ: definition of key terms’ (2005) 29 *Marine Policy* 123, p 123; J Kraska ‘Seabed Technology and Naval Operations on the Continental Shelf’ in J Kraska and YK Park (eds), *Emerging Technology and the Law of the Sea*, (Cambridge University Press 2022) p 312; J Kraska, n 50, p 253.

⁸⁷ M Hayashi, n 86, p 124.

⁸⁸ R Churchill, V Lowe and A Sander, n 49, p 281.

⁸⁹ K O’Brien ‘Article 301’ in A Proless et al (eds) *The United Nation Convention on the Law of the Sea A Commentary* (Beck Hart Publishing 2017) p 1944.

⁹⁰ *Ibid*, p 1944.

⁹¹ J Kraska, n 83, p 868.

⁹² J Kraska, n 83, p 868; M Hayashi, n 86, p 124.

⁹³ J Kraska, n 83, p 868; M Hayashi, n 86, p 124.

United State and the Soviet Union, maintained that military activities that were conducted in a manner consistent with Article 2(4) of the UN Charter were lawful, and reflective of peaceful purposes.⁹⁴

In addition, it has been argued that the direct and indirect references to military operations throughout the LOSC makes it clear that military operations are not incompatible with peaceful uses of the oceans.⁹⁵ It has also been argued that based on the various provisions of the LOSC relating to military activities, such as ‘the privileged status granted to military vessels [in Articles 32, 95 and 236,] the prohibition of certain military activities within, but not outside, the territorial sea, [...] and the optional exclusion [in Article 298] of disputes concerning military activities, [...] it is logical and realistic to interpret the peaceful uses/purposes clauses as prohibiting only activities which are not consistent with the UN Charter’.⁹⁶ Finally, it has been argued that ‘a large majority of states accept that Article 2(4) of the UN Charter is the most apt metric for whether activities are “peaceful”’, and ‘this view has become the conventional understanding of the terms “peaceful purposes” and “peaceful uses”’.⁹⁷

Based on the arguments above, namely that the wording of Article 301 referring to Article 2(4) of the UN Charter, the history relating to the negotiation of the LOSC and the fact that view is widely accepted, this thesis adopts the view that the reservation in the LOSC of the oceans for peaceful uses/purposes does not prohibit all military activities but only prohibits military acts that violate Article 2(4) of the UN Charter.

3.2 Underwater surveillance equipment as peaceful uses/purposes

With the conclusion that the reference in the LOSC to peaceful uses/purposes is a reference to the UN Charter, the question is hereafter whether the use of underwater surveillance equipment for security and military purposes constitutes a threat or use of force inconsistent with the Charter and thus a violation of the reservation of the oceans for peaceful uses/purposes.

Naval intelligence collection has been defined as ‘the process of acquiring vital information to inform military operations and the conduct of statecraft, and [this] information may be gathered

⁹⁴ J Kraska, n 86, p 313; J Kraska, n 83, p 868-869; M Hayashi, n 86, p 124.

⁹⁵ DR Rothwell and T Stephens, n 19, p 286.

⁹⁶ M Hayashi, n 86, p 125.

⁹⁷ J Kraska ‘Intelligence Collection and the International Law of the Sea’ (2022) 99 *International Law Studies* 602, p 609.

passively or actively from submarines, surface ships, aircraft, satellites, and numerous types of aerial and maritime unmanned sensors'.⁹⁸ As the scope of the thesis is not the regulation of intelligence collection in general, but merely the regulation of underwater surveillance equipment, the thesis will not concern itself more with the definition of intelligence collection. However, the use of underwater surveillance equipment for security and military purposes, including for example the use of the equipment to monitor the movement of submarines of other states, might be considered to constitute intelligence collection. The examination of the concept of peaceful uses/purposes will therefore include the diverging views and arguments concerning the peacefulness of intelligence gathering, and data collection activities. This is done to examine whether the use of underwater surveillance equipment for security and military purposes, which might be viewed as one means to gather intelligence within a broader area of intelligence collection, can be considered peaceful. As the thesis does not concern intelligence collection in general no conclusions will be drawn concerning the peacefulness of intelligence collection in general, but only concerning the specific topic of the use of underwater surveillance equipment for security and military purposes. This section will primarily concern the EEZ as it is primarily in this zone that controversy over intelligence collection exists. However, firstly, intelligence collection on the high seas will be mentioned.

With regard to intelligence gathering on the high seas, it has been argued that 'the international Law of the Sea does not prohibit the collection of national security or military intelligence on or from the high seas', as it is within the scope of the freedoms of the high seas in Article 87.⁹⁹ Specifically concerning the use of equipment, it follows from Rule 63 of the Oslo Manual on Select Topics of the Law of Armed Conflict that 'all states are entitled to install and operate undersea systems and devices in the high seas with due regard to the rights of other states'.¹⁰⁰ This rule does not concern an issue relating to the Law of Armed Conflict but is a reference to the general Law of the Sea. From the commentary to the rule, it follows that the right is not limited to civilian and scientific systems and devices and that the peaceful uses clause in Article 88 does not prohibit military uses of the seas that do not qualify as a use or threat of force.¹⁰¹ The rule or the commentary does not specifically mention equipment for surveillance or

⁹⁸ J Kraska, n 97, p 603.

⁹⁹ Ibid, p 605.

¹⁰⁰ Y Dinstein and AW Dahl, n 34, p 57.

¹⁰¹ Ibid, p 57.

intelligence gathering, but it does concern the right for states to operate equipment for military purposes on the high seas.

Concerning the EEZ, disagreement exists over the right to conduct military operations, including surveillance activities, in the EEZ.¹⁰² Regarding the control of intelligence gathering within the EEZ, there are two major schools of thought.¹⁰³ The major naval powers, including the United States, take the view that military activities in the EEZ are governed by the high seas regime, while some other naval states, including China and India, take the view that military activities in the EEZ may only be conducted with the approval of the coastal State.¹⁰⁴ One of the legal issues concerning intelligence collection in the EEZ revolves around whether it is peaceful.¹⁰⁵ Concerning intelligence collection within the EEZ in general, it has been argued that ‘where a warship gathers military intelligence [...] while engaged in what appears to be routine navigation, such an activity is arguably included in the freedom of navigation’.¹⁰⁶ More specifically concerning the use of equipment, it has been argued that the laying of cables ‘for military purposes, for example to detect the presence of submarines, [...] appears to be permissible, as it does not contravene the prohibition against acts that are not for ‘peaceful purposes’’.¹⁰⁷ The authors do not elaborate why the laying of cables does not violate the prohibition on non-peaceful acts, but presumably it is based on the argument that the laying of the cables is not in violation of Article 2(4) of the UN Charter. Another argument in support of the view that surveillance and intelligence gathering constitute a ‘legitimate peaceful use of the sea’, is that the ‘customary interpretation of peaceful is non-aggressive as opposed to non-military’.¹⁰⁸ Further, it is argued that it is an oversimplification to say that surveillance and intelligence gathering in the EEZ is always prejudicial to the security of the coastal State, since it fills a role of ‘trust but verify’, and therefore has ‘utility as a confidence-building measure’.¹⁰⁹

¹⁰² J Kraska, n 83, p 884; K Zou, n 84, p 163.

¹⁰³ H Williamson, ‘Intelligence Gathering and Espionage in the Exclusive Economic Zone: Peaceful or Not?’ in PR Boudreau et al (eds) *The Future of Ocean Governance and Capacity Development: Essays in Honor of Elisabeth Mann Borgese* (Brill 2018) p 418.

¹⁰⁴ *Ibid*, p 418.

¹⁰⁵ M Hayashi, n 86, p 126.

¹⁰⁶ R Churchill, V Lowe and A Sander, n 49, p 281.

¹⁰⁷ *Ibid*, p 285.

¹⁰⁸ H Williamson, n 103, p 420.

¹⁰⁹ *Ibid*, p 420.

Contrary, in support of the view that the conduct of surveillance and intelligence gathering in the EEZ is not peaceful, it has been argued that “‘freedom of navigation and overflight’” in the EEZ does not include the freedom to conduct military and reconnaissance activities’ and that ‘[s]uch activities encroach or infringe on the national security interests of the coastal State, and can be considered a use of force or a threat of use of force against the coastal State’.¹¹⁰ Further, in support of the view that intelligence collection might in some cases not be peaceful, it has been argued that it follows from the principle set out in Article 301 ‘that military activities, including military intelligence gathering with threatening potential, should not be carried out in the EEZs of other countries’.¹¹¹ In this context, it is argued that ‘[w]hile military activities are allowed [in the EEZ], the factor of national jurisdiction must be taken into account [and that there] should be some kind of check-and-balance mechanism for foreign military activities in the EEZ’.¹¹² It is added that ‘it is hard to understand the logic of the argument that while [MSR] in the EEZ is subject to the consent of the coastal State, military activities can be conducted freely without any check of the coastal State’.¹¹³ From these views appear the idea that the ‘threatening potential’ of a military activity has importance for whether an activity constitutes a peaceful use of the oceans.

