

Applicability of the right of innocent passage to maritime autonomous surface ships: Exploring the potential role of advisory opinions

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Abstract

The initial discussions at the International Maritime Organization (IMO) and academia have naturally centred around the compliance of the existing safety of navigation standards to Maritime Autonomous Surface Ships (MASS) operations thus far, while the broader implications for maritime security and international navigational rights such as innocent passage remain less explored. This article delves into the intricate legal interplay between MASS and the right of innocent passage under the UN Convention on the Law of the Sea (UNCLOS). In this respect, this article aims to analyse whether fully autonomous ships are entitled to the right of innocent passage. Moreover, considering the scope of IMO's mandate, this article proposes a cautious approach regarding the interpretation of fundamental principles of UNCLOS as opposed to the Convention's more flexible provisions, such as those germane to the regulation of shipping, while recognizing IMO as the appropriate plat-

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form for such deliberations. Against this backdrop, this article suggests revising the IMO's current classification of autonomy levels in order to address the potential concerns of coastal States and prevent legal tension with UNCLOS. Without such a revision, different practices may arise among coastal States regarding innocent passage. As a last resort, seeking an advisory opinion from the International Court of Justice by the IMO could clarify the legal status of MASS within the UNCLOS framework, especially regarding the right of innocent passage for fully autonomous vessels.

Keywords: UNCLOS, Innocent passage, MASS, International Court of Justice, IMO, Advisory opinion

1. Introduction

Maritime Autonomous Surface Ships (MASS) present numerous advantages ranging from offering better safety to being cost-effective, yet they also introduce legal complexities. This is primarily because the current legal framework assumes that the human element is physically present on board to perform certain functions. Unsurprisingly, this assumption is challenged by the nature of MASS.¹ The present legal architecture, first and foremost, includes the UN Convention on the Law of the Sea, 1982 (UNCLOS or the Convention),² and a myriad of legal instruments from the International Maritime Organization (IMO). Moreover, for

1. Henrik Ringbom and Robert Veal, 'Unmanned ships and the international regulatory framework' (2017) *Journal of International Maritime Law*, 23 (2), 101.

2. United Nations Convention on the Law of the Sea (UNCLOS) adopted 10 December 1982, entered into force 16 November 1994. 1833 UNTS 396.

the successful realisation of MASS operations, the Vienna Convention on the Law of Treaties, 1969 (VCLT)³ is also relevant in discussions regarding adopting new standards and amending or interpreting the existing rules.

Early discussions at the IMO and academia on MASS have naturally focused on the degree to which existing technical safety rules and standards can adapt to the realisation of autonomous operations. The relevant research appears to indicate that the ever-evolving autonomous ship-building technology is already advanced enough to enable MASS operations. After this initial first step which is mostly relevant to IMO's mandate and can be addressed therein, it might be plausible to examine the international navigational rights of MASS under the law of the sea regime with a view to introducing international navigation of MASS.

According to the 1948 Convention on the IMO,⁴ the Organization, as a specialised agency of the UN, has a worldwide mandate for the safety, security, and environmental performance of international shipping.⁵ It is widely recognised that the term 'competent international organization' in UNCLOS, when used in a singular form, refers specifically to the IMO. The IMO itself has also confirmed this approach as early as 1987. In the context of the innocent passage, Article 22(3) on the sea lanes and traffic separation schemes in the territorial sea refers to the recommendations of the competent international organization. It is well established

3. Vienna Convention on the Law of Treaties, adopted 23 May 1969, entered into force 27 January 1980. 1159 UNTS 331.

4. Convention on the International Maritime Organization (adopted 6 March 1948, entered in force 17 March 1958) 289 UNTS 48.

5. Murat Sumer, 'Overcoming the legal challenges of Maritime Autonomous Surface Ships (MASS) and compliance with UNCLOS and SOLAS: designation of a remote Master to assume the safety duties of a Master' (2023) Doctoral Thesis, Maastricht University], Maastricht University. <https://doi.org/10.26481/dis.20230411ms>, 10.

that the said reference alludes to the IMO.⁶

As per UNCLOS, the IMO is identified as the appropriate platform for the development of international shipping standards.⁷ The Convention, by referring to abstract rules to be developed at the IMO, deliberately avoids elaborating on the specific duties of States. In this manner, the drafters of UNCLOS successfully circumvented ‘freezing’ obligations and certain conditions at a particular point in time.⁸

Although UNCLOS was not adopted under the auspices of the IMO, the Convention’s generic shipping terms and provisions relevant to the international shipping regulatory framework can be interpreted by the IMO. This interpretative power aligns with the IMO’s mandate, which is further reinforced by UNCLOS itself. Having said that, it should not be overlooked that neither the IMO’s constituent treaty nor UNCLOS empower the IMO to deal with fundamental principles of the law of the sea. In this context, thus, a crucial question arises as to whether UNCLOS could accommodate all forms of MASS operations and to what extent the IMO can be the appropriate platform to address the pending issues.⁹

Against this backdrop, this article will explore the potential role of the IMO’s generally accepted international rules or standards (GAIRS) in addressing the legal tensions with UNCLOS. Furthermore, in light of

6. George K Walker, “Defining Terms in the 1982 Law of the Sea Convention IV: The Last Round of Definitions Proposed by the International Law Association (American Branch) Law of the Sea Committee,” (2005), 36 California Western International Law Journal 1, 28; and Andrianov, V. I., “The role of the International Maritime Organization in implementing the 1982 UNCLOS,” (1990), 14 Marine Policy 2, 120.

