GROOM

Gliders for Research, Ocean Observation and Management

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A. Introduction

I. International Law in a Nutshell

Before dealing with the crucial legal issues of the activities concerned within GROOM, it seems helpful to illustrate how public international law works in general. It is well-known that the international legal system has only little in common with domestic legal systems. The most obvious difference is that no legislator or "constitutional machinery of law-making"[1] which would be able to pass binding laws, statutes or regulations exists on the international plane. Rather, international law, a relative legal order, is largely based[2] on the "fundamental principle of State sovereignty"[3] and on the concept of *consensus*, which essentially means that States are entitled to decide which legal norms are binding upon them.[4] There is thus no universal legal framework that would be applicable in an undifferentiated manner to every case. In its famous *Lotus* judgment, the Permanent Court of International Justice (hereafter PCIJ) described this feature of international law as follows:

> "International law governs relations between independent States. The rules of law binding upon States therefore emanate from their own free will as expressed in conventions or by usages generally accepted as expressing principles of law and established in order to regulate the relations between these co-existing independent communities or with a view to the achievement of common aims."[5]

Its successor, the International Court of Justice (hereafter ICJ), held in *Case concerning Military and Paramilitary Activities in and against Nicaragua* that

> "in international law there are no rules other than such rules as may be accepted by the State concerned, by treaty or otherwise."[6]

A treaty provision is thus only binding upon a State when that State is a party to the respective treaty. This so-called *pacta tertiis* rule is now codified in Art. 34 of the 1969 Vienna Convention on the Law of Treaties (hereafter: VCLT).[7] With regard to the formation of customary international law, it is sufficient that a majority of States believes that a certain behaviour is required by law. Different to treaties, it is not necessary that every individual State expresses and manifests its will to be bound by that rule. As long as a State does not persistently raise objections as to the binding nature of a rule, it is bound to it. And yet, even if there is a universally binding customary rule, States are, because of their sovereignty, free to derogate from that customary rule by way of conclusion of a bi- or multilateral treaty. Even

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[1] *Brownlie*, Principles of Public International Law, 7th ed. 2008, 1.

[2] An exemption to this are the few norms which are peremptory in nature, cf. Art. 53 VCLT.

[3] *Military and Paramilitary Activities in and against Nicaragua*, ICJ Reports 1986, 14 (para. 263).

[4] *The Case of the S.S. "Lotus"*, Judgment, PCIJ Series A, No. 10, 2 (18); *Military and Paramilitary Activities in and against Nicaragua*, ICJ Reports 1986, 14 (para. 269).

[5] *The Case of the S.S. "Lotus"*, Judgment, PCIJ Series A, No. 10, 2 (18).

[6] *Military and Paramilitary Activities in and against Nicaragua*, ICJ Reports 1986, 14 (para. 269).

[7] United Nations Treaty Series, Vol. 1155 (1980), 331.

though in such a situation the customary rule does not cease to exist,[8] the then emerging conflict between these two rules (the customary rule on the one hand and the treaty rule on the other) is in almost all cases solved in favour of the treaty provision due to the principle *lex specialis derogat legi generali.* In the words of the eminent legal scholar *Hugh Thirlway*:

> „It is universally accepted that – considerations of *jus cogens* apart – a treaty as *lex specialis* is law between the parties to it in derogation of the general customary law which would otherwise have governed their relations."[9]

Against this background, a certain conduct is always in line with international law when it does not violate any international rule applicable to it. A positive norm expressly permitting the conduct is not required. In the words of *Gilbert Guillaume,* former president of the International Court of Justice: "but if the law is silent (...), States remain free to act."[10] In its recent advisory opinion as to whether the unilateral declaration of independence issued by the Kosovar authorities is in line with international law, the ICJ expressly followed that line of argument. It stated that

> "(t)o answer that question, the Court need only determine whether the declaration of independence violated either general international law or the *lex specialis* created by Security Council resolution 1244 (1999). For the reasons already given, the Court considers that general international law contains no applicable prohibition of declarations of independence. Accordingly, it concludes that the declaration of independence of 17 February 2008 did not violate general international."[11]

It is the object of the following assessment to set out the relevant legal framework and to assess and ascertain whether the envisaged activities of GROOM are conducted in conformity with public international law. As far as the applicable treaty law is concerned, the 1982 United Nations Convention on the Law of the Sea (hereafter UNCLOS)[12] plays a key role. With regard to customary international law, it is important to note that the available State practice concerning the deployment and operation of gliders is not of a sufficiently uniform and universal scope so as to establish the necessary settled practice. Relevant customary rules are thus at best in a *status nascendi*. Yet the available State practice must be taken into account when interpreting the relevant treaty provisions.

II. PRINCIPLES OF TREATY INTERPRETATION

As international treaty law plays a key role in this assessment it is worth to outline the applicable principles of treaty interpretation in advance. The main principles of treaty interpretation are laid down in Art. 31 VCLT. As an international treaty, the VCLT is principally applicable only to its State parties.[13]

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[8] *Military and Paramilitary Activities in and against Nicaragua*, ICJ Reports 1984, 392 (MN. 73).

[9] *Thirlway*, BYIL 60 (1989), 1 (147).

[10] *Guillaume*, Separate Opinion, Legality of the Threat or Use of Nuclear Weapons, ICJ Reports 1996, 287 (MN.10)

[11] *Accordance with International Law of the Unilateral Declaration of Independence in Respect of Kosovo*, Advisory Opinion, ICJ Reports 2010, 403 (MN. 83/84).

[12] United Nations Treaty Series, Vol. 1833 (1994), 3.

[13] Currently the convention has 113 State members.

That said, the ICJ confirmed the customary status of the VCLT in the *Arbitral Award of 31 July 1989* where it held that the Vienna Convention

> "(…) may in many respects be considered as a codification of existing customary international law (…)."[14]

Despite its early reluctance as to the customary status of Art. 31 VCLT, the ICJ ruled a few years later that not only parts of Art. 31 VCLT were reflected in customary international law, but rather the entire article.[15] In line with this statement, several other international tribunals have argued in favour of the customary status of Art. 31 (1) VCLT.[16] For example, the International Tribunal for the Law of the Sea (hereafter ITLOS) explicitly confirmed the customary status of the principle of treaty interpretation in its recent advisory opinion on *Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area*.[17]

Art. 31 (1) VCLT stipulates that "a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose." It is thus based on the presumption that the text has to be seen as the authentic expression of the intention of the parties drawing up the treaty.[18] Any process of interpretation must thus always start with the elucidation of the ordinary meaning of the respective term,[19] *i.e.*, the meaning which is normal, regular or customary.[20] As the ICJ underlined in the *Case concerning the Territorial Dispute*, any "interpretation must be based above all upon the text of the treaty."[21] However, as the International Law Commission (ILC) argued, "the ordinary meaning of a term is not to be determined in the abstract but in the context of the treaty and in the light of its objects and purposes."[22] This statement is in line with the jurisprudence of the ICJ which held in its advisory opinion on *Admission of a State to the United Nations* that

> "(t)he first duty of a tribunal which is called upon to interpret and apply the provisions of a treaty is to endeavour to give effect to them in their natural and ordinary in the context in which they occur. If, on the other hand, the words in their natural and ordinary meaning are ambiguous or lead to an unreasonable result, then, and then only, must the Court, by resort

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[14] *Arbitral Award of 31 July 1989*, ICJ Reports 1991, 53 (MN. 53).

[15] *Case concerning the Territorial Dispute*, ICJ Reports 1994, 6 (MN. 41).

[16] *Award in the Arbitration regarding the Iron Rhine ("Ijzeren Rijn") Railway between the Kingdom of Belgium and the Kingdom of the Netherlands,* Decision of 24th May 2005, RIAA Vol. XXVII, 35 (para. 45).

[17] *Responsibilites and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area*, Case No. 17, MN. 57.

[18] *ILC Draft Articles on the Law of Treaties with commentaries*, YbILC 1966, Vol. II, 220; see also: *Dörr* in: Dörr/Schmalenbach (eds), Vienna Convention on the Law of Treaties – A Commentary, Article 31 para. 38; *Aust*, Modern Treaty Law and Practice (2004), 187 *et seq*.

[19] *ILC Draft Articles on the Law of Treaties with commentaries*, YbILC 1966, Vol. II, 220, *Villiger*, Commentary on the 1969 Vienna Convention on the Law of Treaties (2009), Article 31 MN. 9.

[20] *Dörr* in: Dörr/Schmalenbach (eds), Vienna Convention on the Law of Treaties – A Commentary, Article 31 para. 41; *Villiger*, Commentary on the 1969 Vienna Convention on the Law of Treaties (2009), Article 31 MN. 9.

[21] *Case concerning the Territorial Dispute*, ICJ Reports 1994, 6 (MN. 41)

[22] ILC Draft Articles on the Law of Treaties with commentaries, YbILC 1966, Vol. II, 221.

> to other methods of interpretation, seek to ascertain what the parties really did mean when they used these words."[23]

In the *South West Africa Cases*, the ICJ specified this statement and set out the limits of an interpretation that bases its outcome solely on the ordinary meaning of the respective term:

> "(…) this rule of interpretation is not an absolute one. Where such a method of interpretation results in a meaning incompatible with the spirit, purpose and context of the clause or instrument in which the words are contained, no reliance can be validly placed on it."