In continuation of this notion that the threatening potential of an activity is determining for the peacefulness of the activity, it can be mentioned that it has been suggested that some military surveys might not be for peaceful purposes based on the intended purpose of the surveys.¹¹⁴ One example mentioned is ‘beach surveys to support possible amphibious operations’.¹¹⁵ Further, it is mentioned that ‘[s]ome hydrographic surveys to support submarine operations or contingency plans for mining or mine clearance would also not be for peaceful purposes, and could imply a threat to the security of the coastal State’.¹¹⁶ In this context it can further be mentioned that ‘China considers “military hydrographic survey activities” in the EEZ without the coastal State’s permission as [...] a type of battlefield preparation, and thus a threat of

¹¹⁰ R Xiaofeng and C Xizhong ‘A Chinese Perspective’ (2005) 29 *Marine Policy* 139, p 142.

¹¹¹ K Zou, n 84, p 162.

¹¹² *Ibid*, p 164.

¹¹³ *Ibid*, p 164.

¹¹⁴ S Bateman, n 65, p 167.

¹¹⁵ *Ibid*, p 167.

¹¹⁶ *Ibid*, p 167.

force'.¹¹⁷ It is however also mentioned that '[it] is doubtful that China used the term 'threat of force' in a strictly legal sense'.¹¹⁸

Another view also centers around the threatening potential of the intelligence collection, this time in relation to the method by which the intelligence is collected. In this context it has been questioned whether some '[electronic warfare (EW)] activities conducted in or above the EEZ should be considered to be inconsistent with the [UN] Charter, and thus also the peaceful purposes clauses of the [LOSC]'.¹¹⁹ It is mentioned that 'active signals intelligence (SIGINT) activities conducted from aircraft and ships' are particularly relevant in this context.¹²⁰ It is described that some of these active SIGINT activities 'are deliberately provocative and intended to generate programmed responses [while other] SIGINT activities intercept naval radar and emitters, thus enabling the location, identification and tracking of surface ships as well as the planning and preparation of electronic or missile attacks against them'.¹²¹ It is argued that '[t]hese activities appear to involve far greater interference with the communication and defense systems of the targeted coastal State than traditional passive intelligence gathering activities conducted from outside national territory'.¹²² While it is argued that a question arises in relation to whether these types of intelligence activities are contrary to the peaceful uses/purposes clauses, it is however also suggested that since the activities does not involve threat or use of force it is more appropriate to deal with this question under the terms 'other internationally lawful uses' or 'due regard'.¹²³ Further in support of the view that intelligence collection might not be peaceful based on how it is conducted, it has been suggested that '[s]ome active means of intelligence gathering, [...] such as interfering or disrupting communications, disturbing living resources or persons or causing environmental damage', might violate the LOSC.¹²⁴

From the views outlined above, it appears that there are disagreements concerning whether intelligence and information collection activities in the EEZ by a foreign state can be considered peaceful. While one view is that intelligence gathering within the EEZ is legal, other views suggest that intelligence gathering activities might not be peaceful, at least in cases where the

¹¹⁷ M Hayashi, n 86, p 126.

¹¹⁸ Ibid, p 126.

¹¹⁹ Ibid, p 126.

¹²⁰ Ibid, p 126.

¹²¹ Ibid, p 126.

¹²² Ibid, p 126.

¹²³ Ibid, p 136.

¹²⁴ H Williamson, n 103, p 420.

activity has threatening potential, or where the activity involves methods that interfere with the communication and defense systems of the coastal State. Further, some views suggest that data collection might not be peaceful if it happens as a part of the preparation of military operations against the coastal State, and therefore could imply a threat of force.

The scope of the thesis is the use of stationary surveillance equipment on the seabed or in the water column that collects data from the marine environment in the form of acoustic, optical, magnetic or oceanographic data. The intrusiveness of this passive collection of data is *not* comparable to SIGINT or EW activities that involve interception or disruption of communication or other electromagnetic emissions from the coastal State. The data that can be collected from the surveillance equipment that is the scope of this thesis, can undoubtedly have military significance, such as for the tracking of naval surface vessels or submarines. It does, however, not amount to battlefield preparation comparable to surveying of a beach as preparation of amphibious operations, or hydrographic surveying as preparation of submarine operations, or mining within the EEZ of the coastal State. Based on these observations, it is the view of this thesis that the use of underwater surveillance equipment by one state within the EEZ of another state is not a violation of the reservation of the seas for peaceful purposes.

4 Submarine cables and pipelines

4.1 Introduction to the regime for submarine cables and pipelines

This chapter will examine the regime in the LOSC concerning the right to lay cables and pipelines to clarify whether this regime has any implications on the regulation of the use of underwater surveillance equipment for security and military purposes.

The freedom to lay submarine cables and pipelines is a high seas freedom, and according to Article 112, '[a]ll states are entitled to lay submarine cables and pipelines on the bed of the high seas beyond the continental shelf'.¹²⁵ According to Article 79(1), '[a]ll states are entitled to lay submarine cables and pipelines on the continental shelf'.¹²⁶ Further, according to Article 58(1), all states enjoy the freedom to lay submarine cables and pipelines in a foreign EEZ and 'other internationally lawful uses of the sea' related to this freedom, such as those associated with the

¹²⁵ DR Rothwell and T Stephens, n 19, p 165.

¹²⁶ R Churchill, V Lowe and A Sander, n 49, p 244.

operation of submarine cables and pipelines.¹²⁷ Internationally lawful uses related to the right to lay submarine cables and pipelines might for example ‘include their servicing and repair’.¹²⁸

The freedom to lay submarine cables and pipelines is subject to a number of limitations.¹²⁹ In accordance with Article 58(3), laying of submarine cables and pipelines in a foreign EEZ, and therefore also ‘on the continental shelf to the extent that it overlaps with the EEZ’, must be exercised with due regard for the rights and duties of the coastal State.¹³⁰ Further, in accordance with Article 58(3), states conducting cable operations in the EEZ shall comply with the laws and regulations adopted by the coastal State in accordance with the provisions of the Convention, and other rules of international law in so far as they are not incompatible with Part 5 of the LOSC.¹³¹

The freedom is further ‘limited by the powers of the coastal State under Article 79 [...], to regulate the laying of cables and pipelines on its continental shelf, which within 200 nm of the baselines [overlaps] with the EEZ.’¹³² According to Article 79(2), ‘[s]ubject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines, the coastal State may not impede the laying or maintenance of submarine cables and pipelines’.¹³³ While, in accordance with Article 79(3), the delineation of the course for the laying of submarine *pipelines* on the continental shelf is subject to the consent of the coastal State, ‘the delineation of the course for submarine *cables* is not subject to the consent of the coastal State’.¹³⁴ Concerning the obligations of the coastal State, it can be mentioned that in accordance with Article 56(2), the coastal State, in exercising its rights and performing its duties in the EEZ, shall have due regard for the rights and obligations of other states.¹³⁵ Further, in accordance with Article 78(2), the exercise of the coastal State over the continental shelf must not infringe

¹²⁷ R Churchill, V Lowe and A Sander, n 49, p 285; DR Burnett, R Beckman and TM Davenport ‘Overview of the International Legal Regime Governing Submarine Cables’ in DR Burnett, R Beckman and TM Davenport (eds) *Submarine Cables - The Handbook of Law and Policy* (Brill 2013) p 79.

¹²⁸ R Churchill, V Lowe and A Sander, n 49, p 285.

¹²⁹ *Ibid*, p 285.

¹³⁰ DR Burnett, R Beckman and TM Davenport, n 127, 80.

¹³¹ *Ibid*, p 80.

¹³² R Churchill, V Lowe and A Sander, n 49, p 285.

¹³³ DR Burnett, R Beckman and TM Davenport, n 127, p 81.

¹³⁴ *Ibid*, p 81.

¹³⁵ *Ibid*, p 83.

or result in any unjustifiable interference with navigation and other rights and freedoms of other states.¹³⁶

There are two different ways in which it can be imagined that the regime for cables and pipelines could influence the legal possibilities and constraints of a state's access to use underwater surveillance equipment. First, if the underwater surveillance equipment in question is in itself to be considered a cable subject to the regime. Secondly, if the equipment is used to increase the security of submarine cables and pipelines and where the question therefore becomes, whether the use of such equipment is included within the right of a state to lay submarine cables and pipelines. This next section will first discuss the question of whether underwater surveillance equipment could itself fall within the regime for cables. The section thereafter will discuss the question of whether the use of underwater surveillance equipment can be seen as part of the right to submarine cables and pipelines.

4.2 Underwater surveillance equipment as submarine cables

As has also been described in the introduction to the thesis, submarine cables have been used for intelligence gathering through acoustic monitoring, such as in the case of SOSUS.¹³⁷ This use of submarine cables falls within the definition of the use of underwater surveillance equipment for security and military purposes in this thesis. In the following, the question of whether these types of cables fall within the regime of submarine cables will therefore be discussed.