7. James Harrison, *Making the Law of the Sea* (CUP, 2011) 198-199.

8. Patrick Griggs, ‘International and Regional Organisations’ (2020) Journal of International Maritime Law - Volume 26 - Issue 6.

9. Baris Soyer, ‘Chapter 8 - Autonomous Vessels and Third-party Liabilities. The Elephant in the Room’, in Baris Soyer, *New Technologies, Artificial Intelligence and Shipping Law in the 21st Century* (Routledge, 2020), 114-115.

the foregoing, this article will also examine the interrelationship between the UNCLOS regime and fully autonomous ships (classified as MASS Degree IV by IMO), particularly concerning innocent passage and its implications for the IMO regulatory framework. Additionally, this article will propose recommendations to enable the IMO to address the relevant concerns of its Member States.

2. The role of the IMO in the introduction of MASS operations

Numerous maritime disasters have led to significant regulatory actions, whether in the form of amendments or the adoption of new treaty instruments over the years. For instance, the Titanic tragedy was the catalyst for the adoption of the International Convention for the Safety of Life at Sea (SOLAS).¹⁰ The Torrey Canyon incident exposed gaps in the existing liability and compensation framework, resulting in the formation of the IMO's Legal Committee (LEG). The capsizing of the Herald of the Free Enterprise ferry necessitated the introduction of the International Safety Management (ISM) Code.¹¹ Similarly, spill disasters such as the Exxon Valdez, Erika, and Prestige led to the phasing out of single-hull tankers.¹²

In the context of MASS, the IMO appears to adopt a different approach. Despite the absence of maritime incidents prompting immediate

10. International Convention for the Safety of Life at Sea, 1974, SOLAS as amended (adopted on 1 November 1974, entered into force on 25 May 1980). 1184 UNTS 3.

11. The ISM Code was adopted in 1993. It became mandatory with the entry into force of the 1994 amendments to the SOLAS Convention on 1 July 1998, which introduced Chapter IX to the Convention.

12. Frederick J Kenney, 'Global Regulation of Ships: The Future of Development and Implementation at the International Maritime Organization' (2018) 42 Tul Mar LJ 259.

action, the IMO has already undertaken a Regulatory Scoping Exercise (RSE) and has defined various degrees of autonomy in MASS, which will be discussed in detail below.¹³

2.1 Regulatory scoping exercise

IMO performed an RSE to examine the compliance of the present IMO Conventions and observe how they might apply to vessels that employ varying levels of automation. In this regard, apart from the Marine Environment Protection Committee (MEPC), other IMO Committees that have a role in adopting/amending treaty instruments reviewed the existing IMO legal framework. The Maritime Safety Committee (MSC), LEG, and Facilitation Committee (FAL), concluded their review exercise, respectively, in May 2021, July 2021, and May 2022. IMO's RSE is seen as a first step in analysing IMO instruments to identify whether they apply and/or prevent MASS operations.¹⁴

The main aim of the RSE was to evaluate the adequacy of the IMO's legal framework in relation to MASS. The RSE process was basically designed to create a foundational understanding of MASS. Additionally, the RSE's focus was on pinpointing the applicability of IMO instruments within its purview, rather than on the creation of new regulations. It is also noteworthy that IMO committees did not investigate the UNCLOS as it is not under their remit. Hence, the RSE is seen as a data gathering exercise to identify compliance issues with IMO treaty instruments rather than an attempt to regulate MASS. The conclusion of RSEs of the respective committees identified several high-priority issues cutting across mul-

13. David Molina Coello, 'Is UNCLOS Ready for the Era of Seafaring Autonomous Vessels?' (2023) 10 *The Journal of Territorial and Maritime Studies* 1, 34.

14. Available at <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx>>.

title IMO treaties, such as the development of MASS definition and the clarification of the relevant terminology especially concerning Degrees III and IV.¹⁵ Initial studies, including IMO's RSE, suggest that IMO conventions are unlikely to have significant direct conflicts or insurmountable obstacles to the introduction of autonomous ships.¹⁶

The establishment of the Joint MSC-LEG-FAL Working Group on MASS (JWG) in 2022 serves as an important milestone to tackle common key issues identified through RSE.¹⁷ Drawing from the results of these RSEs carried out by the three committees and any additional recommendations from these committees, the JWG is tasked with certain directives such as creating a work plan that considers and integrates the roadmaps developed by the committees and provides advice to the committees.¹⁸

The legal challenges and solutions in MASS certainly vary, based on different elements such as crewing, crew location, and autonomy level. Therefore, differences in these elements need to be addressed separately rather than trying to come up with a generic fit for all approaches.¹⁹ IMO intends to adopt a non-mandatory MASS Code in 2025. Moreover, IMO aims to use the said non-mandatory instrument as a foundation for a mandatory goal-based MASS Code, estimated to enter into force in 2028.²⁰

15. Available at <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx>>. See also Sümer (n 5) 185

16. Henrik Ringbom, 'Regulating Autonomous Ships—Concepts, Challenges and Precedents' (2019) *Ocean Development & International Law*, 50:2-3, 141-169, 161.