Thus, all means of interpretation codified in Art. 31 (1) VCLT are closely interrelated. Any interpretation based on the ordinary meaning of the wording which is contrary to the context and/or the *telos* of the whole treaty has to be neglected. In turn, the limits of the extent to which the *telos* of a treaty can be considered becomes manifest in the ordinary meaning of the respective term.[24] The Iran-United States Claims Tribunal stressed this interrelationship in *Federal Reserve Bank of New York v Bank Markazi* when it held that

> "(…) under the Article 31 of the Vienna Convention, a treaty's object and purpose is to be used only to clarify the text, not to provide independent sources of meaning that contradict the clear text."[25]

Together with these means of interpretation, any subsequent agreement between the parties and any subsequent practice in the application of the treaty as to the interpretation of that treaty shall be taken into account as well, Art. 31 (2) lit. a and b respectively. Even though the ordinary meaning of a term always serves as a starting point, all mentioned means in Art. 31 VCLT are of equal importance for the process of interpretation. Art. 31 (1) VCLT does not establish a hierarchy between the different means of interpretation.[26] That said, the international law of treaty interpretation also recognises subsidiary means of interpretation. According to Art. 32 VCLT, recourse to the *travaux préparatoires*, *i.e.*, the material documenting the negotiating history of a treaty, can only be made as to confirm the outcome of the interpretation or in cases where an interpretation according to Art. 31 (1) VCLT does not lead to a satisfactory outcome, *i.e.*, the interpretation would leave the meaning ambiguous or obscure or leads to a result which is manifestly obscure or unreasonable. It is important to note that only in these cases may supplementary means of interpretation be used to assist in the process of treaty interpretation.[27]

B. Classification of the Nature of the Envisaged Activities

Following these preliminary remarks, the issue whether the envisaged activities undertaken within GROOM are in line with international law shall be addressed. As already mentioned, UNCLOS with its comprehensive approach plays an important role in this regard. States which have negotiated the

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[23] *Admission of a State to the United Nations*, ICJ Reports 1950, 4 (8); *cf* also: *Constitution of the Martime Safety Committee*, Advisory Opinion, ICJ Reports 1960, 150 (158): "The word obtains its meaning from the context in which it is used."; *Competence of the ILO in regard to International Regulation of the Conditions of the Labour of Persons Employed in Agriculture*, PCIJ Series B No 2, 9 (23).

[24] *Dörr* in: Dörr/Schmalenbach (eds), Vienna Convention on the Law of Treaties – A Commentary, Article 31 para. 58; *Villiger*, Commentary on the 1969 Vienna Convention on the Law of Treaties (2009), Article 31 MN. 14.

[25] *Federal Reserve Bank of New York v Bank Markazi*, Iran-US Claims Tribunal Reports, Vol. 5, para. 53.

[26] *Villiger*, Commentary on the 1969 Vienna Convention on the Law of Treaties (2009), Article 31 MN. 29.

[27] *Shaw*, International Law, 5th ed. 2003, 841.

convention were, according to the preamble, prompted by the desire to settle all issues relating to the law of the sea. According to *Dolliver Nelson*, currently judge at ITLOS, UNCLOS

> "is the first comprehensive treaty on the law of the sea dealing with practically every aspect of the uses and resources of the seas and oceans, and has provided a considerable measure of stability and predictability in the conduct of States with regard to marine activities. It sets out clear limits for maritime zones falling under the sovereignty and jurisdiction of coastal States(…)."[28]

It is not surprising that the convention plays the predominant role when assessing whether a certain conduct is in line with the present international law of the sea. However, before turning to the actual assessment it is noteworthy to outline some special features of UNCLOS. Importantly, the convention does in the majority of cases not provide a single and simple answer as to whether a certain conduct is in conformity with it or not. In many instances, a certain conduct is lawful in one part of the sea while it is at least subject to some restrictions in another part of the ocean. The reason for this fact is that UNCLOS divides the sea into several maritime zones in which coastal States and "using" States have different rights and duties. To illustrate this, whereas researching States need prior consent of the coastal State for research activities within the maritime zones over which the coastal State is entitled to exercise jurisdiction, prior consent of the coastal State is not needed if the research activities are to be conducted on the high seas (which are, according to Art. 89 UNCLOS, free of sovereignty of any State). While the internal waters[29] and the territorial sea[30] are part of the territory of the coastal State and thus constitute areas to which the sovereignty of that State extend, the exclusive economic zone (hereafter EEZ) is a *sui generis* zone over which the coastal State is only entitled to exercise functionally limited sovereign rights and jurisdiction.[31]

I. Definition of Hydrographic Surveying

Hydrographic surveying is mentioned in Art. 21 I (g) UNCLOS in juxtaposition to marine scientific research. It is therefore striking that UNCLOS considers these activities as being different and mutually exclusive.[32] However, UNCLOS does not contain a definition of "hydrographic surveying". The *International Hydrographic Organization* defined in its 1994 published Hydrographic Dictionary "hydrography" as

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[28] *Nelson*, Reflections on the 1982 Convention on the Law of the Sea, in: Freestone *et al* (eds.), The Law of the Sea: Progress and Prospects (2006), 28 (29 *et seq*). *Cf.* also the more reluctant statement of *Birnie*, IJMCL 10 (1995), 229 (230): "The LOS Convention, comprehensive though it is, does not cover every aspect of oceans uses and is careful to affirm in its preamble that matters not regulated by it continue to be governed by the rules and principles of 'general international law'."

[29] Internal waters are described as the waters landwards from the baseline (*cf.* Art. 8 I UNCLOS). Art. 5 UNCLOS defines the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State as the "normal baseline".

[30] The territorial sea is considered as the area seawards from the baseline up to a maximum breadth of 12 nm. *Cf.* Art. 3 UNCLOS.

[31] The EEZ is adjacent to the territorial sea and encompasses an area not exceeding 200 nm measured from the baseline.

[32] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 80.

> "that branch of applied science which deals with the measurement and description of the physical features of the navigable portion of the earth's surface and adjoining coastal areas, with special reference to their use for the purpose of navigation."[33]

"Hydrographic survey" was defined as

> "a survey having for its principal purpose the determination of data relating to bodies of water. A hydrographic survey may consist of the determination of one or several of the following classes of data: depth of water; configuration and nature of the bottom; directions and force of currents; heights and times of tides and water stages; and location of topographic features and fixed objects for survey and navigation purposes."[34]

It is, however, noteworthy that the IHO suggested a broader definition of "hydrography" in its latest version of its Manual on Hydrography than that provided in its dictionary. Hydrography is there defined as

> "that branch of applied sciences which deals with the measurement and description of the features of the seas and coastal areas for the primary purpose of navigation and all other marine purposes and activities, including – inter alia – offshore activities, research, protection of the environment, and prediction services."[35]

The IHO thus turned from a purpose-oriented definition to a definition which encompasses almost any conceivable survey activity. However, this definition cannot be applied to UNCLOS as it would undermine the distinction between marine scientific research on the one hand and hydrographic surveying on the other embodied in Art. 21 I (g) UNCLOS. That said, it is recognised in international law that changes in the meaning of a term are in principle to be taken into account when interpreting a provision. This principle was expressed by the ICJ in its advisory opinion concerning *Namibia*:

> "Mindful as it is of the primary necessity of interpreting an instrument in accordance with the intentions of the parties at the time of its conclusion, the Court is bound to take into account the fact that the concepts embodied in Article 22 of the Covenant (…) were not static, but were by definition evolutionary (…). The parties to the Covenant must consequently be deemed to have accepted them as such. That is why, (…), the Court must take into consideration the changes which have occurred in the supervening half-century, and its interpretation cannot remain unaffected by the subsequent development of law (…). Moreover, an international instrument has to be interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation."[36]

However, it is submitted that the term "hydrographic surveying" is not of a generic kind and therefore not of an evolutionary nature, with the consequence that the above rule of interpretation cannot be

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[33] *Hydrographic Dictionary*, Vol. I/1 (1994), Special Publications No. 32.

[34] *Hydrographic Dictionary*, Vol. I/1 (1994), Special Publications No. 32.

[35] *Manual on Hydrography*, 2005, Publication C-13, 2.

[36] *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970)*, Advisory Opinion, ICJ Reports 1971, 16 (MN. 53).

applied to the term "hydrographic surveying". There is no indication whatsoever in the *travaux préparatoires* submitting that the drafters of UNCLOS regarded the term "hydrographic surveying" as evolutionary or as generic in nature. Rather, in the absent of certain indications to the contrary it should be assumed that States have a specific meaning in mind when they introduce a term into a Convention, and that that meaning reflects the ordinary meaning that prevailed at the time of the drafting or conclusion of the treaty. Admittedly, definitions may change over time. That said, if the altered definition undermines the drafters clear intention and was further altered by an independent organization and not by the States parties to the convention, then the ordinary meaning that prevailed at the time of the conclusion of the treaty concerned has to be applied. Moreover, there is no indication that the IHO had the intention to alter the meaning of the term "hydrographic surveying" as used in Art. 21 UNCLOS.

Hydrographic surveying is therefore to be understood as encompassing any measurement and description of the physical features of the navigable portion of the earth's surface and adjoining coastal areas, with special reference to their use for the purpose of navigation. Or as *Roach* puts it, "hydrographic surveys are activities undertaken to obtain information for the making of navigational charts and for the safety of navigation."[37]

II. Definition of Exploration

Art. 56 I (a) and Art. 77 UNCLOS refer to "exploration and exploitation of the natural resources". What is meant by this term in not explicitly defined in UNCLOS. However, it is recognised that exploring the marine environment must be conducted for the purpose of later exploitation. Soons is therefore correct to define exploration as "data collecting activities (scientific research) concerning natural resources, whether living or non-living, conducted specifically in view of the exploitation (i.e., economic utilization) of those natural resources."38 Wegelein has pointed out that "'exploration' is usually conducted to provide a basis for the decision whether or not to exploit a natural resource."39 Exploration is thus the first step leading to an exploitation of the natural resources. Caflisch and Piccard furthermore referred to the fact that it is a feature of exploration that the activities are not conducted in order to publish the gained results.40

III. Definition of Marine Scientific Research

UNCLOS itself does not contain an *explicit* definition of the notion "marine scientific research" (hereafter MSR).[41] The reasons for this omission have remained a matter of controversy.[42] Attempts

[37] *Roach*, Marine Data Collection: Methods and the Law, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 171 (175); *cf.* also *Xue*, Marine Scientific Research and Hydrographic Surveys in the EEZs: Closing up the Legal Loopholes, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 209 (217); *Bork et al*, ODIL 39 (2008), 298 (304).

[38] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 125.

[39] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 85.

[40] *Caflisch/Piccard*, ZaörV 38 (1978), 848 (850 *et seq.*).