Concerning the use of military cables, it has been argued that the LOSC does not address military use of submarine cables, but that there is nothing suggesting that military cables should be afforded different treatment than other submarine cables.¹³⁸ In this context, the meaning of the term military cables does also include submarine cables used for intelligence gathering through acoustic monitoring.¹³⁹

As a view that is of particular relevance for the underwater surveillance equipment, it has been suggested that the 'emplacement of acoustic array systems on the continental shelf', that 'are of military importance particularly in anti-submarine warfare (ASW) preparation', might, in

¹³⁶ DR Burnett, R Beckman and TM Davenport, n 127, p 83.

¹³⁷ JA Roach, n 8, p 340.

¹³⁸ Ibid, p 343.

¹³⁹ Ibid, p 340.

some circumstances, be ‘included in the right to lay submarine cables’.¹⁴⁰ These acoustic arrays systems are within the definition of underwater surveillance equipment in this thesis and the arguments presented are therefore applicable to some forms of underwater surveillance equipment. First, it is argued that ‘there is no necessity that a cable or pipeline connects two points on opposite or adjacent coasts, because pipelines from offshore oil-platforms [...] to land storage tanks or raffineries are “pipelines” within the meaning of the [LOSC].¹⁴¹ To substantiate the view that these systems can be included in the right to lay submarine cables, it is argued that ‘[pipelines] and cables are designed to transport something, oil and gas, electricity, information etc.’ while the ‘salient features of fixed acoustic detection arrays are surveillance, reconnaissance, detection and the communication of the information gathered to a terminal or other receiver’.¹⁴² The argument is that ‘[s]ince such fixed arrays do transmit electronic impulses and [since] the transmittal of information is the most important feature for the functioning of ASW equipment they can be subsumed under the freedom to lay submarine cables’.¹⁴³ This, however, can only be decided on a *case by case* basis, taking into account the size, operative characteristics and functional attributes of each system.¹⁴⁴

Based on the views outlined above, namely that the LOSC does not address military cables differently than other cables, and that cables used for surveillance, like other cables, transmit electronic impulses, it is concluded that underwater surveillance equipment used for security and military purposes and placed on the seabed can, in some cases, fall within the regime for submarine cables and pipelines in the LOSC. This however depends on a case by case assessment depending on the characteristics of the specific equipment in question.

4.3 Underwater surveillance equipment in connection with submarine cables and pipelines

As described in the introduction to the thesis, underwater surveillance equipment can be installed to increase the security of submarine infrastructure, such as communications cables, by protecting these against the threat of sabotage.

¹⁴⁰ E Rauch, ‘Military Uses of the Oceans’ (1985) 28 *German Yearbook of International Law* 229, p 256.

¹⁴¹ *Ibid*, p 257.

¹⁴² *Ibid*, p 257.

¹⁴³ *Ibid*, p 257.

¹⁴⁴ *Ibid*, p 257.

In addition to the right to lay submarine cables and pipelines, according to Article 58(1), states also enjoy ‘other internationally lawful uses of the sea related to this freedom’, which for example include their servicing and repair.¹⁴⁵ Further, while Article 79(1) does not refer to the repair and maintenance of submarine cables, it has been argued that ‘the rest of the provisions contained in Article 79 appear to assume that the right to lay submarine cables includes the right to maintain and repair them’.¹⁴⁶ It follows from this, that in addition to the freedom to lay submarine cables and pipelines, states also enjoy a number of rights related to this freedom. The question is therefore whether these related rights also include the use of underwater surveillance equipment to protect these.

It follows from Rule 67 of the Oslo Manual on Select Topics of the Law of Armed Conflict, that ‘states having laid submarine cables or pipelines, or whose nationals have laid and operate such cables and pipelines, are entitled to take protective measures with a view to preventing or terminating any harmful interference’.¹⁴⁷ This rule does not concern an issue relating to the Law of Armed Conflict but is a reference to the general Law of the Sea. The commentary to the rule does not mention anything concerning the use of surveillance equipment or in any way elaborate upon which protective measures may be taken to protect the submarine cables and pipelines. However, the rule does support the view that the right to lay submarine cables and pipelines does entail a right to take measures to protect them. The question is, hereafter, to what extent a state may take such measures.

As described earlier, the right of a state to lay submarine cables and pipelines in the EEZ is limited as, according to Article 58(3), it must be exercised with due regard for the rights and duties of the coastal State. The rights and duties of the coastal State refer to the rights and duties contained in Article 56, namely rights over the exploration and exploitation of living and non-living resources, other economic resources such as the production of energy from water, currents and winds, jurisdiction over artificial islands, installations and structures, jurisdiction over MSR and jurisdiction over the protection and preservation of the marine environment.¹⁴⁸ Conversely, according to Article 56(2), the coastal State, in exercising its rights and performing its duties in the EEZ, shall have due regard for the rights and obligations of other states. As has

¹⁴⁵ R Churchill, V Lowe and A Sander, n 49, p 285.

¹⁴⁶ DR Burnett, R Beckman and TM Davenport, n 127, p 79.

¹⁴⁷ Y Dinstein and AW Dahl, n 34, p 61.

¹⁴⁸ DR Burnett, R Beckman and TM Davenport, n 127, p 80

been described in earlier sections of the thesis, disagreement exists concerning the legality of intelligence gathering within the EEZ of another state. Among other issues, this disagreement relates to whether intelligence gathering is in accordance with the requirement for due regard in Article 58(3), and whether intelligence gathering constitutes other internationally lawful uses of the seas in accordance with Article 58(1).

This means that the question of whether a state is allowed to use underwater surveillance equipment to improve the security of cables and pipelines laid in the EEZ of another state can not be answered by merely examining the provisions of the LOSC concerning cables and pipelines. The answer to this question also warrants an examination of the provisions concerning the rights and duties of the coastal State and other states within the EEZ, and the duties of both the coastal State and the other state to have due regard for the rights and obligations of the other. This closer examination of the rights and duties of the coastal states and other states within the EEZ, and the balancing of these against each other in relation to the use of underwater surveillance equipment will be undertaken in a later section specifically concerning the EEZ.

5 The individual maritime zones

5.1 The territorial sea, archipelagic waters and international straits

It follows from Article 2(1) that ‘the sovereignty of a coastal State extends beyond its land territory and internal waters, and in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea’. It further follows from Article 2(2) that ‘this sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil’. The territorial sea is thus subject to the sovereignty of the coastal State, with the primary limitation to the sovereignty of the coastal State being that foreign states enjoy the rights of innocent passage.¹⁴⁹ With regard to straits used for international navigation, it follows from Article 34 that ‘the regime of passage through straits used for international navigation established in Part III of the Convention shall not in other respects affect the legal status of the

¹⁴⁹ R Churchill, V Lowe and A Sander, n 49, p 148; N Klein *Maritime Security and the Law of the Sea* (Oxford University Press 2011) p 216. The only other possible limitation to coastal State sovereignty is ‘special rights specifically established in a particular area of territorial sea’. From R Churchill, V Lowe and A Sander, n 49, p 148. These specifically established special rights are not relevant to consider further in this thesis which examines the use of underwater surveillance equipment under the Law of the Sea in general.

waters forming such straits or the exercise by the states bordering the straits of their sovereignty or jurisdiction over such waters and their airspace, bed and subsoil'. It follows from this that straits used for international navigation constitute areas of territorial sea subject to the same degree of coastal State sovereignty with the exception that other states, in addition to the right of innocent passage, also enjoy the right of transit passage.

With regard to archipelagic waters, it also follows from Article 49 that the sovereignty of an archipelagic State extends to the archipelagic waters. This sovereignty is 'subject to the navigational rights of all other states and to various obligations owed by an archipelagic State to a limited group of other states'.¹⁵⁰ These navigational rights that other states enjoy in archipelagic waters are innocent passage and archipelagic sea lanes passage.¹⁵¹ The various obligations that archipelagic States owe to other states are mentioned in Article 51 and relates to traditional fishing rights and existing submarine cables.¹⁵²

As has been mentioned earlier, the use of underwater surveillance equipment for security and military purposes might be considered as intelligence collection. In accordance with Article 19(2)(c), 'passage of a foreign ship shall be considered to be prejudicial to the peace, good order or security of the coastal State' if it engages in 'any act aimed at collecting information to the prejudice of the defence or security of the coastal State'.

At the same time it has been suggested that 'vessels engaged in innocent passage are entitled to collect certain operational information to facilitate their transit'.¹⁵³ Mentioned as such 'operational information' that may be collected is 'information about the maritime environment, including weather and oceanographic characteristics, such as currents and tides, land features, shoals and reefs, other ships in the area, shipping traffic patterns, and harbors and roadsteads'.¹⁵⁴ It is further added, that even though intelligence collection is not permitted in innocent passage 'even active collections such as radar and sonar emissions, are permissible if they are essential for safe transit through the territorial sea but may not be employed to learn about the operational forces of the coastal State'.¹⁵⁵ It follows from this that while activities

¹⁵⁰ R Churchill, V Lowe and A Sander, n 49, p 192.