17. See MSC.1/Circ.1638, LEG.1/Circ.11, and FAL.5/Circ.49.

18. IMO Repository, Joint MSC-LEG-FAL Working Group on MASS, 2nd session, Report of the Joint Working Group, MASS-JWG 2/WP.1, 21 April 2023, 2-3.

19. Ringbom (n 16) 142-3.

20. Available at <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx>>.

2.2 Degrees of automation

Basically, the concept of autonomy relates to how tasks are divided between human elements and automated systems. This encompasses a wide range, from human elements on board to completely autonomous systems operating independently (i.e., unmanned). As functions become more autonomous, there is a significant departure from conventional navigation, which raises inevitable legal questions.²¹

At the outset, it is important to note that there may be diverse types of vessels, each with varying autonomous capabilities or serving different purposes. Therefore, from the regulatory standpoint, it is not advisable to use generic definitions for such vessels; instead, specific reference points need to be established. In this context, the terminology developed by the IMO, namely ‘MASS’, is a good starting point as it excludes several types of ships with autonomous capabilities such as submersible and military ships.

In 2017, the IMO recognised that MASS could encompass a range of automation levels. This includes ships with partially automated systems that assist human crews, as well as fully autonomous systems capable of handling all aspects of a ship’s operations without any human involvement. To facilitate the RSE of the respective IMO committees, in 2018, during the 99th session, MSC, being the lead committee regarding MASS, commenced the development of a framework for the RSE.

MSC defined the term MASS as a ship capable of operating with varying degrees of human involvement. This involved a preliminary definition of MASS and the classification of autonomy levels. It has been rightly noted that MASS is capable of operating at various levels of autonomy, potentially encompassing multiple degrees, within a single journey. The MSC identified four levels of autonomy to aid in this review exercise.

21. Ringbom (n 16) 147.

Both the LEG and the FAL utilised the glossary developed by the MSC for their respective RSEs. This ensured a consistent approach across the various IMO committees.²²

Significantly, the IMO identified four degrees of autonomy to be used during its RSE. This classification is indeed important for analysing the applicability of existing regulatory frameworks (i.e., UNCLOS and IMO Conventions). In this respect, Degree I refers to ships with automated processes and decision support. However, seafarers are on board. Basically, they are the current generation of ships.²³ Degree II indicates a remotely controlled ship with seafarers on board. Notably, seafarers are on board to assume control and operate the ship when needed.²⁴ Degree III denotes remotely controlled ships. However, in this category, there are no seafarers on board.²⁵ Degree IV is determined exclusively for fully autonomous ships. Perhaps, rather oddly, to emphasise the differences with other degrees, it was suggested that there is no human element either on board or at the Remote-Control Centre (RCC) as it is noted that the operating system of Degree IV²⁶ is capable of determining actions by itself.²⁷

In this regard, Degree IV significantly differs from the other degrees of MASS as there is no human involvement at all. Hence, this highest

22. Maritime Safety Committee, Outcome of the Regulatory Scoping Exercise for the Use of MASS, MSC.1/Circ.1638, 3 June 2021; and Legal Committee, Outcome of the Regulatory Scoping Exercise and Gap Analysis of Conventions emanating from the Legal Committee with respect to MASS, LEG.1/Circ.11, 15 December 2021.

23. This mode of navigation has seafarers on board to operate and control its systems and functions. Certain operations may be automated and could operate unsupervised, but seafarers are ready to take control when necessary.

24. The ship is controlled and operated from RCC either on shore or another ship.

25. The ship is operated from an RCC, and no seafarers are present on board.

26. The ship's operating system can independently make decisions and actions demonstrating its maximum level of independence.

27. Available at <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx>>.

degree also complicates the regulatory landscape as it is uncharted waters for not only the IMO rules and standards but also for the broader law of the sea regime. The three categories (I to III) are centred on replacing key traditional functions performed by men on board with automation. However, the final category of Degree IV represents true autonomy.²⁸

Notably, it is expected that MASS will not always operate exclusively under a higher level of automation, at least for a considerable time. The autonomy level may be decreased depending on the location, maritime traffic density, navigational hazards, or coastal/port state's domestic requirements. Thus, presumably, the degree of autonomy would be dynamic and will change based on operational parameters or legal requirements rather than solely on the capability of a vessel. Therefore, it is highly probable that MASS will be designed to transfer control to either a minimal crew present on board or to a remote master (analogically ship master) located in RCC.²⁹ Moreover, it is also very likely that a master on board or a remote master, regardless of the mode of operation/level of autonomy, will be available at all times to intervene when required.³⁰ However, the current classification of levels of autonomy does not accommodate this scenario.