[41] *Rothwell/Stephens*, The International Law of the Sea (2010), 321; *Soons*, Marine Scientific Research and the Law of the Sea (1982), 124; *Churchill/Lowe*, The Law of the Sea, 3rd ed. 1999, 405 (fn. 3).

made by the US to reintroduce an explicit definition failed, as many States were of the view that such a definition is in the end not needed.[43] It is yet necessary to give a definition of the term "marine scientific research" since without such a definition it is hardly possible to determine whether a conduct comes within the respective regime or not.[44]

The Oxford Dictionaries describe "science" as the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment.[45] "Research" is defined as the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.[46] The Frascati Manual issued by the Organisation for Economic Co-operation and Development (hereafter OECD) defines research in a similar way as comprising

> "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications."[47]

Marc Mangel in the course of the *Whaling in the Antarctic* proceedings before the ICJ recently described science as follows:

> "The goal of science is to understand the natural world by providing a framework to account for observations already taken and to make predictions of new observations. This goal is achieved by putting new knowledge into the context of existing knowledge, recognizing that even when there is progress the conclusions are transient (…) but the methods are not."[48]

According to these definitions it can be concluded that the core element of any scientific research activity is the establishment of a hypothesis paired with the pursuit of proving this hypothesis as true by way of observations, experiments and the evaluation and interpretation of collected data. Consequently, MSR is described by almost all authorities as any study or work designed to increase

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[42] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 124 and *Rothwell/Stephens*, The International Law of the Sea (2010), 321 are of the view that the reason for the omission was the consensus between the drafters to the effect that a definition of the notion is not necessary, as the provisions of UNCLOS clearly establish the intended meaning of MSR. However, *Nordquist et al*, United Nations Convention on the Law of the Sea 1982 – A Commentary, Vol. IV, 1991, MN. 238.6 purports that the difficulty of distinguishing between fundamental scientific research and applied scientific research were the reason for the omission of a definition of MSR.

[43] *Cf.* Informal Doc. MSR/2 (6th September 1978) and Informal Doc. MSR/2/Rev.1 (2nd April 1979) reproduced in *Platzöder*, The United Nations Conference on the Law of the Sea: Documents (1986), Vol. X, 360 and 386, respectively.

[44] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 11.

[45] http://oxforddictionaries.com/definition/english/science?q=science (last visit on 24 September 2013).

[46] http://oxforddictionaries.com/definition/english/research?q=research (last visit on 24 September 2013).

[47] OECD, Frascati Manual – Proposed Standard Practice for Surveys on Research and Experimental Development (2002), 30.

[48] *Mangel*, An Assessment of Japanese Whale Research Programs Under Special Permit in the Antarctic (JARPA, JARPA II) as Programs for Purposes of Scientific Research in the Context of Conservation and Management of Whales, April 2011, in: Whaling in the Antarctic – Memorial of Australia, Appendix 2, p. 334 (MN. 4.1).

mankind's knowledge of the marine environment.[49] This definition is supported by UNCLOS itself, as Art. 246 III UNCLOS stipulates that coastal States shall, in normal circumstances, grant their consent for MSR projects conducted exclusively for peaceful purposes and in order to increase scientific knowledge of the marine environment for the benefit of all mankind. Art. 246 III UNCLOS thus discloses the drafters' intentions when they negotiated the Convention. With this in mind, the statement that UNCLOS does not provide a definition of MSR is only valid to the extent that UNCLOS does not contain a specific article defining MSR in general.

Based on the aforementioned, MSR can be defined as

> Any study and/or experimental work conducted with appropriate scientific methods on the sea exclusively for peaceful purposes and designed to increase mankind's knowledge of the marine environment understood as encompassing the sea as well as the sea-bed and the subsoil.

This definition does not distinguish between "applied research", *i.e.*, research that first and foremost aims at economic and/or commercial exploitation, and "fundamental research", understood as altruistic research solely designed to increase humankind's knowledge of the marine environment.[50] That such a differentiation on the level of definition is alien to UNCLOS is supported by Art. 246 V (a) UNCLOS where it is stipulated that coastal States can withhold their consent to a MSR project if that project is of direct significance for the exploration and exploitation of natural resources.

IV. Definition of Operational Oceanography

In addition to the three already mentioned categories, a forth category, i.e., operational oceanography, which is not mentioned in UNCLOS at all, could be of relevance for the issue at hand. Operational oceanography is defined as "the routine collection of ocean observations, such as temperature, pressure, current, salinity and the wind, in all maritime zones".51 These data are used for the monitoring and forecasting of climate, ocean state and weather and are transmitted for the oceans to the coast in near real time and are also made available to the public in near real time.52

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[49] *Rothwell/Stephens*, The International Law of the Sea (2010), 321; *Soons*, Marine Scientific Research and the Law of the Sea (1982), 124; *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 12; *Treves*, Marine Scientific Research, in: Wolfrum (ed.), Max Planck Encyclopedia of Public International Law (2012), Vol. VI, 1063 (MN 1); *Hafner*, Meeresumwelt, Meeresforschung und Technologietransfer, in: Graf Vitzthum (ed.), Handbuch des Seerechts (2006), Chapter V MN. 233.

[50] *Tanaka*, The International Law of the Sea (2012), 337; OECD, Frascati Manual – Proposed Standard Practice for Surveys on Research and Experimental Development (2002), 30. *Cf.* also the definition proposed by Bulgaria, Poland, Ukraine and the then Soviet Union in UN Doc. A/AC.138/SC.III/L.31: "Scientific research in the world ocean means any fundamental or applied research and related experimental work, conducted by States and their juridical and physical persons, as well as by international organizations, which does not aim directly at industrial exploitation but is designed to obtain knowledge of all aspects of the natural processes and phenomena occurring in ocean space, on the seabed and in the subsoil thereof, which is necessary for the peaceful activity of States for the further development of navigation and other forms of utilizations of the sea and also utilization of the air space above the world ocean."

[51] *Roach*, Revue Egyptienne de Droit International 64 (2008), 79 (82).

[52] *Roach*, Marine Data Collection: Methods and the Law, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 171 (175 *et seq.*).

V. ASSESSMENT

1. Classification *a priori*

If one attempts to assign activities conducted within the framework of GROOM to one or more of the aforementioned categories, it is noteworthy that all activities outlined above have the collection of data in common. However, the activities differ as far as the intent of the respective operators is concerned.[53] Whereas data collection for the purpose of MSR is conducted in order to enhance knowledge on the marine environment,[54] the objective of data collection for the purpose of hydrographic surveying is to be seen in the production of maritime charts that serve to enhance safety at sea.[55] Finally, operational oceanography is conducted for the purpose of monitoring and forecasting. As a matter of logic, GROOM cannot be classified as hydrographic surveying since its activities are not conducted in order to produce maritime charts or with the primary purpose to enhance safety at sea. It is clear that GROOM cannot be considered as exploration since the data collection is, on the one hand, not undertaken in order to provide decision-makers with a basis for their decisions, and, on the other hand, the data collection is conducted with the intent to make the gained data available to the public. Thus, the question remains whether GROOM is to be considered as MSR or as operational oceanography. GROOM activities do neither aim at verifying or falsifying yet unresolved phenomena, nor are they conducted in order to explain such phenomena, or even in order to explain the relationship between these and other phenomena.[56] It can thus be concluded at this stage of the assessment that GROOM activities are to be ascribed to the category "operational oceanography". This result would be in line with the prevailing view in legal doctrine concerning the deployment of unmanned research equipment such as drifter and glider.[57] In this respect, the chairman of the Third Committee of the Third United Nations Conference on the Law of the Sea, which ultimately led to the adoption of UNCLOS in 1982, stated that activities directed at the collection of meteorological relevant data "had already been recognized as routine observation and data collecting" and were thus to be considered as an activity "not covered by Part XIII of the negotiating text" which later became UNCLOS.[58]

2. Impact of State Practice

Notwithstanding the fact that MSR on the one hand and operational oceanography on the other are indeed characterized by different intentions that are pursued with them, an argument can be made that operational oceanography is nonetheless to be considered as falling within the MSR regime. The basis for this argument ought to be seen in the attitude of several States concerning operational

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[53] *Roach*, Marine Data Collection: Methods and the Law, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 171 (175 *et seq.*).

[54] *Bork et al*, ODIL 39 (2008), 298 (304); *Caflisch/Piccard*, ZaörV 38 (1978), 848 (850); *Roach*, Marine Data Collection: Methods and the Law, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 171 (174).

[55] *Xue*, Marine Scientific Research and Hydrographic Surveys in the EEZs: Closing up the Legal Loopholes, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 209 (217).

[56] *Cf.* IOC/INF-1291: "(W)e do not pick up a phenomenon to study, to explain, to define its causes, consequences, its relationship with other phenomena and so on."

[57] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 181; *Tanaka*, The International Law of the Sea (2012), 344.

[58] UN Doc. A/CONF.62/C.3/SR.46, MN. 5.

oceanography. As outlined above, according to Art. 31 III (b) VCLT any subsequent practice in the application of a treaty has to be taken into account when interpreting its provisions.

Taking a closer look at the relevant State practice, the United States, for instance, expressed the view that operational oceanography is not part of the MSR regime. The Senate Committee on Foreign Relations stated that "there are other activities such as operational oceanography, that are also not considered as marine scientific research."[59] The United Kingdom subscribed to this view within the IOC Executive Council.[60] On the other hand, France recently made the following statement:

> "Within this legal context and this framework, there are no specific provisions to deal with ARGO float or broadly with operational oceanography, because it is not relevant from our view to make a difference. This deployment, or this activity, is considered to be a component of MSR which regime is established in Part XIII UNCLOS."[61]

Japan contested the view of the United Kingdom during the deliberations of the Executive Council and insisted on the position that "the ARGO initiative could perfectly well be considered in the framework of Art. 247 of UNCLOS, as an activitiy of a group of IOC Member States on a subject of marine scientific research under the auspices of IOC."[62] Peru also objected to the view that operational oceanography cannot be considered as MSR. Within the IOC Advisory Body of Experts on the Law of the Sea, the Peruvian delegation emphasized that:

> "Peru joins the consensus on the paragraphs of the Guidelines adopted by the Advisory Body expressing that the activities related to the collection of oceanographic data are marine scientific research, and therefore are subject to the consent regime by the Coastal State."[63]

At the same occasion, Argentina made the following statement:

> "Argentina reaffirms that all activities directed at the obtaining of scientific data by instruments in situ in the jurisdictional waters of Coastal States are subject to the substantive provisions of Part XIII of UNCLOS – in particular, those asserting the consent of the Coastal State presiding such activities, in protection of its sovereign rights and jurisdiction over living and non-living resources."[64]

This statement implicitly covers operational oceanography. Germany expressed the view that "permission to deploy floats, gliders or drifters should always be sought when the initial application is made",[65] thereby clarifying that it considers the MSR regime contained in Part XIII UNCLOS as being applicable.

Against this background, it is submitted that there is at least a strong tendency amongst States to consider operational oceanography activities as being covered by the regime of MSR. This is all the

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[59] Reproduced in: *Roach*, Marine Data Collection: Methods and the Law, in: Nordquist *et al* (eds.), Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention (2009), 171 (194).