¹⁵¹ LOSC, Art 52 and 53; R Churchill, V Lowe and A Sander, n 49, p 192.

¹⁵² R Churchill, V Lowe and A Sander, n 49, p 203-205.

¹⁵³ J Kraska, n 97, p 620.

¹⁵⁴ Ibid, p 620.

¹⁵⁵ Ibid, p 621.

aimed at ‘collecting information to the prejudice of the defence or security of the coastal State’ are not allowed while in innocent passage some extent of information collection, including by sonar, might be allowed.

While the use of underwater surveillance equipment might be considered as intelligence gathering, the *data* collected from the surveillance equipment is at the same time comparable to the information about the maritime environment, that was mentioned as data that may be observed while in innocent passage. However, the scope of the thesis is the placement of stationary surveillance equipment on the seabed or in the water column. The use of this type of surveillance equipment does not relate to navigation and it will not in any way infringe on the right of other states to innocent passage if a coastal State denies other states the use of underwater surveillance equipment within its territorial sea.

It is therefore the view of this thesis that the coastal State, by virtue of its sovereignty in the territorial sea, has the right to prohibit the use of underwater surveillance equipment by other states in the territorial sea, and that the coastal State may remove or destroy any surveillance equipment that it might find deployed in the territorial sea.¹⁵⁶ The same applies to the specific parts of territorial sea that constitute straits used for international navigation, and to archipelagic waters, which are subject to the sovereignty of the state bordering the strait and the archipelagic State respectively. The denial of the use of underwater surveillance equipment for security and military purposes does not interfere with the navigational rights of transit passage or archipelagic sea lanes passage. It further does not interfere with any of the obligations that an archipelagic State might owe to other states in accordance with Article 51. Naturally, in reality the coastal State might not be aware of the use of surveillance equipment within the territorial sea or archipelagic waters. However, this fact does not affect the right of the coastal State to prohibit the use of such equipment within the territorial sea and archipelagic waters.

By virtue of its sovereignty, the coastal State also enjoys the right to itself use underwater surveillance equipment for security and military purposes within the territorial sea, including straits used for international navigation. Likewise, an archipelagic State enjoys this right in its archipelagic waters. This is also reflected in Rule 61 of the Oslo Manual on Select Topic of the Law of Armed Conflict. It follows from this rule, that ‘[with] due regard for the rights of other

¹⁵⁶ The thesis will not consider issues relating to sovereign immunity or the status of the surveillance equipment as foreign governmental property.

States, coastal States are entitled to install, operate and maintain undersea systems and devices, whether military or civilian in nature, in their territorial sea, continental shelf and EEZ'. This rule does not concern an issue relating to the Law of Armed Conflict, but is rather a reference to the general Law of the Sea. In the case of the territorial sea, it is recalled that the only right of other States, which the coastal State's use of surveillance equipment need to have due regard for, is the right of innocent passage. This thesis argues that the mere use of underwater surveillance equipment by the coastal State, without any accompanying restrictions on navigation, cannot realistically be imagined conducted in a way where it violates the right of other states of innocent passage. The same applies to archipelagic sea lanes passage and the various other rights owed to other states within archipelagic waters.

5.2 The EEZ

5.2.1 Rights and duties of the coastal State and other states in the EEZ

Concerning the use of surveillance equipment by other states, it follows from Rule 62 of the Oslo Manual on Select Topics of the Law of Armed Conflict that 'subject to the coastal States' rights (including its rights to exercise jurisdiction and its rights regarding MSR) and with due regard to the rights of other states, all states are entitled to install, operate and maintain undersea systems and devices for data collection and survey activities, whether military or civilian in nature, on the continental or in the EEZ of other states'.¹⁵⁷ This rule does also not concern an issue relating to the Law of Armed Conflict, but is again a reference to the general Law of the Sea. From the commentary to the rule it follows that generally, other states than the coastal State may install and operate such systems in the EEZ of other states.¹⁵⁸

It follows from this that foreign states are entitled to use systems and devices for data collection within the EEZ of another state, including for military purposes, subject to the rights of the coastal State. Thus, to clarify the possibility to use underwater surveillance equipment within the EEZ the rights and duties of the coastal State and other states within the EEZ need to be examined.

The EEZ has been described as *sui generis* with its own distinctive regime which combines characteristics of the territorial sea and the high seas.¹⁵⁹ In accordance with Article 56(1)(a),

¹⁵⁷ Y Dinstein and AW Dahl, n 34, p 56.

¹⁵⁸ Ibid, p 56.

¹⁵⁹ DR Rothwell and T Stephens, n 19, p 87; R Churchill, V Lowe and A Sander, n 49, p 262.

the coastal State has ‘sovereign rights in the EEZ for the purpose of exploring and exploiting, conserving and managing, of the living and non-living natural resources of the seabed and subsoil and the superjacent waters, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds’. Further, in accordance with Article 56(1)(b), the coastal State has jurisdiction with regard to the establishment and use of artificial islands, installations and structures, MSR and the protection and preservation of the marine environment.

With regard to the rights and duties of *other* states within the EEZ it follows from Article 58(1) that all states enjoy, ‘subject to the relevant provisions of the Convention, the freedoms referred to in Article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships, aircraft and submarine cables and pipelines and compatible with other provisions of this Convention’.

The use of underwater surveillance equipment for security and military purposes, that is the scope of this thesis, does *not* include the use of the equipment for activities that relate to the exploration and exploitation of neither the living nor non-living resources of the EEZ.¹⁶⁰ Likewise, the sovereign rights of the coastal State over other activities for the economic exploitation of the EEZ is not relevant for the access of foreign states to use underwater surveillance equipment within the EEZ. Underwater surveillance equipment can be imagined to be used to increase security of offshore structures such as oil rigs and wind farms. However, as these structures are themselves subject to the jurisdiction of the coastal State, this scenario is not relevant in relation to a discussion of the right for foreign states to use surveillance equipment within the EEZ.¹⁶¹

¹⁶⁰ This also applies to cases where the surveillance equipment is used to increase the security of oil and gas pipelines that *transit* the EEZ and are laid by a foreign state in accordance with the LOSC regime for cables and pipelines, as the laying of such pipelines does not relate to the exploitation of the natural resources of the “transit” EEZ. In cases where the pipelines are used in connection with the exploitation of the natural resources of the EEZ, however, both the operation of the pipelines and the use of underwater surveillance equipment to increase the security of these fall within the sovereign rights of the coastal State.

¹⁶¹ Scenarios can be imagined where companies owned by foreign governments are permitted to construct and operate oil rigs, wind farms or other installations or structures for the exploitation of the natural resources or other economic exploitation of the EEZ. In these cases, the construction and operation of the installations or structures as well as the use of underwater surveillance equipment to increase the security of these fall within the sovereign rights of the coastal State.

In section 2.2.4 it was concluded that the use of underwater surveillance equipment for security and military purposes does not constitute MSR, and the coastal State can therefore not assert jurisdiction over this activity or require the prior consent for the use by a foreign state on this basis.

As mentioned in the delimitation of the scope in section 1.2, the legal implications of the underwater surveillance equipment being used for the purported purpose of protection and preservation of the marine environment, in cases where the equipment is used to increase security of oil and gas pipelines, is outside the scope of this thesis. This means that as regards the use of underwater surveillance equipment for the purposes that are within the scope of this thesis, the coastal State's jurisdiction in the EEZ over the protection and preservation of the marine environment is not relevant.

Further, in section 3.2 it was concluded that the use of underwater surveillance equipment by one state within the EEZ of another state is not a violation of the reservation of the seas for peaceful purposes. It is therefore the view of this thesis that the coastal State can not legitimately resist the use of underwater surveillance equipment within its EEZ on this basis.

Furthermore, it is recalled that in section 4.2 it was concluded that underwater surveillance equipment used for security and military purposes and placed on the seabed can in some cases fall within the regime for submarine cables and pipelines in the LOSC depending on the specific characteristics of the equipment in question. This has the implication that such surveillance equipment that qualifies as 'submarine cables' within the meaning of the LOSC is covered by the freedom of all states to lay such cables in the EEZ in accordance with Article 58(1). However, when exercising this right to lay submarine cables the state shall have due regard for the rights and duties of the coastal State in the EEZ in accordance with Article 58(3). Further, in section 4.3, it was concluded that the answer to whether states are allowed to use underwater surveillance equipment to improve the security of cables and pipelines laid in the EEZ of another state cannot be answered solely by the provisions concerning cables and pipelines, but warrants an examination of the rights and duties of the coastal State and other states within the EEZ.