The JWG reviewed a document³¹ that suggested redefining the acronym MASS with a broader scope as 'MASS and Systems'. This proposed change is to encompass not only the ships themselves but also the systems used for autonomous operations on MASS and the systems for RCCs. During the discussion of this proposal, the JWG recognised that there was a divergence of views regarding definitions and terminology related to the concept of MASS. It was noted that addressing this issue

28. Ringbom (n 16) 149-151.

29. Soyer (n 9) 110-111.

30. Ringbom (n 16) 141-169; Report of the JWG (n 18) 10.

31. See MASS-JWG 2/3/2.

extended beyond merely agreeing on the term MASS and warranted further discussions. The JWG during its second session reached a consensus to maintain the use of the term MASS along with its existing definition while acknowledging the possibility of future modifications. Additionally, the JWG concurred that the issue of the definitions and terminology concerning MASS warrants further deliberation by the MSC in the process of developing the MASS Code. Furthermore, remarkably, the JWG agreed that the MSC should also discuss the various degrees of autonomy.³²

In this regard, the JWG recently observed that there should be a ‘human master’, for all modes of navigation, and the master of a MASS should have the means to intervene when needed. The JWG requested the relevant IMO committees to agree with the said understanding of the JWG that there should be a ‘human master’, either on board or at RCC, responsible for a MASS, regardless of the level of autonomy.³³ However, it is yet to be seen whether this appropriate request will be embraced by the MSC, LEG, and FAL. Arguably, this represents an opportunity for IMO to refine the current four degrees of autonomy.

3. UNCLOS

The law of the sea regime is a composite of various rules and principles specifically tailored to govern activities on or in respect of the oceans. It regulates all public law matters regarding ocean affairs, notably navigational rights on oceans, and aims to create a universally applicable legal

32. Report of the JWG (n 18) 10.

33. *Ibid.*, 12.

regime.³⁴ As a framework convention, UNCLOS consists of international rules and standards for providing maritime safety, security, and the protection of the marine environment through coastal, flag, and port State mechanisms.³⁵ In this respect, jurisdiction, as a reflection of sovereignty, alludes to the competence of States to exercise their authority over property and persons.³⁶ The coastal, flag, and port States can perform various roles in maritime law in relation to their location, sovereignty, boundaries, functions, and treaties that they are parties to.³⁷

There is no general right for ships to call at foreign ports. Pursuant to UNCLOS,³⁸ port States have wide discretion to set the entry conditions to their ports. Thus, arguably, port States have the right to deny access to MASS, similar to conventional ships, to their ports, provided that such prohibition is non-discriminatory. Under the UNCLOS, coastal states possess restricted jurisdiction over foreign vessels. Nonetheless, within the territorial sea, they can enact domestic rules in relation to the right of innocent passage. This includes measures aimed at protecting the coastal state's environment. Although the jurisdiction of coastal States is not as strong as port States, the authority of coastal States over ships increases as the vessels approach their shores. It is important to note that IMO Conventions do not explicitly govern the nature and extent of coastal State jurisdiction. Instead, UNCLOS outlines these jurisdictional matters and fundamental obligations, and it delegates to the IMO – i.e., the

34. Gaetano Librando, 'The International Maritime Organization and the Law of the Sea', in David Joseph Attard et al. (eds), *The IMLI Manual on International Maritime Law - Volume I* (OUP, 2014) 589-590.

35. Malcolm Shaw, *International Law* (CUP, 2017) 453-458.

36. Oya Ozcayir, *Port State Control* (LLP, 2004); Cedric Ryngaert, 'The Concept of Jurisdiction in International Law', in Alexander Orakhelashvili (ed.), *Research Handbook on Jurisdiction and Immunities in International Law* (Edward Elgar Publishing, 2015).

37. John N K Mansell, *Flag State Responsibility* (Springer-Verlag Berlin Heidelberg, 2009) 18.

38. UNCLOS, Articles 25(2), 211(3), 255.

‘competent international organization’ – the task of developing detailed international standards within the framework of UNCLOS.³⁹ The IMO Conventions lay down detailed technical regulations for enforcement purposes under the UNCLOS framework.⁴⁰

UNCLOS is renowned for facilitating the evolution of international maritime law through the progressive development of international law at the IMO. Typically, the UNCLOS system instructs States to defer to the IMO as the competent international organization or to implement IMO’s GAIRS. This practice of referring to IMO proves to be an efficient way of progressive development, as it lessens the need for direct amendments to UNCLOS itself. UNCLOS almost always references the IMO’s GAIRS in the context of international shipping and navigation. This recognition underscores the IMO’s pivotal role in adopting comprehensive technical regulations and standards for regulating international shipping. Typically, such GAIRS are adopted within the IMO framework aligned with the objectives of UNCLOS, and they are within the scope of the mandate of the Organization. The IMO, through its mandate, has played an essential role in the progression of the UNCLOS regime via GAIRS. By incorporating international standards through references to IMO rules, UNCLOS assigns a significant role to the GAIRS adopted by the IMO. Consequently, the exact scope of States’ obligations is left to be determined by the IMO.⁴¹

Although various manifestations of States’ jurisdiction are defined by UNCLOS, IMO specifies how these jurisdictions can be exercised in

39. Aldo Chircop, Meinhard Doelle and Ryan Gauvin, ‘International Law and Policy Considerations for Shipping’s Contribution to Climate Change Mitigation’ (2018) CIGI, 23; Sumer (n 5) 122 and 127.

40. Robin Churchill, ‘The 1982 United Nations Convention on the Law of the Sea’, in Donald Rothwell (ed.), *The Oxford Handbook of the Law of the Sea* (OUP, 2015) 43-44.