[60] IOC/EC-XXXIX/3, MN. 262.

[61] Reproduced in the SEDIRI-Report available to the authors.

[62] IOC/EC-XXXIX/3, MN. 263.

[63] IOC/ABE-LOS VIII/3, p. 10.

[64] IOC/ABE-LOS VIII/3, p. 10.

[65] Reproduced in the SEDIRI-Report available to the authors.

more true if one keeps in mind that the United States are not a State party to UNCLOS, thus their practice cannot be taken into account when reconciling the text of UNCLOS with later practice. Application of the stricter MSR criteria would also help to avoid the risk of future disputes resulting from a glider deployment within the framework of GROOM. The present assessment is thus based on the assumption that the MSR regime is applicable to all GROOM activities.

C. Does UNCLOS Govern MSR Projects Conducted by Private Entities?

Prima facie, it seems that UNCLOS only governs research activities undertaken by the State itself, or activities that are attributable to it, or activities which are undertaken by an international organisation or under its auspices. For instance, Art. 238 UNCLOS stipulates that "all States (…), and competent international organizations have the right to conduct marine scientific research (…)." Similarly, Art. 249 UNCLOS addresses "States and competent international organizations" and requires them, "when undertaking marine scientific research in the exclusive economic zone (…) of a coastal State", to comply with certain conditions. Also Art. 246 UNCLOS refers in its paragraph 3 to "marine scientific research projects by other States or competent international organizations." Taking into account that this preliminary conclusion would limit the scope of the regime of MSR to a minority of cases (*i.e.*, cases were the research is directly undertaken by States and international organisations, or conducted under their direct control), it is necessary to determine in more detail what is meant by the terms "researching State" and "competent international organisation". In doing so, the following assessment also questions whether GROOM activities can be considered as research undertaken by an international organization or on its behalf.

I. GROOM Activities as MSR Undertaken by an International Organization or on its behalf?

GROOM is funded by the European Union (hereafter EU). It is therefore conceivable that the research activities undertaken by GROOM could be considered as research undertaken by the EU itself or at least as research conducted on behalf of the EU. Irrespective of the issue as to whether the EU is a "competent international organisation", the mere funding of a project does not transform a project into a project undertaken by an international organization, though. Inherent in the word "undertake" is a commitment to launch a certain enterprise. Hence, in order to speak of a research project undertaken by an international organization it is necessary that the competent organs of that organization decide as to whether the envisaged research project will be undertaken or not. This interpretation is supported by Art. 247 UNCLOS. This provision stipulates that the explicit consent of a coastal State is not required if the coastal State has approved the project when the decision was made by the organization for the undertaking of the project. Art. 247 UNCLOS thereby emphasises that a decision as to the undertaking of the research project must be made by the competent organs of that organization. As such a decision has never been made by the EU, GROOM activities cannot be considered as MSR undertaken by a competent international organisation.

II. MSR Undertaken by the "Researching State"

Turning then to the question whether GROOM activities can be considered as MSR undertaken by a State, it is helpful in this regard to point out that all research activities conducted under the umbrella of GROOM are not research activities undertaken by GROOM as a legal entity, but by the respective "national" partners of the GROOM consortium.

As indicated above, UNCLOS seems to be exclusively designed for the purpose to govern relations between different groups of States. As far as MSR is concerned, the relevant categories are coastal States on the one hand and researching States on the other. This "horizontal" character of Part XIII UNCLOS is best mirrored in Art. 246 IV UNCLOS where it is stipulated that coastal States shall, in

normal circumstances, grant their consent for MSR projects by other States in their EEZ. Therefore, it seems that MSR projects undertaken by private institutes and persons are not covered by Part XIII UNCLOS. Art. 276 UNCLOS seems to further support this conclusion by making reference to "national marine scientific (…) research institutions". Taking into account that this provision is incorporated in Part XIV UNCLOS (dealing with development and transfer of marine technology) and not in Part XIII UNCLOS (containing the regime of MSR), one could argue *e contrario* that since national research institutes are not explicitly mentioned in Part XIII UNCLOS, they do not fall within the scope *ratione personae* of the regime established by it.

Against this background, *Soons* is correct in pointing out that only States and competent international organisations have been allocated the right by UNCLOS to conduct MSR.[66] That said, the fact that private research institutions have not been allocated such a right, and that national research institutes are not explicitly mentioned in Part XIII UNCLOS, does not mean that their activities are not governed by the rules and principles codified in the Convention. If one would interpret the above mentioned provision in such a limited way, there would be a substantial amount of research activities not covered by UNCLOS. Such an interpretation would be in direct opposition to the *telos* of Part XIII UNCLOS to regulate *all* MSR activities conducted in the oceans.[67] Furthermore, it is striking that Art. 240 UNCLOS which codifies general principles for the conduct of MSR, does not contain any reference to States or competent international organisations. This clearly militates in favour of accepting that UNCLOS does not *per se* exclude MSR projects conducted by private entities from its scope. Rather, the relevant UNCLOS provisions are arguably based on the assumption that every private research project is automatically transformed into a research project of the applying State (or international organization respectively) simply because that State (or organization) is always involved in the application procedure.[68] This interpretation is backed by Art. 263 II UNCLOS which explicitly refers to MSR conducted by "States, their natural or judicial persons" and thereby acknowledges that also research undertaken by private institutes is covered by Part XIII UNCLOS. The interpretation advocated here is also in line with the few statements that exist in legal doctrine. *Soons*, for instance, has taken the view that the term "researching State" does not only encompass States conducting research, but also those States "under the authority of which natural or juridical persons are conducting marine scientific research."[69] Similarly, *Caflisch* and *Piccard* have described the term "researching State" as not only covering research projects undertaken by a State but also by private institutions and individuals of that State.[70] It is also not without relevance that a draft document submitted by four Eastern European States during the negotiations of the Seabed Committee defined MSR as research conducted by "States and their juridical and physical persons."[71]

In summary, Part XIII UNCLOS also covers activities of private research institutions. Why the drafters of the UNCLOS have refrained from sufficiently clarifying the scope of Part XIII UNCLOS remains unclear. This is all the more surprising against the background of the formulation used in Art. 5 VIII of the 1958 Geneva Convention on the Continental Shelf,[72] which is to be regarded as one of the "predecessor conventions" of UNCLOS. This article refers to "qualified institutions", a term perfectly describing the reality.

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[66] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 127.

[67] *Nordquist et al*, United Nations Convention on the Law of the Sea 1982 – A Commentary, Vol. IV, 1991, MN. 240.1.

[68] *Cf.* Art. 250 UNCLOS.

[69] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 131.

[70] *Caflisch/Piccard*, ZaöRV (1978), 848 (851).

[71] A/AC.138/SC.III/L.31.

[72] A/AC.138/SC.III/L.31.

D. Legal Status of Gliders

I. GLIDERS AS SHIPS?

Neither UNCLOS (although it refers to "vessel" or "ship" more than 100 times)[73] nor general international law contain a proper definition of the terms "ship" or "vessel".[74] It is therefore necessary to reveal their meaning by recourse to the methods of interpretation outlined above. The Oxford Dictionary defines "vessel" as a ship or a large boat,[75] whereas "ship" is defined as a large boat for transporting people or goods by sea,[76] and "boat" as a small vessel for travelling over water, propelled by oars, sails, or an engine.[77] The German "Duden" defines *"Schiff"* (ship) as a large, bulgy watercraft[78] whereas *"Boot"* (boat) is defined as a small watercraft.[79] Already these two definitions make obvious that no "ordinary" meaning of the term "ship" exists. While according to the Oxford Dictionary, the criteria of possible employments and features are particularly relevant, the Duden refers to the art of construction and size of the craft. At the same time, as the WTO Appellate Body has held in some of its reports, recourse to dictionaries is usually not sufficient for resolving complex questions of interpretation.[80] Definitions provided for in dictionaries can therefore only serve as a starting-point. Further points of reference are international treaties, domestic statutes and judgments of international and/or domestic courts.

1. Definitions Provided for in International Treaty Law

The International Convention for the Prevention of Pollution of the Sea by Oil[81] defines "ship" as any sea-going vessel of any type whatsoever, including floating craft, whether self-propelled or towed by another vessel, making a sea voyage (…)." In contrast, the United Nations Convention on Conditions for Registration of Ships,[82] which has not yet entered into force, defines "ship" as any self-propelled sea-going vessel used in international seaborne trade for the transport of goods, passengers, or both with the exception of vessels of less than 500 gross registered tons. The Convention on the

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[73] The terms „vessel" and „ship" have the same meaning and are used interchangeably. Cf. *Nordquist et al*, United Nations Convention on the Law of the Sea 1982 – A Commentary, Vol. II, 2002, MN. 1.28.

[74] *Nordquist et al*, United Nations Convention on the Law of the Sea 1982 – A Commentary, Vol. II, 2002, MN. 1.28; *Treves*, Navigation, in: Dupuy/Vignes (eds.), A Handbook on the new Law of the Sea (1991), Vol. II, 835 (841); *Wolfrum*, Hohe See und Tiefseeboden (Gebiet), in: Graf Vitzthum (ed.), Handbuch des Seerechts (2006), 287 (MN. 29); *Lagoni*, Merchant Ships, in: Wolfrum (ed.), Max Planck Encyclopedia of Public International Law (2012), Vol. VII, 98 (MN 1); *O'Connell*, The International Law of the Sea (1984), Vol. II, 747 *et seq.*; *Núnez-Müller*, Die Staatszugehörigkeit von Handelsschiffen im Völkerrecht (1994), 68.

[75] http://oxforddictionaries.com/definition/english/vessel?q=vessel (last visit on 24 September 2013).

[76] http://oxforddictionaries.com/definition/english/ship?q=ship (last visit on 24 September 2013).

[77] http://oxforddictionaries.com/definition/english/boat?q=boat (last visit on 24 September 2013).

[78] The German original reads as follows: großes, bauchiges, an beiden Enden meist schmaler werdendes oder spitz zulaufendes Wasserfahrzeug.

[79] The German original reads as follows: kleines meist offenes Wasserfahrzeug.

[80] *United States – Softwood Lumber IV*, Report of the Appellate Body, 19 January 2004, WT/DS257/AB/R, para. 59; *United States – Gambling*, Report of the Appellate Body, 7 April 2005, WT/DS285/AB/R, para. 164.