Finally, in accordance with Article 56(1)(c) the coastal State has in the EEZ 'other rights and duties provided for in this Convention'. On the basis of these above mentioned conclusions, this section will in the following examine the remaining relevant parts of the regime of the EEZ

to determine to what extent the use of underwater surveillance equipment within this maritime zone is in accordance with the Law of the Sea and whether other grounds exist for the coastal State to legitimately oppose the use by other states of such equipment within the EEZ. The section firstly considers the question of whether the underwater surveillance equipment constitutes installations and structures, which, in accordance with Article 56(1)(a) and Article 60 is under the jurisdiction of the coastal State in the EEZ. Secondly, the section will consider the concept of ‘other internationally lawful uses of the sea’ mentioned in Article 58(1). Hereafter, the section will consider the due regard requirements of both the coastal State and other states in Article 56(2) and Article 58(3) respectively. The section will then consider the implications of Article 59 concerning residual rights. Finally, the section will consider the use of underwater surveillance equipment in the EEZ by the coastal State.

5.2.2 Installations and structures

According to Article 60(1) the coastal State has in the EEZ ‘the exclusive right to construct and to authorize and regulate the construction, operation and use of [...] installations and structures for the purposes provided for in Article 56 and other economic purposes’¹⁶², as well as ‘installations and structures which may interfere with the exercise of the rights of the coastal State in the zone’¹⁶³. In the literature it has been mentioned that one approach for justifying the use of sonar monitoring and surveillance systems, such as acoustic array systems, for military purposes is to consider the systems as installations and structures that does not require the consent of the coastal State under Article 60.¹⁶⁴ It is therefore relevant to consider whether the underwater surveillance equipment could be considered installations and structures within the meaning of Article 60 and thus subject to the jurisdiction of the coastal State.

It follows from the wording of Article 60 that the coastal State has jurisdiction *inter alia* over installations and structures for the purposes provided for in Article 56 and other economic purposes. Of relevance in this context, it has been mentioned in the literature that Article 60(1)(b) only extends coastal State jurisdiction over installations and structures with an economic purpose, and that proposals during the drafting of the LOSC ‘to make all installations, including military installations constructed by other states, subject to Article 60 were

¹⁶² LOSC, Art 60(1)(b).

¹⁶³ LOSC, Art 60(1)(c).

¹⁶⁴ M Hayashi, n 86, p 129.

rejected'.¹⁶⁵ Of further relevance, in this context it has been argued that military purposes are clearly distinct from resource-related and other economic purposes, and that military purposes can never be interpreted to fall under the economic purposes clause.¹⁶⁶ As mentioned in the previous section, the security and military purposes, that are the scope of this thesis, does not relate to exploration and exploitation of natural resources or other economic purposes. This indicates that the use of underwater surveillance equipment for security and military purposes is not subject to the jurisdiction of the coastal State by virtue of Article 60.

Of further relevance in this context, it has been argued that the language of Article 60 is 'intentionally restrictive for the coastal State, referring to the rights in Article 56 and thereby omitting from coastal state purview the emplacement of foreign military installations and structures', such as 'SOSUS and other military devices'.¹⁶⁷ In further support of this view it has been argued that the provision in Article 60 does not preclude the deployment of listening or other security related devices.¹⁶⁸

Based on these observations, this thesis adopts the view that underwater surveillance equipment, used for security and military purposes, is not subject to coastal State jurisdiction by virtue of Article 60(1)(b), as the use does not relate to economic purposes.

In accordance with Article 60(1)(c), the coastal State also has jurisdiction over installations and structures which may interfere with the exercise of the rights of the coastal State in the EEZ. It follows from this that to the extent that the employment of underwater surveillance equipment interferes with the sovereign rights assigned to the coastal State in Article 56(1), including sovereign rights for exploring and exploiting living and non-living resources, the equipment is subject to coastal State jurisdiction. In this context the view has been presented that 'certain types of fixed acoustic ASW array systems, certain large floating or moored sonobuoys [...] are installations within the meaning of Article 60' but that 'they can be lawfully implaced if they do not interfere with the exercise of the recourse related rights of the coastal State in the EEZ

¹⁶⁵ DR Rothwell and T Stephens, n 19, p 94-95.

¹⁶⁶ E Rauch, n 140, p 254.

¹⁶⁷ J Kraska, n 50, p 280-281.

¹⁶⁸ JA Roach, n 39, 163.

and on the continental shelf'.¹⁶⁹ It is further specified that 'the coastal State does not have the right to inspect, damage, destroy or remove these military installations'.¹⁷⁰

The use of underwater surveillance equipment for security and military purposes does not by definition interfere with the exercise of the rights of the coastal State. However, the surveillance equipment can be imagined deployed in a way, where it in practice interferes with the coastal State's exercise of its rights. If for example a large system of floating sonar buoys is deployed in an important fishing area limiting the possibilities to fish in the area, or if a sonar cable is placed on the seabed in a location, where it obstructs exploitation of oil or gas fields, the surveillance equipment could arguably be said to interfere with the exercise by the coastal State of its rights within the EEZ. In these scenarios the underwater surveillance equipment could be argued to be subject to the jurisdiction of the coastal State by virtue of Article 60(1)(c), meaning that the coastal State has the exclusive right to authorize and regulate the operation and use of the surveillance equipment. However, this does not apply to the use of surveillance equipment for security and military purposes *in general*, and it would have to be assessed on a case-by-case basis, whether the surveillance equipment in question can be said to interfere with the exercise of the rights of the coastal State in the EEZ. Further, this approach in which the use of surveillance equipment by other states within the EEZ is regarded as permitted unless it interferes with the rights of the coastal State, can just as relevantly be seen as a question of whether due regard is shown for the rights of the coastal State in accordance with Article 58(3).

An alternative argument in support of the view that sonar surveillance systems are not subject to coastal State jurisdiction is 'that such systems are "devices" and not "installations", which is a narrower concept and therefore not among those objects which the coastal State has the exclusive right to construct and operate in its EEZ'.¹⁷¹ This argument, as opposed to the earlier arguments, does not center around the *purpose* of the use of the surveillance systems, but rather around the *characteristics* of the equipment itself. With the conclusion that the use of underwater surveillance equipment for security and military purposes is not within the scope of Article 60, as it does not serve an economic purpose, it seems to be of no importance to conclude whether the surveillance equipment constitutes 'devices' rather than 'installations' and if the equipment is thus also exempt from coastal State jurisdiction under Article 60 because of this

¹⁶⁹ E Rauch, n 140, p 257

¹⁷⁰ Ibid, p 257.

¹⁷¹ M Hayashi, n 86, p 132.

distinction. Admittedly, the exclusion of ‘devices’ from the scope of Article 60 can be of importance for underwater surveillance equipment that interferes with the exercise of the rights of the coastal State in accordance with Article 60(1)(c), since being neither installation nor structure they would fall outside the scope of the provision. However, the state using the underwater surveillance equipment is under an obligation to have due regard for the rights of the coastal State in the EEZ in accordance with Article 58(3). It is therefore argued that the distinction is not of any practical importance as the due regard obligation applies regardless of whether the surveillance equipment constitutes installations under Article 60 or not.

5.2.3 Other internationally lawful uses of the sea

It follows from Article 58(1) that in the EEZ all states enjoy the freedoms referred to in Article 87 and ‘other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships, aircraft and submarine cables and pipelines’. In this context, it has been mentioned in the literature, that another approach for justifying the use of sonar monitoring or surveillance systems in the EEZ has been ‘to interpret them as other internationally lawful uses of the sea’.¹⁷² Further, it has been mentioned that the question of whether intelligence gathering activities are permitted within the EEZ centers on whether it constitutes one of those ‘other internationally lawful uses of the sea’.¹⁷³ Intelligence gathering is mentioned here, as the use of underwater surveillance equipment, as mentioned in section 3.2, might be considered to constitute intelligence collection. The question is hereafter whether the use of underwater surveillance equipment constitutes an internationally lawful use of the seas as mentioned in Article 58(1).

As concluded in section 4.2 the underwater surveillance equipment placed on the seabed and used for security and military purposes can in some cases fall within the regime for submarine cables in the LOSC, depending on the specific characteristics of the equipment in question. In these cases it does not seem relevant to categorize the use of the surveillance equipment as ‘other internationally lawful uses of the sea’ as the laying of the submarine equipment would already fall under the high seas right to lay submarine cables which is explicitly referred to in Article 58(1).

¹⁷² M Hayashi, n 86, p 129.

¹⁷³ N Klein, n 149, p 219.

However, in the scenario that was dealt with in section 4.3 where underwater surveillance equipment is used to increase the security of submarine cables and pipelines the question arises whether the *use* of the surveillance equipment constitutes one of the other internationally lawful uses of the sea associated with the operation of submarine cables and pipelines as mentioned in Article 58(1). Further, the question arises whether the use of underwater surveillance equipment, that does not itself constitute a submarine cable, and that is used for security and military purposes without any connection to other submarine cables and pipelines, constitutes other internationally lawful uses of the sea.