41. Sumer (n 5) 61-64 and 138-140.

practice. Judge Lucky of the International Tribunal for the Law of the Sea (ITLOS) emphasised the dynamic nature of the Convention in the context of technological progress by noting that UNCLOS is a living instrument that grows and adapts to evolving conditions. Notably, UNCLOS does not preclude the progressive development of the law of the sea. This is implied in both its preamble and main text. The progressive development of the law of the sea regime is assisted by the ongoing institutional relationship between UNCLOS and IMO treaty instruments. In this respect, within the jurisdictional framework basis of UNCLOS, IMO builds upon its legal instruments to provide substance to the States in their jurisdiction. IMO further provides comprehensive procedures for a Port State Control (PSC) mechanism primarily aimed at remedying the non-compliance of flag States.⁴²

At this juncture, it is also worth noting that the potential amendment of UNCLOS is not only necessary in general, but is also not optional due to the inherently rigorous amendment mechanisms of the Convention. Indeed, UNCLOS sets a very high standard for changes, which likely explains why these mechanisms have not been used so far.⁴³ Unlike the IMO treaty instruments, which are designed to quickly adapt to new developments in shipping technology through tacit amendments, UNCLOS lacks similar flexibility due to its constitutional character.⁴⁴ Moreover, UNCLOS has been broadly characterised as a living instrument to highlight its capacity to adjust to changes in the long term. It is reason-

42. Agustin Blanco-Bazan, 'The IMO: UNCLOS Framework for Global Ocean Governance' in David Joseph Attard and others (eds.), *The IMLI Treatise on Global Ocean Governance Volume III: IMO and Global Ocean Governance* (OUP, 2018) 27-35; Sumer (n 5) 75, 84; and Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, ITLOS Case No. 21, 2 April 2015, ITLOS Reports 2015, Separate Opinion of Judge Lucky.

43. UNCLOS, Articles 312 and 313.

44. Sumer (n 5) 61-62.

able to conclude that there is no compelling need to amend UNCLOS for the first three degrees of MASS.⁴⁵

3.1 Innocent passage

Under UNCLOS, States have the right to establish the breadth of their territorial seas up to a maximum limit of 12 nm, where they have territorial sovereignty.⁴⁶ While coastal States exercise sovereignty, they are still required to respect the rights of foreign flagged vessels. The main limitation for coastal States is the allowance for foreign vessels to engage in innocent passage through their territorial sea.⁴⁷

Innocent passage is one of the various navigational rights stipulated by UNCLOS, which is contingent on the maritime jurisdiction areas. The right of innocent passage falls certainly short of the freedom of navigation on the high seas as it is subject to certain conditions.⁴⁸ This navigational right permits ships to traverse the territorial sea of coastal states, balancing the coastal state's territorial sovereignty with the access rights of other flag states.⁴⁹

As per Article 17 of UNCLOS, ships of all States enjoy innocent passage rights. Remarkably, the innocent passage regime represents a compromise between the interests of the coastal and flag States. UNCLOS establishes a number of conditions governing the exercise of

45. Rozemarijn J. Roland Holst, *Change in the Law of the Sea* (Brill Nijhoff, 2022) 108; Keyuan Zou and Anastasia Telesetsky, *Marine Scientific Research, New Marine Technologies and The Law of The Sea* (Brill Nijhoff, 2021) 49.

46. UNCLOS, Articles 2 and 3.

47. Sumer (n 5) 128.

48. UNCLOS, Part II, Section 3, Subsection A.

49. David Cluxton, 'The Chicago Convention 1944 in an UNCLOS 1982 World: Maritime Zones, Continental Shelves, Artificial Islands, and Some Other Issues' (2020) 41 U La Verne L Rev 137, 144.

this right. UNCLOS defines both the phrases ‘passage’ and ‘innocent’ which are crucial parts of the innocent passage regime. For a passage to qualify as innocent, it must be continuous and expeditious. Furthermore, it must be conducted for the purpose of entering or leaving internal waters or traversing the territorial sea without entering internal waters. According to Article 19, passage is considered innocent as long as it does not pose a threat to the peace, order, or security of the coastal State. The same provision also stipulates when a passage becomes prejudicial to the peace, good order, or security of the coastal States by outlining specific activities. In this respect, UNCLOS enunciates a number of activities deemed to be prejudicial, mostly associated with military purposes.⁵⁰

Significantly, the enlisted activities do not include the technical capabilities or crewing arrangements of vessels, which can be important in the context of MASS. The criteria employed in Article 19(2) to assess innocent passage primarily centre around the activities of ships. Thus, it may be safe to argue that the advanced capabilities of MASS cannot be construed directly as an activity that would be prejudicial to the peace and good order of security of coastal States.

50. “...Passage of a foreign ship shall be considered to be prejudicial to the peace, good order or security of the coastal State if in the territorial sea it engages in any of the following activities: (a) any threat or use of force against the sovereignty, territorial integrity or political independence of the coastal State, or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations; (b) any exercise or practice with weapons of any kind; (c) any act aimed at collecting information to the prejudice of the defence or security of the coastal State; (d) any act of propaganda aimed at affecting the defence or security of the coastal State; (e) the launching, landing or taking on board of any aircraft; (f) the launching, landing or taking on board of any military device; (g) the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal State; (h) any act of wilful and serious pollution contrary to this Convention; (i) any fishing activities; (j) the carrying out of research or survey activities; (k) any act aimed at interfering with any systems of communication or any other facilities or installations of the coastal State; (l) any other activity not having a direct bearing on passage.”