[81] United Nations Treaty Series, Vol. 600 (1967), p. 332.

[82] Available at: http://www.admiraltylawguide.com/conven/registration1986.html (last visit on 24 September 2013).

International Regulations on Preventing Collisions at Sea (hereafter COLREGs),[83] in turn, defines in Rule 3 (a) "vessel" as every description of water craft, including non-displacement craft and seaplanes, used or capable of being used as a means of transportation on water. According to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter[84] "vessels" means waterborne or airborne craft of any type whatsoever. This expression includes air cushioned craft and floating craft, whether self-propelled or not. Finally, the Convention for the Protection of the Marine Environment of the North-East Atlantic[85] defines vessels as a waterborne or airborne craft of any type whatsoever, their parts and other fittings, a definition that, again, includes air-cushion craft, floating craft whether self-propelled or not, and other man-made structures in the maritime area and their equipment, but excludes offshore installations and offshore pipelines.

The International Labour Organization (hereafter ILO) has provided definitions of the term "vessel" at several occasions. Already in 1920 in its Convention No. 7 the term "vessel" was defined in Article 1 as including all ships and boats, of any nature whatsoever, engaged in maritime navigation, whether publicly or privately owned.[86] However, in some conventions the ILO departed from that definition and excluded vessels not reaching a certain size from the scope of the respective convention. For instance, in Convention No. 180 it is stipulated in Article 1 that "(t)his Convention does not apply to wooden vessels of traditional build such as dhows and junks",[87] and Convention No. 73 clarifies "(t)his Convention does not apply to vessels of less than 200 tons gross register tonnage".[88]

2. Definitions Used in National Legislation

a. Definitions Used in European States

UK law provides several definitions of the term "ship". According to Section 4 of the Employment of Women, Young Persons, and Children Act 1920[89] a ship means any sea-going ship or boat of any description, and the Territorial Waters Jurisdiction Act 1878[90] defines in Section 7 "ship" as including every description of ship, boat, or other floating craft. Section 313 of the Merchant Shipping Act 1995[91] states that the term "ship" includes every description of vessel used in navigation. The Greek Code of Private Maritime Law defines in its Article 1 "ship" as any vessel of not less than ten net register tons intended to navigate at sea by its own means of propulsion.[92] According to the Italian Code of Navigation a "ship" is any craft destined to carriage by water, even for the purpose of towage, fishing,

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[83] Available at: http://www.admiraltylawguide.com/conven/collisions1972.html (last visit on 24 September 2013).

[84] United Nations Treaty Series, Vol. 1046 (1977), p. 138.

[85] United Nations Treaty Series, Vol. 2354 (2006), p. 67.

[86] Minimum Age (Sea) Convention. Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312152:NO (last visit on 24 September 2013). This definition is also used in Conventions No. 8, 15, 16, 22, 58.

[87] Seafarer's Hours of Work and the Manning of Ship Convention, Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312325:NO (last visit on 24 September 2013). .

[88] Medical Examination (Seafarers) Convention. Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312218:NO (last visit on 24 September 2013).

[89] Available at: http://www.legislation.gov.uk/ukpga/Geo5/10-11/65/section/4 (last visit on 24 September 2013).

[90] Available at: http://www.legislation.gov.uk/ukpga/Vict/41-42/73/section/7 (last visit on 24 September 2013)..

[91] Available at: http://www.legislation.gov.uk/ukpga/1995/21/section/313(last visit on 24 September 2013).

[92] Reproduced in: *Karatzas/Ready*, The Greek Code of Private Maritime Law, 1982, p.4.

pleasure, or any other purpose. It further differentiates between major (*i.e.*, ocean going) and minor (solely engaged in maritime port service and employed for inland navigation) vessels.[93] The French Law No. 76-600 contains the following definition: "tout bâtiment de mer quel qu'il soit, y compris les hydroptères, les aéroglisseurs, ainsi que les plates-formes flottantes et tous engins flottants, qu'ils soient auto-propulsés ou non."[94]

b. Definitions Used in Non-European Domestic Legislation

The United States Code defines in title 1 chapter 1 section 3 "vessel" as including every description of water-craft or other artificial contrivance used, or capable of being used, as a means of transportation on waters.[95] According to Part I.3.55 of the Indian Merchant Shipping Act 1958 the term "vessel" includes any ship, boat, sailing vessel, or other description of vessel used in navigation.[96] The Bahamian Merchant Shipping Act refers in Part 1 section 2 to "every description of vessel used in navigation which is not propelled by oars (…)."[97] The Bahamian Immigration Act in Part I section 2 goes even further when defining "ship" as every description of vessel used in navigation, however propelled.[98] The Canada Shipping Act 2001, by contrast, defines in section 2"vessel" as a "boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water, without regard to method or lack of propulsion (…)."[99] According to section 2 of the Barbadian Marine Boundaries and Jurisdiction Act 1978,[100] the term "ship" includes any "vessel, boat or other sea-going or ocean-going craft." The same definition can be found in section 2 of the Grenadian Marine Boundaries Act 1978.[101] The Australian Shipping Registration Act 1981 defines in Part I.3 "ship" as including "any kinds of vessel capable of navigating the High Seas (…)."[102] In contrast to this definition, the Australian Navigation Act 2012 in chapter 1 part 4 refers to "any kind of vessel used in navigation by water, however propelled or moved (…)."[103]

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[93] Reproduced in: *Manca*, The Italian Code of Navigation, 1958, p.58.

[94] Available at: http://legifrance.gouv.fr/affichTexte.do;jsessionid=EA196A54B04E5B1FB415FAF90B480C65.tpdjo06v_2?cidTexte=JORFTEXT000000334396&dateTexte=20130924.

[95] Available at: http://www.law.cornell.edu/uscode/text/1/3 (last visit on 24 September 2013).

[96] Available at: http://labour.nic.in/upload/uploadfiles/files/ActsandRules/Service_and_Employment/The%20Merchant%20Shipping%20Act,%201958.pdf (last visit on 24 September 2013).

[97] Available at: http://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/1976/1976-0016/Merchant ShippingAct_1.pdf (last visit on 24 September 2013).

[98] Available at: http://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/1967/1967-0025/ImmigrationAct_1.pdf (last visit on 24 September 2013).

[99] Available at: http://laws-lois.justice.gc.ca/PDF/C-10.15.pdf (last visit on 24 September 2013).

[100] Available at: http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/BRB_1978_3.pdf (last visit on 23 September 2013).

[101] Available at: http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/GRD_1978_Act20.pdf (last visit on 23 September 2013).

[102] Available at: http://www.comlaw.gov.au/Details/C2013C00349 (last visit on 23 September 2013).

[103] Available at: http://www.comlaw.gov.au/Details/C2012A00128/Html/Text#_Toc335672065 (last visit on 23 September 2013).

3. Definitions Proposed in Legal Doctrine

Rüdiger Wolfrum, currently judge at the ITLOS, has defined "ship" as any sea-going watercraft whether self-propelled or not.[104] In contrast, *Rainer Lagoni* has relied upon a different understanding according to which "ship" means any vessel used or capable of being used as a means of transportation on water.[105] *Tullio Treves*, former Judge at the ITLOS, proposed to apply an extended version of the definition contained in COLREGs. For him, a ship is any device which fulfils the preconditions laid down in COLREGs and which is further "connected to a State by a link such that that State can claim to exclude interference by other States."[106] *Heidi Engert-Schüler*, in turn, perceives "ship" as any device of a certain size capable of and destined for maritime navigation.[107] Finally, the Special Rapporteur of the ILC for the Regime of the High Seas, *J.P.A. François*, proposed in 1955 the following definition of a merchant ship: "Un navire est un engin apte à se mouvoir dans les espaces maritimes à l'exclusion de l'espace aérien, avec l'armement et l'équipage qui lui sont propres en vue des services que comporte l'industrie à l'aquelle il est employé."[108]

4. Assessment

The different approaches and understandings that have evolved in international and domestic practice as well as legal doctrine make it very clear that no generally accepted definition of the terms "ship" and "vessel" exists.[109] Most definitions are characterized by their purposive nature. A rather broad definition is usually used when the treaty or statute concerned is aimed at protecting the environment or sea-traffic in general. In contrast, in situations where shipping itself constitutes the central object of regulation, recourse is normally made to a narrow ("classical") definition. Despite the various definitions, some general comments can yet be made as to what constitutes a ship, as most of the definitions refer to a set of similar features a craft must have in order to qualify as vessel or ship. In this respect, many treaties require that (1) the craft concerned must be self-propelled, (2) can be used as a means of transportation of goods and people, and/or (3) can be used for maritime navigation. Consequently, two basic preconditions can be laid out for the definition of ship: First, a craft must be a self-propelled device capable of being used for maritime navigation, and second it must be capable of being used as a means of transportation on water of goods and/or people.

However, a careful approach is appropriate when attempting to apply core elements extracted from several different sources of the law to a convention that does not itself provide a legal definition of the term concerned.[110] To treat these core elements as constituting *the* definition of ship under international law (as was done, e.g., by *Heidi Engert-Schüler*)[111] does not correspond to the existing legal methodology. Rather, as was pointed out by *Tullio Treves*, these definitions "afford no more than an approximate indication as they are obviously valid only in the context of the conventions in which they are found and contain elements which are strictly linked to the objectives of these

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[104] *Wolfrum*, Hohe See und Tiefseeboden (Gebiet), in: Graf Vitzthum (ed.), Handbuch des Seerechts (2006), 287 (MN. 29).

[105] *Lagoni*, Merchant Ships, in: Wolfrum (ed.), Max Planck Encyclopedia of Public International Law (2012), Vol. VII, 98 (MN 1).

[106] *Treves*, Navigation, in: Dupuy/Vignes, A Handbook on the New Law of the Sea, Vol. II, 835 (842).

[107] *Engert-Schüler*, Völkerrechtliche Fragen des Eigentums an Wracks auf dem Hohen Meer (1979), 59.

[108] YBILC 1954-II, p.

[109] *Treves*, Navigation, in: Dupuy/Vignes, A Handbook on the New Law of the Sea, Vol. II, 835 (842); *Wolfrum*, Hohe See und Tiefseeboden (Gebiet), in: Graf Vitzthum (ed.), Handbuch des Seerechts (2006), 287 (MN. 29).