Specifically concerning this issue in relation to equipment, it has been suggested ‘that there appears to be broad agreement that the use of *devices, installations and structures attached to the seabed*, such as sonar monitoring or surveillance systems and navigational aids, are regarded as “other internationally lawful uses”’.¹⁷⁴ Concerning intelligence gathering, which as mentioned the use of underwater surveillance equipment for security and military purposes might be viewed as, it has been suggested that ‘traditionally, intelligence gathering activities have been regarded as part of the exercise of freedom of the high seas and therefore, through Article 58(1), lawful in the EEZ as well’.¹⁷⁵ These observations suggest that the use of underwater surveillance equipment by foreign states, including for security and military purposes, which might be considered intelligence gathering, is lawful in the EEZ as an ‘other internationally lawful use of the sea’.

In connection with the view above concerning the lawfulness of intelligence gathering activities in the EEZ, it is mentioned that the view that these are lawful is being challenged by new, highly intrusive SIGINT and EW capabilities.¹⁷⁶ These are the same type of activities as were discussed in section 3.2 concerning the question of whether the use of underwater surveillance equipment is peaceful. As was discussed in section 3.2, the use of the underwater surveillance equipment, that is the scope of this thesis, is not comparable to these intrusive SIGINT and EW activities that intercept and disrupt communication or other electromagnetic emissions from the coastal State. The *passive* collection by the surveillance equipment of acoustic or other data from the marine environment is more comparable to a vessel navigating with sonar, radar or other systems that monitors the surroundings, than it is to these intrusive SIGINT and EW

¹⁷⁴ M Hayashi, n 86, p 136.

¹⁷⁵ *Ibid*, p 130 and 136.

¹⁷⁶ *Ibid*, p 130.

activities. Vessels of foreign states navigating while operating sonar and radar systems are undoubtedly lawful within the EEZ by virtue of the freedom of navigation established in Article 58(1).

In addition to this observation, section 5.2.2 concluded that the use of underwater surveillance equipment for security and military purposes is not subject to coastal State jurisdiction under Article 60 to the extent that it does not interfere with the exercise by the coastal State of its rights in the EEZ. Based on these observations it is the view of this thesis that the use of underwater surveillance equipment for security and military purposes by one state within the EEZ of another state constitutes one of the ‘other internationally lawful uses of the sea’ mentioned in Article 58(1). This means that foreign states have the right to use underwater surveillance equipment for security and military purposes within the EEZ of another state to the extent that the use is in accordance with the due regard clause in Article 58(3). The concept of due regard will therefore be discussed in the following section.

5.2.4 Due regard

It follows from Article 56(2) that in exercising its rights and performing its duties in the EEZ the coastal state shall have due regard to the rights and duties of other states. In addition, it follows from Article 58(3) that in exercising their rights and performing their duties in the EEZ, states shall have due regard to the rights and duties of the coastal State.

It has been described that ‘[the] concept of “due regard” balances the obligations of both the coastal States and other States within the EEZ’.¹⁷⁷ Further, the concept of due regard influences the extent of permissible military activities in the EEZ.¹⁷⁸

It follows from the wording of the provision that it is the *rights and duties* of the coastal State that other states shall have due regard for. This implies that foreign states operating within the EEZ are not obligated to have due regard for any sensitivities of the coastal State that are not based on sovereign rights or jurisdiction assigned to the coastal State in accordance with Article 56. In this context, it has been argued that the two due regard requirements are to be interpreted in the way ‘that the sovereign rights and jurisdiction of the coastal state are superior only in

¹⁷⁷ JA Roach, n 39, p 163.

¹⁷⁸ M Frostad, ‘Military uses of the sea in peace and during armed conflict’ in N Matz-Lück, Ø Jensen and E Johansen (eds), *The Law of the Sea: Normative Context and Interactions with other Legal Regimes* (Routledge 2022) p 244.

matters pertaining to the rights granted to it in the EEZ'.¹⁷⁹ As was discussed in section 5.2.1 and 5.2.2, the use of underwater surveillance equipment for security and military purposes does not relate to any of the themes to which the coastal State is assigned sovereign rights or jurisdiction in Article 56(1).

The thesis concerns the use of underwater surveillance equipment for security and military purposes, including for example the use of the equipment to monitor the movement of surface vessels or submarines of other states. As has been described earlier in the thesis, the coastal State might be sensitive to the use of underwater surveillance equipment within its EEZ, which is again exemplified by the sensitivity of the data collected by the LoVe Ocean Observatory. The question is therefore whether this security concern of the coastal State has the implication that the use of underwater surveillance equipment by a foreign state in the EEZ is not an expression of due regard for the rights of the coastal State.

The sovereign rights and jurisdiction assigned to the coastal State in Article 56(1) do not suggest that the coastal State enjoys any security related rights or jurisdiction in the EEZ. The provision mentions only sovereign rights relating to natural resources and other activities for the economic exploitation and exploration of the zone, and jurisdiction with regard to artificial islands, installations and structures, MSR and the protection and preservation of the marine environment. Of relevance in this context, it has been argued that '[the] architecture of the EEZ makes it clear that the coastal State does not have a higher security interest in the EEZ than does the international community'.¹⁸⁰ To support this view, it is mentioned that proposals during the negotiations of the LOSC 'to include residual coastal State security interests in the EEZ were considered and rejected'.¹⁸¹ It is specified that '[this] is not to say that the coastal State is not more interested in what happens in the EEZ from a security perspective, but [...] it does not enjoy additional security related rights as against the international community in the zone'.¹⁸² Further, reference is made to the *M/V Saiga* case where the International Tribunal for

¹⁷⁹ J Kraska, n 50, p 266.

¹⁸⁰ Ibid, p 244.

¹⁸¹ Ibid, p 244.

¹⁸² Ibid, p 244.

the Law of the Sea (ITLOS) interpreted the authority of the coastal State in the EEZ and found the zone to be ‘an area of purely economic interest for the coastal State’.¹⁸³

Based on these arguments - that the wording of Article 56(1) does not suggest any security related rights or jurisdiction of the coastal State in the EEZ, that proposals during the negotiation of the LOSC to include coastal State security interests in the EEZ were rejected, and that ITLOS has found the EEZ to be an area of purely economic jurisdiction - it is concluded that the coastal State does not enjoy security related rights or jurisdiction in the EEZ. Further, it is the view of this thesis that the use of underwater surveillance equipment for security and military purposes within the EEZ by a foreign State is not generally in violation of the obligation for states to have due regard for the rights and duties of the coastal State in the EEZ. This conclusion is based on the observations that the coastal State does not enjoy security related rights of jurisdiction in the EEZ, and that the use of underwater surveillance equipment does not relate to any of the themes to which the coastal State is actually assigned sovereign rights and jurisdiction in the EEZ.

That is not to say that the use of underwater surveillance equipment by a foreign state within the EEZ cannot in specific circumstances violate the due regard clause in Article 58(3). As examples of military activities in the EEZ by foreign states that would show sufficient due regard for the coastal State has been mentioned weapons testing or placement of mines that could harm natural resources in the zone.¹⁸⁴ In this light, it is not likely that the mere placement of underwater surveillance equipment in the EEZ could be viewed as not having due regard for the rights and duties of the coastal State. However, it cannot completely be ruled out that the surveillance equipment could in *specific* circumstances be deployed in a manner where it does not have due regard for the rights of the coastal State, for example in relation to fishing or extraction of oil and gas resources. This is comparable to the discussion in section 5.2.2 on whether surveillance equipment can interfere with the exercise by the coastal State of its rights within the EEZ making the equipment subject to coastal State jurisdiction under Article 60(1)(c). Whether this scenario, where the surveillance equipment impede on the rights of the coastal State, is categorized as a question of the foreign state not having due regard for the rights of the coastal, or a question of the coastal State having jurisdiction over the equipment

¹⁸³ J Kraska, n 50, p 244, with reference to *The M/V “Saiga” (No. 2) case (Saint Vincent and the Grenadines v. Guinea)* (Judgment) [1999] ITLOS Rep 1999 p. 10.

¹⁸⁴ M Frostad, n 178, p 244; M Hayashi, n 86, p 133.

by virtue of Article 60(1)(c), will ultimately depend on whether the equipment constitutes *structures and installations* as mentioned in Article 60. It is the view of this thesis that this distinction will ultimately depend on an assessment of the specific equipment in question in the specific case, as the proportions of the surveillance equipment can range from a single sonobuoy moored to the seabed to an expansive network that spans over hundred of meters or more. This question can therefore not be answered generally, but will need to be assessed on a case to case basis.

5.2.5 Residual rights

It follows from Article 59 that '[in] cases where the Convention does not attribute rights or jurisdiction to the coastal State or to other States within the [EEZ], and a conflict arises between the interests of the coastal State and any other state or states, the conflict should be resolved on the basis of equity and in the light of all the relevant circumstances, taking into account the respective importance of the interests involved to the parties as well as to the international community as a whole'.