Having said that, as per Article 21, coastal States can adopt domestic laws to govern innocent passage and regulate the manner in which the right of innocent passage is exercised within their territorial sea. Such rules can be related to the safety of navigation and the regulation of maritime traffic; the protection of navigational aids and facilities, as well as other facilities; the protection of cables and pipelines; the conservation of the living resources of the sea; the prevention of infringement of fisheries regulations; the preservation of the environment and the prevention, reduction, and control of pollution; marine scientific research and hydrographic surveys; and the prevention of infringement of customs, fiscal, immigration, or sanitary laws. However, it is significant that such regulations must conform to both UNCLOS and other rules of international law (i.e., IMO legal instruments).⁵¹

In the context of MASS, notably, such national laws cannot be related to the design, construction, manning or equipment of foreign ships unless they are giving effect to IMO's GAIRS.⁵² Additionally, according to Article 24, coastal States are prohibited from imposing conditions on foreign vessels that practically deny or impair the right of innocent passage. Hence, as long as MASS are classified as ships, it is reasonable to assume that they would be entitled to the right of innocent passage.

While this discussion extends beyond the scope of this article, it will suffice to note here that since the human element is still involved in

51. Samantha Jordan, 'Captain, My Captain: A Look at Autonomous Ships and How They Should Operate under Admiralty Law' (2020) 30 *Ind Int'l & Comp L Rev* 283, 297-298; Simon McKenzie, 'When Is a Ship a Ship? Use by State Armed Forces of Uncrewed Maritime Vehicles and the United Nations Convention on the Law of the Sea' (2020) 21 *Melb J Int'l L* 373, 379-381; Rachel Mangas and Matthew Festa, 'Chapter 10: Sea, Air and Outer Space Operations', in *Operational Law Handbook* (International and Operational Law Department, 2018) 153 and 159; Andrew Norris, 'Legal Issues Relating to Unmanned Maritime System Monograph' (2013) US Naval War College, 31; Sümer (n 5) 123-124.

52. Aldo Chircop, 'Testing International Legal Regimes: The Advent of Automated Commercial Vessels' (2018) *German Yearbook of International Law*.

MASS Degrees I, II, and III, there is not much doubt that vessels while operating at these degrees would be recognised as ships and, consequently, would enjoy innocent passage rights provided that they also abide by UNCLOS and IMO's future GAIRS.

However, this assumption might not straightforwardly apply to Degree IV, where no human element is in the loop as per the current IMO classification. It is plausible to observe that UNCLOS was intended to address manned vessels. For instance, Article 94(4)(b) notes that:

each ship is in the charge of a master and officers who possess appropriate qualifications, in particular in seamanship, navigation, communications and marine engineering, and that the crew is appropriate in qualification and numbers for the type, size, machinery and equipment of the ship...

When these rules were originally formulated, the assumption was that ships would be manned, and the identified functions would be carried out by crew members onboard. Therefore, this most advanced level of autonomous navigation mode necessitates closer investigation. Nevertheless, this should not be misconstrued as an indication that the drafters of UNCLOS had the intention to exclude technological developments. Conversely, by embracing the progressive development of the law of the sea and pointing out IMO to develop further regulations and standards, it provides the necessary flexibility. This approach ensures that the international regulatory framework can evolve over time.⁵³

A few preliminary research seems to suggest that the right of innocent passage can also be enjoyed by MASS Degree IV arguing that the coastal States do not have the power to adopt rules and regulations on the manning of the ships. Although this approach may look reasonable at first sight, arguably, it may not be the case. Indeed, the general rule of treaty interpretation of the VCLT states that a treaty shall be interpreted-

53. Ringbom (n 16) 20; Sumer (n 5) 262.

ed in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in light of its object and purpose. Obviously, the objective of using the term ‘manning’ was not to acknowledge the innocent passage of fully autonomous systems, but rather to ensure that different crewing numbers required by different ships, probably according to their size and type, are not dictated by the coastal States. Indeed, the ordinary meaning of the term “manning” certainly does not denote any human element at all either on board or on shore. Evidently, although UNCLOS aims to establish an international legal order for oceans, it was not the intention of the drafters of UNCLOS to fully cover unmanned systems as ships for the innocent passage.⁵⁴

UNCLOS is intended to serve as an umbrella instrument providing a flexible legal framework for global ocean governance. The longevity and relevance of UNCLOS hinge on its capacity to evolve with changing conditions. UNCLOS has demonstrated its adaptability over time, especially through supplemental agreements and interpretative methods.⁵⁵ Nonetheless, it is important to emphasize that the flexibility of UNCLOS in regulating international shipping does not extend to fundamental navigational principles, which represent a compromise between competing interests and rights. However, this should not be interpreted as an indication that the UNCLOS system is inherently resistant to the evolution of shipping. For instance, pursuant to Article 23, this right is even extended to foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances, which are considered to pose specific risks for the coastal states. According to Judge Anderson, such passage rights of third states are plainly set out in UN-

54. Jordan (n 51) 297-298; McKenzie (n 51) 380-381.

55. Sümer (n 5) 63-64.

CLOS.⁵⁶ Jordan aptly observes that it would be questionable whether fully autonomous vessels would be perceived as posing a greater risk than the aforementioned vessels.⁵⁷ Rather, there is simply a need for clarification to avoid the fragmentation of international law, particularly concerning the regime of innocent passage, and to prevent divergent practices among States.