[110] *Treves*, Navigation, in: Dupuy/Vignes, A Handbook on the New Law of the Sea, Vol. II, 835 (841); *Wolfrum*, Hohe See und Tiefseeboden (Gebiet), in: Graf Vitzthum (ed.), Handbuch des Seerechts (2006), 287 (MN. 29).

[111] *Engert-Schüler*, Völkerrechtliche Fragen des Eigentums an Wracks auf dem Hohen Meer (1979), 59.

conventions."[112] Thus, the above-outlined requirements could only be relied upon as essential elements of the term "ship" as used in UNCLOS when they would be in line with the object and purpose of that Convention. In this respect, it should be noted that application of the preconditions set out above would imply a rather broad understanding of the term "ship", since they do not refer to technical criteria such as minimum tonnage or the like. Reference being made to such broad preconditions is arguably compatible with the general purpose of UNCLOS. As stated above, the drafters of the Convention attempted to negotiate a set of rules and principles that would essentially cover all marine and maritime issues. Unlike other international treaties, UNCLOS does thus not pursue a single specific purpose which would necessitate reliance of a narrow definition. Rather, it tries to regulate all conceivable uses of the sea in a comprehensive way. Consequently, it is submitted that application of the following broad definition of the term "ship" is appropriate in the context at hand: For the purpose of UNCLOS, a ship is any self-propelled device capable of being used for maritime navigation and as a means of transportation on water of goods and/or people.

5. Can GROOM Gliders be Considered as Ships?

a. Self-propelled and Capable of Being Used for Maritime Navigation

Before ascertaining whether a GROOM glider can be used for maritime navigation clarification of the terms "navigation" and "self-propulsion" is required. "Propulsion" is described by the Oxford Dictionary as "the action of driving or pushing forward."[113] In order to consider a craft as self-propelled it is therefore necessary that the craft has an engine or propulsion enabling it to move within the space. GROOM gliders are propelled by a so-called "buoyancy engine" and are thereby achieving forward speeds up to 40 km/d. GROOM gliders can thus be considered as self-propelled crafts. It remains to be examined, though, whether these devices can be used for maritime navigation. According to the Oxford Dictionary, "navigation" is defined as the skill or the process of planning a route for a ship or other vehicle and taking it there.[114] Since GROOM gliders are self-propelled, an argument could be made that they can in turn be used for maritime navigation. However, such a contention would not sufficiently take into account the most essential criterion of navigation, *i.e.*, the ability to steer the craft in real-time. Generally, gliders are steered by algorithms written in advance. While it is possible to change these algorithms when gliders are on the surface, this is not the case anymore once the devices have begun to move on their programmed underwater routes. It is questionable whether the limited ability of the operator to influence the way of a glider is sufficient to consider it as a craft which can in principle be used for maritime navigation. As set out above, navigation generally includes the planning of a route of a craft *and* taking it there. Based on this definition, the operator of the craft must be able to steer the craft in real time during the whole journey – a requirement that does not exist in the case of gliders. Even if one would assume for the sake of argument that gliders can in principle be used for maritime navigation because it is possible to precisely predict their path by writing an algorithm, attention should be given to the fact that gliders, due to their relative low speed, are highly vulnerable to currents so that in many cases a planned and ordered journey is not possible.

The interpretation advocated here, according to which a glider cannot be considered as a ship under the international law of the sea, is supported by judgments rendered by United States domestic courts. In *Steedman v. Scofield*, Justice Sheen had to assess whether a jet ski constitutes a ship in terms of law. The decisive factor in this litigation was whether the jet ski was "used in navigation". Justice *Sheen* held that "navigation is planned or ordered movement from one place to another."[115] According to him, "(t)he navigator must be able (1) to determine the ship's position and (2) to determine the

[112] *Treves*, Navigation, in: Dupuy/Vignes, A Handbook on the New Law of the Sea, Vol. II, 835 (841).

[113] http://oxforddictionaries.com/definition/english/propulsion?q=propulsion (last visit on 24 September 2013).

[114] http://oxforddictionaries.com/definition/english/navigation?q=navigation (last visit on 24 September 2013).

[115] *Steedman v. Scofield and another*, Lloyd's Law Reports 2 (1992), 163 (164).

future course or courses to be steered to reach the intended destination."[116] Even though these requirements may well be considered as being present in the case of a jet ski, Justice *Sheen* did not classify such a craft as ship since "the phrase 'used in navigation' conveys the concept of transporting persons or property by water to an intended destination." In *Regina v. Goodwin*, it was the Court of Appeal that again had to decide whether a jet ski could be considered as a ship according to the United States Merchant Shipping Act. After examining the relevant case law the court concluded that it would be correct to require "ordered progression over the water from one place to another."[117] Additionally, "(t)he words 'used in navigation' exclude from the definition 'ship or vessel' craft that are simply used for having fun on the water without the object of going anywhere, into which category jet skis plainly fall."[118] The reluctance of the two courts to treat a jet ski as a ship and to rely on a "not-just-for-fun" criterion can be explained by the fact that both courts adjudicated on the applicability of the Merchant Shipping Act.[119]

b. As a Means of Transportation on Water of Goods and/or People

Assuming arguendo that gliders can be used for maritime navigation, these devices still would have to fulfil the second requirement of the above-given definition. Whether a GROOM glider has the capacity to be used as a means of transportation on water of goods and/or people is highly doubtful, though. In order to be used as a means of transportation a craft must have stowage or at least be construed in way that it is possible to carry goods or people on it from one place to another. While GROOM gliders indeed have a hollow body in which small goods could be transported, it is arguably further necessary that the craft concerned is employed with the intention to use it as a means of transportation. This is supported by a recent judgment of the United States Supreme Court. In Stewart v. Dutra Construction Company, the Supreme Court held that it is not required that a watercraft is exclusively or primarily used as a means of transportation to qualify as a vessel.120 However, GROOM gliders are solely used for the purpose of collecting data from the sea. It is not even a subsidiary purpose of GROOM gliders to employ them as a means of transportation. Even if one would argue that GROOM gliders are subsidiarily used as a means of transportation because they carry the needed sensor with them, one must still take into account that the transport of the sensor is not conducted for the purpose to carry it from one place to another, but for the purpose to make the actual work possible.

GROOM gliders thus cannot be qualified as ships.

II. Can GROOM Gliders be Considered as Submarines or other Underwater Vehicles?

1. GROOM Gliders as Submarines

UNCLOS again does not define any of these terms. The Oxford Dictionary describes submarine as a warship with a streamlined hull designed to operate completely submerged in the sea for long periods,

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[116] *Steedman v. Scofield and another*, Lloyd's Law Reports 2 (1992), 163 (164).

[117] *Regina v. Goodwin*, The Weekly Law Reports 1 (2006), 546 (557).

[118] *Regina v. Goodwin*, The Weekly Law Reports 1 (2006), 546 (557).

[119] *Regina v. Goodwin*, The Weekly Law Reports 1 (2006), 546 (557): "Those provisions, as the title "Merchant Shipping" suggests, are primarily aimed at shipping as a trade or business. While it may be possible to extend the meaning of ship to vessels which are not employed in trade or business or which are smaller than those which would normally be so employed, if this is taken too far the reduction can become absurd."

[120] *Stewart v. Dutra Construction Company*, 125 S.Ct. 1118 (1128).

equipped with an internal store of air and a periscope and typically armed with torpedoes and/or missiles, or as a submersible craft of any kind.121 In contrast, Kazuhiro Nakatani has defined submarine as a vessel "capable of operating independently both above and beneath the surface of the sea."122 Even though in the majority of cases submarines belong to a State's navy, Art. 20 UNCLOS does not exclude submarines employed for non-governmental purposes from the scope of that provision. This was already clarified by the ILC in its commentary to the draft articles concerning the international law of the sea. It pointed out that draft Art. 15 is "equally applicable to commercial submarines, if these ships are ever re-introduced."123 That said, all relevant sources clearly act on the assumption that only vessels or ships may qualify as submarines in terms of the international law of the sea. A typical feature of a submarine thus is that it is equipped with a crew and a master (i.e., capable of being used as a means of transportation on water of goods and/or people) and that it is used for maritime navigation. As shown above, the better reasons militate in favour of accepting that GROOM gliders to not fulfil these requirements.

2. GROOM Gliders as Underwater Vehicles

The question remains whether GROOM gliders are to be considered as an underwater vehicle. The Oxford Dictionary describes "vehicle" as a thing used for transporting people or goods.[124] Against this background, and with reference to the remarks already made above as to whether gliders can be used for transportation, it would seem to be a logical conclusion that for the same reasons GROOM gliders cannot be classified as underwater vehicles. The more surprising it is that according to a view in legal doctrine gliders ought to be considered as submarines, or other underwater vehicles respectively.[125] Unfortunately, the reasons for this assumption are not given, which is why it is not possible to engage in a detailed discourse with the proponent of this view. Theoretically, it could be argued that the *telos* of Art. 20 UNCLOS supports the notion that gliders could come within the scope *ratione materiae* of underwater vehicles. According to *Richard Barnes*, it is the purpose of Art. 20 UNCLOS to "balance navigational interests with the safety and security concerns of coastal States."[126] However, even if one would follow such a broad interpretation, it should be noted that if GROOM gliders can be classified as "scientific research equipment", Part XIII Section 4 UNCLOS ought to be considered as *lex specialis* to Art. 20 UNCLOS (with the effect that the question raised above can be left unanswered).

3. GROOM Gliders as Scientific Research Equipment

UNCLOS does not define the term "scientific research equipment" (hereafter SRE)[127] which makes it again necessary to make recourse to the ordinary meaning of the term. According to the Oxford

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[121] http://oxforddictionaries.com/definition/american_english/submarine?q=submarine (last visit 23 September 2013).

[122] *Nakatani*, Submarines, in: Wolfrum (ed.), Max Planck Encyclopedia of Public International Law (2012), Vol. IX, 649 (MN 1).

[123] *Commentary to the Articles concerning Law of the Sea*, YbILC (1956), Vol. II, 273.

[124] Available at: http://oxforddictionaries.com/definition/american_english/vehicle?q=vehicle (last visit on 23 September 2013).

[125] *Kraska*, The Journal of Ocean Technology 5 (2010), 44 (51).

[126] *Barnes*, Commentary on Article 20, in: Proelss (ed.), United Nations Convention on the Law of the Sea – A Commentary, Forthcoming,

[127] *Cf.* Art. 258 UNCLOS.