In the sections above it was concluded that foreign states have the right to use underwater surveillance equipment for security and military purposes within the EEZ of another state to the extent that it has due regard for the rights and obligations of the coastal State. It was further concluded that the use is generally not a violation of the requirement for due regard. In this section it will briefly be discussed whether the provision in Article 59 has any implications on the use of surveillance equipment by foreign states within the EEZ.

The term 'residual rights' have been used to refer to 'rights or jurisdiction with respect to a matter in the EEZ in cases where the Convention does not specifically attribute them to either the coastal State or other States'.¹⁸⁵ Since it has been concluded that the use of underwater surveillance equipment constitutes one of the 'other internationally lawful uses of the sea', it can be argued that the right to use surveillance equipment does not technically constitute a 'residual right'. However, as the wording of the LOSC does not mention the use of underwater surveillance equipment, it may still be relevant to consider whether Article 59 has any implications for the right of foreign states to use underwater surveillance equipment.

¹⁸⁵ M Hayashi, n 86, p 127.

Article 59 has been described as ‘a procedural dispute settlement device and has no substantive meaning’.¹⁸⁶ It has further been argued that ‘[the] words of Article 59 suggests that in the case of unattributed rights neither coastal State nor other states are presumed to have priority.’¹⁸⁷ It is however further argued that ‘given the nature of the EEZ as a coastal state economic zone, the Article 59 could conceivably be interpreted so that unattributed economic rights would usually fall to coastal States, while unattributed rights of a non-economic nature will fall to other states’.¹⁸⁸ This aligns with the views discussed above of the EEZ being a zone of purely economic interest for the coastal State.

Considering that the wording Article 59 does not give priority to neither the coastal State nor other states, it is the view of this thesis that the provision does not have any implications on the conclusion that foreign states have the right to use underwater surveillance equipment within the EEZ. Were the use of underwater surveillance equipment to be considered as a ‘residual right’, the assessment of the residual rights would likely grant it to the foreign state wishing to use such equipment within the EEZ.. This result further aligns with the view that attributed rights of a non-economic nature will fall to the other state as opposed to the coastal State.

5.2.5 Use of surveillance equipment in the EEZ by the coastal State

In the previous sections it was concluded that foreign states generally have the right to use underwater surveillance equipment within the EEZ of a coastal State. Naturally, the coastal State also enjoys the right to use underwater surveillance equipment within its own EEZ. This is also demonstrated by Rule 61 of the Oslo Manual on Select Topics of the Law of Armed Conflict mentioned in section 5.1 concerning the territorial sea. According to the rule ‘[with] due regard for the rights of other states, coastal States are entitled to install, maintain and operate undersea systems and devices, whether military or civilian in nature, in their territorial sea, continental shelf and EEZ’.¹⁸⁹ As was mentioned in section 5.1 the rule is a reference to the general Law of the Sea as opposed to an issue relating to the Law of Armed Conflict. The commentary to the rule describes that such systems can ‘also serve a wide variety of military and security purposes’ and that ‘sensors and other devices have for a long time been used for

¹⁸⁶ E Rauch, n 140, p 255.

¹⁸⁷ DR Rothwell and T Stephens, n 19, p 91.

¹⁸⁸ Ibid, p 91.

¹⁸⁹ Y Dinstein and AW Dahl, n 34, p 55.

detection of submarines and for the protection of certain parts of the coastline against enemies, criminals or terrorists'.¹⁹⁰

The use by the coastal State of underwater surveillance equipment within its EEZ shall have due regard for the rights and duties of other states in accordance with Article 56(2). These rights of other states, that the coastal State's use of surveillance equipment shall have due regard for, are outlined in Article 58(1) and include 'the freedoms referred to in Article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships, aircraft and submarine cables and pipelines and compatible with other provisions of this Convention'. This thesis argues that it will be next to impossible to argue that the mere use of underwater surveillance equipment by the coastal State in the EEZ does not have due regard for the freedom of other states of navigation, overflight, the laying of submarine cables and pipelines, and other internationally lawful uses of the sea, in cases where the coastal state does not in other ways impede these freedoms.

5.3 The continental shelf

It follows from Article 78(1) that '[the] the rights of the coastal State over the continental shelf do not affect the legal status of the superjacent waters'. Article 78(1) has the implication that the water column superjacent to the continental shelf will be governed by either the regime for the EEZ, or the regime for the high seas in cases where the continental shelf extends beyond 200 nm from the baselines or where the coastal State in question have not claimed an EEZ or has claimed an EEZ that does not extend 200 nm from the baselines. The use of underwater surveillance equipment in connection with the continental shelf will therefore, in addition to the regime for the continental shelf, also be subject to either the regime of the EEZ or the high seas, which are discussed in the previous and the next section respectively. The purpose of this section is therefore only to examine whether the regime for the continental shelf has any implications for the right of foreign states to use underwater surveillance equipment where the surveillance equipment is placed on or in connection with the continental shelf.

Coastal State rights over the continental shelf are outlined in Article 77(1) according to which '[the] coastal State exercises over the continental shelf sovereign rights for the purpose of

¹⁹⁰ Y Dinstein and AW Dahl, n 34, p 55.

exploring it and exploiting its natural resources. As also follows from the wording of the provision, it has been described that ‘coastal state rights over the continental shelf [...] are limited to the exploration and exploitation of its natural resources’ and ‘the [continental] shelf is not regarded as part of the territory of the coastal State’.¹⁹¹ The use of underwater surveillance equipment for security and military purposes does not relate to exploration and exploitation of the natural resources of the continental shelf.

It further follows from Article 80 that ‘Article 60 applies *mutatis mutandis* to artificial islands, installations and structures on the continental shelf’. As seen the wording of Article 80 refers to Article 60 concerning the EEZ which was discussed in section 5.2.2. It has therefore also been described that ‘[the] rights of the coastal State over the continental shelf in accordance with Article 80 of the LOSC includes the right to construct and authorize the use of artificial islands and installations and structures used for economic purposes (or which may interfere with economic purposes)’.¹⁹² It has further been stated that the rights in Article 80 are the same as the rights in Article 60.¹⁹³ As was discussed at length in section 5.2.2, coastal State jurisdiction over installations and structures does not extend to underwater surveillance equipment used for security and military purposes, save for scenarios where the use interfere with the exercise of the rights of the coastal State in the EEZ and where at the same time, based on the specific characteristics of the equipment, it qualifies as ‘installations and structures’ within the meaning of Article 60. The same is therefore the case concerning coastal State jurisdiction over installations and structures on the continental shelf in accordance with Article 80.

As was concluded in section 4.2, underwater surveillance equipment used for security and military purposes and placed on the seabed can in some cases fall within the regime for submarine cables and pipelines in the LOSC, depending on the characteristics of the specific equipment in question. In these cases, the equipment is subject to the right of other states to lay submarine cables on the continental shelf in accordance with Article 79(1). In accordance with Article 79(2), ‘subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines, the coastal State may not impede the laying or maintenance

¹⁹¹ R Churchill, V Lowe and A Sander, n 49, p 239.

¹⁹² Ibid, p 241.

¹⁹³ JA Roach, n 39, p 183.

of submarine cables and pipelines'. This has the implication that the coastal State may not impede the laying of underwater surveillance equipment that constitutes cables except for cases where the laying interferes with the coastal state's exploration of the continental shelf and exploitation of its natural resources, in which case the coastal State may take reasonable measures. It is further recalled that in accordance with Article 79(3) the delineation of the course for submarine *cables* is not subject to the consent of the coastal State, as opposed to the delineation of the course of submarine *pipelines*. Thus, the coastal State does not enjoy a right to delineate where on the continental shelf underwater surveillance equipment, that falls within the LOSC regime for submarine cables, may be laid.

To sum up the conclusions regarding the continental shelf regime, it can be concluded that the use of underwater surveillance equipment for security and military purposes does not relate to the sovereign rights that the coastal State enjoys over the continental shelf. It can further be concluded that the jurisdiction that the coastal State enjoys over installations and structures on the continental shelf in accordance with Article 80 is concurrent with the jurisdiction the coastal State enjoys over these in the EEZ. Thus, the coastal State only enjoys jurisdiction over underwater surveillance equipment used for security and military purposes to the extent that it both qualifies as 'installations and structures' and interferes with the exercise of the rights of the coastal State. Finally, in the cases where the underwater surveillance equipment qualifies as 'submarine cables' within the meaning of the LOSC, the coastal State may only impede the laying of the equipment subject to its rights to take reasonable measures for the exploration of the continental shelf and the exploitation of its natural resources. The lawfulness of the use by a foreign state of underwater surveillance equipment on the continental shelf also needs to be assessed in accordance with the regime for either the EEZ or the high seas.