It might be safe to observe that, given Article 17's explicit statement that 'ships' of all States are entitled to innocent passage, the enjoyment of this right is fundamentally centred around ships. Therefore, UNCLOS seems to adopt a restrictive approach in this context. Arguably, this is not surprising, considering the innocent passage regime is designed to balance the competing interests and rights of flag and coastal States. Thus, the critical issue is determining whether MASS Degree IV qualifies as ships under the UNCLOS framework. Given that the definition issue is beyond the scope of this study, it will suffice to note here that essentially Degree IV is not a different type of ship but rather a certain mode of navigation. Having said that, it may be plausible to argue that the mode of navigation mentioned is not in line with the current regulatory framework. In this regard, one should not overlook the fact that UNCLOS does not specify a right for non-vessels, such as objects, systems, or devices, to exercise the right of innocent passage.⁵⁸

Moreover, customary international law currently lacks a legal basis to confer the right of innocent passage to non-vessel systems due to the absence of relevant State practice supporting the presence of this right. Therefore, arguably, contending that the fully autonomous mode of navigation should be granted the right of innocent passage without ensuring

56. *MOX Plant case (Ireland v. United Kingdom)*, Order, Provisional Measures, ITLOS Case No. 10, ICGJ 343 (ITLOS 2001), 3rd December 2001, Separate Opinion of Judge Anderson, 30.

57. Jordan (n 51) 297-298.

58. McKenzie (n 51) 380.

that it would be widely accepted could pose a potential risk of damaging the well-established regime of the innocent passage as well. In this regard, the interests of coastal states, be it security, safety, or environmental protection, must be squarely considered and addressed.⁵⁹

Even though the UNCLOS was not subject to IMO's RSE, the issue came up in different meetings. For instance, the United Arab Emirates (UAE) submitted a document to the LEG titled "Implications of UNCLOS for MASS" consisting of a preliminary examination of UNCLOS. Upon reviewing the submission at its 110th session, the LEG concurred that UNCLOS does not hinder the regulation of MASS operations without specifying different degrees of automation. It might be interesting to note that most of the delegations that took the floor felt that UNCLOS, as a framework instrument, did not impede the regulation of MASS by IMO pertinent to the 'safety of navigation'.

In this context, the initial analysis by the UAE suggests that MASS may be entitled to the right of innocent passage,⁶⁰ as long as MASS does not pose any potential risk to the coastal States. Most of the Member States attending the LEG seemed to support this approach, in line with the UAE's submission. Nonetheless, it is important to note that not all Member States were in agreement, expressing that the competent body for interpreting certain legal aspects of UNCLOS is not the IMO but the States Parties to UNCLOS.⁶¹

59. Oliver Daum, 'The Implications of International Law on Unmanned Naval Craft' (2018) 49 J Mar L & Com 71, 93-94; Hitoshi Nasu and David Letts, 'The Legal Characterization of Lethal Autonomous Maritime Systems: Warship, Torpedo, or Naval Mine?' (2020) 96 Int'l L Stud Ser US Naval War Col 79, 92; Norris (n 51) 33-35.

60. "MASS, like an ordinarily manned ship, should enjoy the right of innocent passage unless a ship's manning will not as such render passage non-innocent under the wording of UNCLOS."

61. IMO Repository, Draft Report of the Legal Committee on the Work of its 110th Session, LEG 110/WP.1/Rev.1, 6 April 2023; Legal Committee, 110th session, LEG 110/11/3, 23 December 2022, LEG 110/11/3 5-6.

However, significantly, a Member State noted its concerns at the 105th session of the MSC which may be relevant in the context of the innocent passage right:

Argentina thanks the information provided with regard to tests of the functioning of MASS. At the same time, we would like to recall that degrees of autonomy 3 and 4 are not contemplated in the United Nations Convention on the Law of the Sea (UNCLOS) and therefore their possible entry into a coastal States' jurisdictional waters is subject to consent by coastal States⁶²

The UNCLOS may indeed need to be taken into account during the IMO's further regulatory process in relation to the fundamental and well-established law of the sea principles and their interaction with MASS Degree IV.⁶³

Notably, during the second meeting of the JWG⁶⁴, regarding the role of the IMO as the appropriate platform for regulating MASS under the broader context of UNCLOS, a delegation raised concerns about the capability of the IMO in this vein. The Member State pointed out that the operation of autonomous vessels was not anticipated in UNCLOS. Therefore, it presents a significant legal challenge that needs to be addressed elsewhere to ensure that the IMO's work is founded on a robust legal basis. Thus, even in these preliminary phases, this approach is noteworthy, possibly hinting at what could follow during the regulatory stages at the IMO.⁶⁵

The wording of the Convention might be seen by some coastal states as a potential barrier to the introduction of MASS Degree IV operation as

62. IMO Repository, Report of the MSC, 105th session, MSC 105/20/Add.2, 24 May 2022, MSC 105/20/Add.2 Annex 43, 8.

63. Ringbom (n 16) 21-22.

64. See also IMO Seminar on Development of a Regulatory Framework for Maritime Autonomous Surface Ships (MASS), 6 September 2022.