Dictionary, "equipment" refers to items necessary for a particular purpose.[128] Consequently, scientific research equipment can be defined as encompassing all items necessary for the conduct of a scientific research project. This definition is supported by statements submitted in legal doctrine.[129] As SRE is used in Art. 258 UNCLOS in juxtaposition with the term "installation", both concepts must be distinguished from each other. According to an ordinary understanding of the text, "[i]nstallations are the larger types of the devices (not being ships) used for conducting scientific research; they include in any case all devices which are capable of being manned."[130] Contrary to the term "installations", "[t]he term 'equipment' would then cover all other (smaller) research devices which are used separately from ships, for example instrument packages."[131] Accordingly, one of the central differences between "installations" and "equipment" is the size of the objects concerned. This reading is supported by Article 260 of the LOS Convention according to which safety zones may be established around scientific research installations. By not making any reference to scientific research equipment, this provision clarifies that "installations" pose a greater danger to international navigation or other uses of the sea, which necessarily implies a certain size of the objects.[132] A further point of reference is the duration of deployment. It has been elaborated that "while installations are intended to remain in place for an extended period of time or even permanent, equipment has the connotation of being quickly deployed and removed in the course of a single experiment".[133] Finally, in addition to the size and duration of the deployment, the intended functions are also to be regarded as one of the relevant factors. While the word "equipment" usually denotes objects used for a specific purpose or activity,[134] installations "[m]ay consist of a number of various parts with a variety of functions."[135]

Due to their relative small size, their flexible deployment (as far as the time factor is concerned) as well as their deployment for the use of data collection, GROOM gliders are to be considered as SRE.

E. Operational Requirements

After having assessed to which category GROOM activities are to be assigned and which status is attached to GROOM gliders, it is necessary to analyse the legal framework applicable to the operation of the devices concerned. In doing so, as it is impossible to analyse all conceivable cases, focus will be put on the general rules and principles applicable to MSR activities. For instance, Art. 240 (c) UNCLOS requires that MSR activities shall not unjustifiably interfere with other legitimate uses of the sea. Whether and to what extent an activity unjustifiably interferes with another legitimate use of the sea can only be examined on a case-by-case basis, though, taking into account the specific facts of the individual case.

I. Requirements for Marine Scientific Research Activities

[128] Available at: http://oxforddictionaries.com/definition/american_english/equipment?q=equipment (last visit on 23 September 2013).

[129] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 137.

[130] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 235

[131] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 235.

[132] *Soons*, Marine Scientific Research and the Law of the Sea (1982), 235 See also *Bork*, Der Rechtsstatus von unbemannten ozeanographischen Messplattformen im internationalen Seerecht (2011), 66 *et seq*.

[133] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 138.

[134] *Garner*, *Black's Law Dictionary*, (1999), 558.

[135] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 138.

1. Need for Prior Consent

The regime of MSR is designed in a way that the researching State cannot lawfully undertake MSR activities within maritime zones over which another coastal State exercises sovereignty, or jurisdiction respectively, without the prior consent of that State. This centrally important conclusion is embodied in Art. 245 and Art. 246 II UNCLOS (concerning the territorial sea on the one hand and the EEZ on the other). However, whereas the coastal State is generally free to grant its consent to MSR activities within its territorial sea, UNCLOS sets limits to this discretion as far as the EEZ is concerned. If a researching State seeks to conduct a MSR project in the EEZ of a foreign coastal State, the coastal State shall, in normal circumstances, grant its consent to that project. Circumstances are considered as "normal" as long as there are no hostilities or serious tensions between the two States.136 Thus, if consent is asked for in times of peace, the coastal State is under a de facto obligation to consent to the realization of the MSR project.

That said, according to the lex specialis contained in Art. 246 V UNCLOS the coastal State is entitled to withhold its consent if one of the situations laid down in that provision is given. Art. 246 V UNCLOS reads as follows:

> Coastal States may however in their discretion withhold their consent to the conduct of a marine scientific research project of another State (…) in the exclusive economic zone (…) if that project:
>
> (a) is of *direct significance for the exploration and exploitation of natural resources*, whether living or non-living;
>
> (b) involves drilling into the continental shelf, the use of explosives or the introduction of harmful substances into the marine environment;
>
> (c) involves the construction, operation or use of artificial islands, installations and structures referred to in articles 60 and 80;
>
> (d) contains *information* communicated pursuant to article 248 *regarding the nature and objectives of the project which is inaccurate* or if the *researching State* (…) has *outstanding obligations to the coastal State from a prior research project*.

Save from subparagraph (d), it is hardly imaginable that an activity undertaken within GROOM fulfills one or more of the criteria laid down in Art. 246 V UNCLOS. According to Art. 248 and 250 UNCLOS, the State intending to undertake MSR within the maritime zones of a foreign coastal State has to ask for its consent six months in advance of the expected starting date of the project, and it must communicate the application to the coastal State via official channels.

If it is envisaged to undertake MSR activities on the high seas, no prior consent of any coastal State is necessary. However, it must be emphasized that the researching entity must, of course, fulfill the requirements set forth by the researching State applicable to MSR activities on the high seas. Even though prior consent is not needed if MSR is conducted on the high seas, it is strongly recommended that prior consent should be applied for in case GROOM activities are planned to take place near the EEZ of a foreign coastal State. Due to the vulnerability to currents it is well possible that the gliders concerned "drift" into the EEZ of that State. Although in such a situation entry into the foreign EEZ is unintentional, Art. 246 II UNCLOS is, according to its wording, not limited to activities that are undertaken deliberately, which is why unintentional entry without prior application for consent constitutes an infringement of the coastal States jurisdiction.

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[136] *Churchill/Lowe*, The Law of the Sea, 3rd ed. 1999, 407.

2. General Principles for the Conduct of Marine Scientific Research

Concerning the general principles for undertaking MSR-related projects, Art. 240 and Art. 249 UNCLOS are of major importance. These provisions read as follows:

Article 240

In the conduct of marine scientific research the following principles shall apply:

(a) marine scientific research shall be conducted *exclusively for peaceful purposes*;

(b) marine scientific research shall be conducted *with appropriate scientific methods and means compatible with this Convention*;

(c) marine scientific research *shall not unjustifiably interfere with other legitimate uses of the sea* compatible with this Convention and shall be duly respected in the course of such uses;

(d) marine scientific research shall be conducted *in compliance with all relevant regulations adopted* in conformity with this Convention including those for the protection and preservation of the marine environment.

Article 249:

States and competent international organizations when undertaking marine scientific research in the exclusive economic zone or on the continental shelf of a coastal State shall comply with the following conditions:

(a) *ensure* the *right of the coastal State*, if it so desires, *to participate or be represented in the marine scientific research project*, especially on board research vessels and other craft or scientific research installations, when practicable, without payment of any remuneration to the scientists of the coastal State and without obligation to contribute towards the costs of the project;

(b) *provide the coastal State*, at its request, *with preliminary reports, as soon as practicable*, and with the final results and conclusions after the completion of the research;

(c) *undertake to provide access for the coastal State*, at its request, *to all data and samples derived from the marine scientific research project* and likewise to furnish it with data which may be copied and samples which may be divided without detriment to their scientific value;

(d) if requested, *provide the coastal State with an assessment of such data, samples and research results* or provide assistance in their assessment or interpretation;

(e) *ensure*, subject to paragraph 2, *that the research results are made internationally available through appropriate national or international channels, as soon as practicable*;

> (f) *inform* the coastal State *immediately of any major change in the research programme*;
>
> (g) unless otherwise agreed, *remove the scientific research* installations or *equipment once the research is completed*.

Most of the provisions laid down in these articles are almost self-explanatory. However, Art. 240 (d) UNCLOS is of crucial relevance as it requires the researching State to comply with all further rules adopted by the coastal State as long as these rules are itself in conformity with UNCLOS. Art. 245 clarifies this explicitly for MSR activities undertaken in the territorial sea of a foreign coastal State.

II. Requirements for Scientific Research Equipment

As outlined above, gliders employed within the framework of GROOM are to be classified as SRE. UNCLOS, in Part XIII, lays down special rules applying to such equipment. In particular, Art. 258 UNCLOS states 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 this Convention for the conduct of marine scientific research in any such area.

As the deployment and use of SRE is subject to the same conditions as laid down in UNCLOS for the conduct of MSR in general, it is necessary to seek the consent of foreign coastal States for the deployment and use of a glider if such a device shall be operated within the maritime zones under the jurisdiction of these States. Of further relevance is Art. 262 UNCLOS which reads as follows:

> Installations or equipment referred to in this section *shall bear identification markings indicating the State of registry* or the international organization *to which they belong* and *shall have adequate internationally agreed warning signals to ensure safety at sea and the safety of air navigation, taking into account rules and standards established by competent international organizations*.

Art. 262 thus clarifies that GROOM gliders must bear identification markings which enable third parties to identify the State of registry. It should be noted, though, that States are currently not obliged to maintain a public register for research equipment.[137] It is therefore submitted that the duty to register is fulfilled if it is possible for a third party to identify the *legal owner* of the glider (which is the research institute itself).[138] However, in order to avoid future disputes it is highly recommended to also indicate the researching State on the glider. Furthermore, Art. 262 demands that gliders are designed in conformity with rules and standards established by competent international organizations. No binding rules and standards have so far been adopted, though.

[137] Note that Art. 10 of the Draft Convention on the Legal Status of Ocean Data Acquisition Systems, Aids and Devices, which has not yet entered into force (and is not likely to do so in future), requires that States deploying or authorizing the deployment of ocean data acquisition systems (ODAS) shall establish a special register.

[138] *Cf. Bork*, Der Rechtsstatus von unbemannten ozeanographischen Messplattformen im internationalen Seerecht (2011), 132 *et seq.*

F. Responsibility and Liability

The fact that even research undertaken by a private entity is considered under UNCLOS as research undertaken by the "researching State" does not mean that the "researching State" is the only legal subject responsible and liable for infringements of other relevant laws and regulations, in particular those of foreign coastal States in whose maritime zones GROOM gliders have been deployed. Consequently, it is necessary to clearly determine which entity – State or private operator – holds the respective duties.