5.4 High seas and the Area:

The freedom of the high seas is stipulated in Article 87(1) according to which '[the] high seas are open to all States, whether coastal or land-locked'. It follows from the provision that '[freedom] of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law'. It further follows that the freedoms of the high seas 'comprises, *inter alia*, both for coastal and land-locked States [...] freedom of navigation [...] freedom to lay submarine cables and pipelines [...] freedom to construct artificial islands and other installations under international law'.

As demonstrated by the inclusion of the words “*inter alia*” in Article 87(1) the provision’s listing of high seas freedoms is not exhaustive.¹⁹⁴ The question is therefore whether the use of underwater surveillance equipment for security and military purposes can be considered a freedom of the high seas giving all states the right to use surveillance equipment for these purposes on the high seas.

It follows from Article 88 that ‘[the] high seas shall be reserved for peaceful purposes’. As was mentioned in section 3.2 concerning peaceful uses of the seas it has been argued that the collection of national security and military intelligence is a high seas freedom.¹⁹⁵ This view implies that military intelligence collection on the high seas does not violate the reservation of the high seas for peaceful purposes. Further, the conclusion of section 3.2 is recalled in that the use of underwater surveillance equipment by one state within the EEZ of another state is not a violation of the reservation of the seas for peaceful purposes. This conclusion of the use of underwater surveillance equipment being peaceful applies all the more to the high seas, where the use of the surveillance equipment should not inherently provoke the security interests or sensitivities of any particular coastal State. The reservation of the high seas for peaceful purposes does therefore not prohibit the use of underwater surveillance equipment for security and military purposes.

As concluded in section 4.2, underwater surveillance equipment placed on the seabed may, depending on the specific characteristics of the equipment, fall within the regime for submarine cables and pipelines in the LOSC. In these cases, the laying of surveillance equipment will be subject to the freedom to lay submarine cables in Article 87(1)(c) and Article 112.

In accordance with Article 87(1)(d) construction of artificial islands and other installations is a high seas freedom. As was discussed in relation to the EEZ, underwater surveillance equipment might in some cases, depending on the expanse of the equipment, constitute ‘installations’ which are also mentioned in Article 56(1)(b) and Article 80. In these cases, the use of the surveillance equipment is a freedom of the high seas in accordance with Article 87(1)(d). In the cases where underwater surveillance equipment, because of its limited proportions, does not qualify as ‘installations’ within the meaning of Article 87(1)(d), it is the view of this thesis that

¹⁹⁴ DR Rothwell and T Stephens, n 19, p 164; R Churchill, V Lowe and A Sander, n 49, p 375-377.

¹⁹⁵ J Kraska, n 97, p 605.

the use is still lawful as it is then a less extensive use of the high seas than the construction of installations.

It is therefore concluded that the use of underwater surveillance equipment for security and military purposes is a high seas freedom and that all states can lawfully use underwater surveillance equipment for these purposes on the high seas.

According to Article 87(2) the freedoms of the high seas ‘shall be exercised by all States with due regard for the interest 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’. The due regard requirement ‘means that operations at sea must consider the operations of other States’ and that ‘[one] State may not unduly interfere with other uses of the common space to the extent other users are lawfully exercising their freedom of the seas’.¹⁹⁶ Thus, when using underwater surveillance equipment on the high seas states may not unduly interfere with other lawful uses of the high seas. Though it cannot be categorically rejected that this could happen in certain cases, it is the view of this thesis that it is unlikely that the use of underwater surveillance in the vast ocean area that is the high seas could legitimately be argued to unduly interfere with another state’s exercise of the freedom of the high seas.

The regime for the Area in Part XI of the LOSC concerns activities of exploitation for and exploration of the mineral resources of ‘the seabed, ocean floor and subsoil beyond the continental shelf of the coastal States’.¹⁹⁷ The part of the seabed that constitutes the Area in relation to the exploration and exploitation of mineral resources is at the same time governed by the high seas regime with regard to other matters. This is showcased by the fact that, according to Article 112, ‘[all] states are entitled to lay submarine cables and pipelines on the bed of the high seas beyond the continental shelf’. The LOSC regime for the Area therefore has only limited implications on the use of underwater surveillance equipment on the high seas in cases where the equipment is in contact with the seabed.¹⁹⁸

¹⁹⁶ J Kraska, n 97, p 607.

¹⁹⁷ LOSC, Art. 1(1)(1), 1(1)(3) and 133. See also e.g. DR Rothwell and T Stephens, n 19, p 128-132.

¹⁹⁸ In accordance with Article 87(2) the freedoms of the high seas shall be exercised ‘with due regard for the rights under this Convention with respect to activities in the Area’. It is possible that underwater surveillance equipment could in *specific* circumstances be deployed in a manner where it interferes with exploration or exploitation activities in the Area in a way where it does not show sufficient due regard for these activities. See also especially LOSC, Arts 137, 138 and 147.

6 Conclusion

It can be concluded that the use of underwater surveillance equipment for security and military purposes does not constitute MSR, as it does not have the scientific purpose to increase knowledge of the marine environment and does not have the natural environment as its object. The coastal State does therefore not enjoy any jurisdiction over the use of underwater surveillance equipment on this basis.

It can further be concluded that the use of underwater surveillance equipment by one state within the EEZ of another state is not a violation of the reservation of the seas for peaceful purposes. This conclusion is based on the argument that the use of underwater surveillance equipment does not constitute a sufficient threat to the coastal State nor interferes with the communication or other electromagnetic emissions from the coastal State, comparable to the intelligence collection activities that have been argued to violate the reservation of the oceans for peaceful purposes.

In relation to the regime for submarine cables and pipelines, it can be concluded that underwater surveillance equipment used for security and military purposes and placed on the seabed can in some cases, depending on the characteristics of the specific equipment in question, fall within the regime for submarine cables and pipelines in the LOSC.

Concerning the lawfulness of the use of underwater surveillance equipment within the individual maritime zones, the answer depends on the zone in question. In the territorial sea, including straits used for international navigation, the coastal State, by virtue of its sovereignty, has the right to prohibit the use of underwater surveillance equipment by other states in the territorial sea. The same applies to archipelagic waters which are subject to the sovereignty of the archipelagic State. By virtue of its sovereignty, the coastal or archipelagic State also enjoys the right to itself use underwater surveillance equipment for security and military purposes within the territorial sea or archipelagic waters.

Regarding the EEZ, it can be concluded that the use of underwater surveillance equipment for security and military purposes by a foreign state within the EEZ is generally permitted. The use of underwater surveillance equipment for security and military purposes does not relate to the sovereign rights that the coastal State enjoys in the EEZ in relation to the exploration and exploitation of the living and non-living resources or other activities for the economic

exploitation of the EEZ. The use also does not relate to the jurisdiction that the coastal State enjoys over artificial islands, installations and structures for economic purposes, MSR or the protection and preservation of the marine environment.

However, two possible grounds exist for the coastal State to legitimately oppose the use by other states of underwater surveillance equipment for security and military purposes within the EEZ. Firstly, if the use of the underwater surveillance equipment interferes with the exercise of the rights of the coastal State in the EEZ, the equipment could be argued to fall under the jurisdiction of the coastal State in accordance with Article 60(1)(c) if it constitutes an installation or structure. The second basis for the coastal State to oppose the use of surveillance equipment is based on the obligation of states to have due regard for the rights and duties of the coastal State within the EEZ. It can be concluded that the use of underwater surveillance equipment for security and military purposes does not generally violate the due regard requirement, but it is possible that the use in specific circumstances is not an expression of due regard.

Use of underwater surveillance equipment on the continental shelf will at the same time be governed by the regime of either the EEZ or the high seas. The use of underwater surveillance equipment does not relate to exploration and exploitation of the natural resources of the continental shelf, which are the only sovereign rights the coastal State enjoys over the continental shelf. Generally, the continental shelf regime does not have implications on the use of underwater surveillance equipment that differ from the permitted use in accordance with what follows from either the EEZ or the high seas regimes. However, the coastal State may take reasonable measures to impede the laying of underwater surveillance equipment that constitutes cables in cases where the laying interferes with the coastal state's exploration of the continental shelf and exploitation of its natural resources.

On the high seas the use of underwater surveillance equipment is a high seas freedom enjoyed by all states. However, this freedom shall be exercised with due regard for the interest of other states exercising their freedoms of the high seas.

As described in section 1.1, underwater surveillance equipment may be used to increase the security of submarine infrastructure as well as for intelligence gathering, for example through the monitoring of submarines. As described throughout the thesis, disagreement exists between states concerning the lawfulness of other data collection activities and military activities - such

as hydrographic and military surveying and intelligence collection - particularly within the EEZ. It is likely that the use of underwater surveillance equipment for security and military purposes will also be subject to controversy, in particular due to the fact that such equipment can be multipurpose, meaning that equipment that have been installed to increase the security of submarine cables or pipelines can potentially also provide information that have military significance from a wider area. However, it is the conclusion of this thesis that states may generally use such equipment for these security and military purposes in all parts of the oceans, with the exception of the territorial seas and archipelagic waters of other states, unless consented to by the coastal State.

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