I. Responsibility and Liability of the State

Under which conditions a State is responsible for a certain act is generally determined by the law on State responsibility as embodied in the Articles on Responsibility of States for Wrongful Acts (hereafter Articles on State Responsibility or ASR).[139] By their very nature, these articles do not constitute legally binding law, as they are contained in an annex to a non-binding resolution of the UN General Assembly. However, it is generally accepted that a significant portion of the articles is nonetheless legally binding due to their status as customary international law. Already the PCIJ held in its first judgment that a State is responsible for a wrongful act committed by it.[140] The same court held a decade later that an act contrary to international law "would, by itself, directly involve international responsibility."[141] The ICJ ruled in the *Gabčíkovo Nagymaros Project* case that

> "(i)t is, moreover, well established that when a State has committed an internationally wrongful act, its international responsibility is likely to be involved whatever the nature of the obligation it has failed to respect."[142]

1. State Responsibility in a Nutshell

According to Art. 1 and Art. 2 ASR every act which is attributable to a State and that constitutes a breach of an international obligation of that State is to be considered as a wrongful act for which the State is internationally responsible. That these two elements are accepted under customary international law was underlined by the ICJ in the *Tehran Hostage Case* where it held that

> "it must [first] determine how far, legally, the acts in question may be regarded as imputable to the Iranian State. Secondly, it must consider their compatibility or incompatibility with the obligations of Iran under treaties in force or under any other rules of international law that may be applicable."[143]

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[139] UN Doc. A/RES/56/83 of 12 December 2001, Annex.

[140] *Case of the S.S. Wimbledon*, Judgment, PCIJ Series A No. 1, 15 (30).

[141] *Phosphates in Morocco*, Judgment, PCIJ Series A/B No. 74, 10 (22).

[142] *Gabčíkovo Nagymaros Project*, ICJ Reports 1997, 7 (para. 47). *Cf* also *Corfu Channel*, ICJ Reports 1949, 4 (23); 19

[143] *United States Diplomatic and Consular Stuff in Tehran,* ICJ Reports 1980, 3 (para. 56).

Art. 4 and 8 ASR contain the most relevant requirements that ought to be fulfilled in order to attribute an act to a State. Due to their official nature, a State is responsible for any act of its organs (cf. Art. 4 ASR). Already in 1902, an arbitral tribunal held in the *Salvador Commercial Company* Case that

> "a State is responsible for the acts of its rulers, whether they belong to the legislative, executive, or judicial department of the Government, so far as the acts are done in their official capacity."[144]

The ICJ confirmed this ruling in the *Case concerning Difference Relating to Immunity from Legal Process of a Special Rapporteur of the Commission on Human Rights* by stating that

> "(a)ccording to a well-established rule of international law, the conduct of any organ of a state must be regarded as an act of that state. This rule, which is of a customary character, is reflected in Article 6 of the Draft Articles on State Responsibility [now Art. 4 ASR]."[145]

In contrast, Art. 8 ASR addresses the question under what circumstances acts of non-state actors, *i.e.*, private persons, can be attributed to a State. According to this article this is the case if the acts in question are undertaken on behalf of that State, or conducted under the control or direction of the State. The customary status of this article was recently ascertained by the ICJ in its *Srebrenica* judgement.[146]

To summarize, an act contrary to an international obligation of a State entails the responsibility and liability of that State when the acts in question can be attributed to it. This is the case if the acts are undertaken by a State organ or by a private person acting on behalf of the State, or if the act is undertaken by private persons over which the State exercises (effective) control.

2. Law on State Responsibility and UNCLOS

The general law on State responsibility described above is applicable only to the extent to which no special rule is applicable to the case at hand. Art. 263 UNCLOS contains a rule regulating responsibility and liability of a State with regard to MSR. This provision stipulates in its paragraph 1 that "States and competent international organizations shall be responsible for ensuring that MSR, whether undertaken by them or on their behalf, is conducted in accordance with this Convention." Hence, assuming that Art. 263 UNCLOS is a lex specialis to the general rules on State responsibility, it seems to exclude situations in which the State only exercises effective control over an act undertaken by private persons. However, on closer observation no conflict between the general rules on the one hand and Art. 263 UNCLOS on the other exists. Art. 263 UNCLOS must be read in conjunction with Art. 304 UNCLOS which stipulates that "the provisions of this Convention regarding responsibility and liability for damage are without prejudice to the application of existing rules and the development of further rules regarding responsibility and liability." This underlines that the drafters of UNCLOS were aware that the ILC was at the same time working on their Draft articles on State responsibility. With Art. 263 UNCLOS they adopted a rule codifying the law on State responsibility as it stood at the time (following the ICJ's judgment in the Tehran Hostage Case) but left the issue of responsibility and liability of researching States open for further development by adopting Art. 304 UNCLOS. As one distinguished authority on the law of the sea wrote:

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[144] *The Claims of Rosa Gelbtrunk and the "Salvador Commercial Company"*, Salvador v United States, Award of 2nd and 8th May 1902, RIAA Vol. XV, 455 (477).

[145] *Difference Relating to Immunity from Legal Process of a Special Rapporteur of the Commission on Human Rights*, Advisory Opinion, ICJ Reports 1999, 62 (para. 62).

[146] *Application of the Convention on the Prevention and Punishment of the Crime of Genocide*, ICJ Reports 2007, 43 (para. 398).

> "The International Law Commission currently has on its work program the codification of the rules governing State responsibility. In 1980 the Commission adopted (…) Part 1 of this work (…). It is continuing its work (…). The Commission also has under examination the topic of international liability for injurious consequences arising out of acts not prohibited by international law. Article 304 thus reflects that these two topics are under active consideration by the International Law Commission, and that the provisions of the Convention regarding responsibility and liability for damage are to be read subject to developments in the law."[147]

Consequently, Art. 304 UNCLOS clarifies that Art. 263 UNCLOS must be interpreted according to Art. 31 III (c) VCLT in accordance with the general rules on State responsibility as codified in the ASR. Any new development in the law on State responsibility is therefore automatically applicable to the law of the sea and in particular to Art. 263 UNCLOS.

3. Scope of Art. 263 UNCLOS

a. Outline of Art. 263 UNCLOS

According to Art. 263 I UNCLOS, States and competent international organization have the duty to ensure that MSR projects undertaken by them or on their behalf are conducted in accordance with the rules and principles codified in UNCLOS. Paragraph 2 rules that a State has to provide compensation for damages to the researching State or competent international organization resulting from an act contrary to UNCLOS. Whereas Art. 263 I UNCLOS contains a mere *duty to ensure*, Art. 263 II UNCLOS is wider in its scope by clarifying that any unlawful interference with MSR projects conducted by a third party entails the responsibility of the inferring State(s). In particular, Art. 263 II UNCLOS sanctions cases of overregulation by coastal States. Art. 263 III UNCLOS makes it clear that the regime of Part XII UNCLOS, which is concerned with the protection of the marine environment, is also applicable to MSR-related activities, thereby underlining that coastal States are under an obligation to take pollution issues into account when deciding upon and monitoring third State research activities within their maritime zones.

b. The "Researching State" is not Congruent with the Responsible State

As outlined above, the term "researching State" covers also private entities undertaking MSR projects. Yet, when used within the framework of the law of State responsibility, the term "State" does, in general, not encompass private entities. Only under the preconditions of Art. 8 ASR are acts of private persons attributable to a State. In cases where attribution fails, a State is not responsible for acts undertaken by private persons. However, Florian H. Th. Wegelein has taken the view that

> "the greater significance of Article 263 (1) (…) lies in the fact that it explicitly imputes all wrongful acts arising in direct relation to the conduct of marine scientific research to the researching State. This essentially means that the general rule under international law,

[147] *Nordquist et al*, United Nations Convention on the Law of the Sea 1982 – A Commentary, Vol. V, 1989, MN. 304.3.

> namely, the principle of effective control, is superseded by the obligation to ensure compliance."[148]

Assuming that *Wegelein* shares the same understanding of "researching State" that is advocated here, his statement seems difficult to support. It confuses issues of attribution on the one hand and of due diligence responsibility on the other and thereby ignores the clear distinction between these two categories that is generally accepted in international practice and legal doctrine. The ICJ recently pointed out that responsibility based on attribution and responsibility due to a violation of a due diligence provision ought to be distinguished and are mutually exclusive.[149] Consequently, a State can only be held responsible for infringements of UNCLOS as "researching State" if the acts in question can be attributed to it. In case of a violation of a due diligence rule – as the "duty to ensure" is[150] –, the "researching State" remains responsible for that violation only to the extent it has infringed the duty concerned. This was also highlighted by ITLOS in its recent advisory opinion as to the *Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area*. The Tribunal stated that

> "not every violation of an obligation by a sponsored contractor automatically gives rise to the liability of the sponsoring State. Such liability is limited to the State's failure to meet its obligation to "ensure" compliance by the sponsored contractor."[151]

II. Responsibility and Liability of Operators

As outlined above, the fact that even research undertaken by private research entities is considered as research undertaken by the "researching State" does not mean that the State is the only person responsible and liable for infringements. Rather, if the acts leading to an infringement cannot be attributed to that State in accordance with the accepted rules of attribution, the operator remains responsible and liable for these acts. However, public international law is no longer the legal order relevant for determining whether the act in question was contrary to the law or not. Rather, the domestic legal orders of the pertinent coastal States become the relevant yardstick for this determination. Whose domestic legal order is applicable in the respective case, is determined by the rules of private international law.

G. Summary

GROOM is to be classified as MSR, and GROOM gliders are to be considered as research equipment in terms of the international law of the sea as codified in UNCLOS. The deployment of GROOM gliders is only lawful if and to the extent to which it is done in conformity with UNCLOS requirements. This is particularly relevant if gliders are deployed within the EEZ of a foreign coastal State. As far as responsibility and liability are concerned, even though the research is formally conducted by the

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[148] *Wegelein*, Marine Scientific Research – The Operation and Status of Research Vessels and other Platforms in International Law (2005), 350.

[149] *Application of the Convention on Prevention and Punishment of the Crime of Genocide*, ICJ Reports 2007, 43 (MN. 382).

[150] *Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area*, Advisory Opinion, 1 February 2011, MN. 110.

[151] *Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area*, Advisory Opinion, 1 February 2011, MN. 109.

researching State, it is possible to hold the researching institutions responsible and liable for certain infringements. Against this background and in order to diminish the allegation of negligence by domestic courts, it is recommended that the deployment and operation of GROOM gliders is undertaken in line with accepted codes of conduct as published by, e.g., the Society for Underwater Technology. That said, the special features of the devices deployed and operated within the framework of GROOM suggests the adoption of a specific code of conduct that should be drafted and, ultimately, submitted to the competent organisations such as the IOC by the project partners.