65. Report of the JWG (n 18), 3.

regards innocent passage, though it has less impact on remotely operated ships and even less on periodically unmanned ships (Degrees II - III).⁶⁶ In this vein, it would be a truism to note that IMO is not the governing body for UNCLOS.⁶⁷ However, it is also doubtful that there is any other effective mechanism that can meaningfully serve such a purpose since the functions of the Meeting of States Parties (SPLOS) mechanism⁶⁸ fall short of interpreting the substantial aspects of the UNCLOS.⁶⁹ In the absence of an effective UNCLOS machinery to address the legal ambiguities surrounding the application of the innocent passage rights to MASS Degree IV and its intersection with global shipping, IMO might opt for seeking an advisory opinion in accordance with its mandate.

4. Seeking an advisory opinion

An advisory opinion essentially represents a legal analysis provided by an international court or tribunal upon the request of an authorised entity. Its purpose is primarily to elucidate a legal question through the provision of legal advice, rather than resolving a specific international dispute. Evidently, the capacity to issue advisory opinions must be based on a legal foundation. In other words, the power to seek or offer advisory opinions must derive from the constituent instruments and must be explicitly granted.⁷⁰ In this regard, Article 96 of the UN Charter states that the UN

66. Ringbom (n 16) 21-22.

67. MSC (n 62) Annex 43, 3.

68. UNCLOS, Article 319(2)(e).

69. See the Role of the Meeting of States Parties in the Interpretation of UNCLOS in Sumer (n 5) 85.

70. ITLOS Case No. 21 (n 42), Written Statement of Australia.

General Assembly or the Security Council may request the International Court of Justice (ICJ) to give an advisory opinion on any legal question. Significantly, it also allows other UN organs and specialised agencies to seek an advisory opinion from the ICJ. According to Article 65 of the ICJ's Statute,⁷¹ in addition to resolving contentious cases, the ICJ can also provide advisory opinions on legal issues related to international law referred to it by the UN and its specialised agencies.⁷² Notably, the advisory opinions issued by the ICJ do not possess direct binding force. Nevertheless, such opinions carry profound legal weight, stemming from the ICJ's standing as the primary judicial organ of the UN. Thus, an advisory opinion serves as a valuable instrument contributing to the clarification of international law in a particular area.⁷³ Naturally, such requests must be related to the legal questions pertinent to the mandate of such entities. Furthermore, pursuant to the 1948 IMO Convention, any legal question which cannot be settled by the IMO Assembly must be referred to the ICJ for an advisory opinion.⁷⁴

Indeed, seeking an advisory opinion from the principal judicial organ of the UN is not uncharted waters for the IMO as a specialised agency of the UN.⁷⁵ During the very first Assembly of the IMO (it was named

71. ICJ Statute, Article 65: "The Court may give an advisory opinion on any legal question at the request of whatever body may be authorized by or in accordance with the Charter of the United Nations to make such a request."

72. Anxhela Mile, 'Emerging Legal Doctrines in Climate Change Law - Seeking an Advisory Opinion from the International Court of Justice' (2021) 56 *Tex Int'l L J* 59, 63-64.

73. Jae Woon Lee and Xiongfeng Li, 'Ongoing Tension in the Air: The Need for ICJ's Advisory Opinion on Air Defense Identification Zone (ADIZ)' (2018) 6 *Korean J Int'l & Comp L* 5, 19-21.

74. IMO Convention, Article 75: "Any legal question which cannot be settled as provided in Article 74 shall be referred by the Organization to the International Court of Justice for an advisory opinion in accordance with Article 96 of the Charter of the United Nations."

75. Constitution of the Maritime Safety Committee of the Inter-Governmental Maritime Consultative Organization, Advisory Opinion of 8 June 1960: I.C.J. Reports 1960.

the Inter-Governmental Maritime Consultative Organisation – IMCO until 1982) held in 1959, a significant dispute emerged among Member States regarding the elections for the MSC.

This dispute led to the adoption of a resolution by the Assembly in 1959, seeking an advisory opinion on the following question:

Is the Maritime Safety Committee of the Inter-Governmental Maritime Consultative Organisation, which was elected on January 15, 1959, constituted in accordance with the Convention for the Establishment of the Organisation?

In order to address these divergent opinions, the ICJ tackled the following preliminary matters: the interpretation of the term ‘elected’, the discretionary or mandatory nature of the elections, the definition of the phrase ‘having an important interest in maritime safety’, the definition of the ‘largest ship-owning nations’, and the criteria for the constitution of ‘registered tonnage’. The ICJ concluded that the constitution of the MSC was not in compliance with the 1948 IMO Convention.⁷⁶

Returning to the discussion on innocent passage, the concerns of the coastal States could be mitigated if MASS Degree IV were to deactivate its autonomous systems during its innocent passage. This would allow for full control by a human element, either on board or at an RCC.⁷⁷ However, should the IMO choose not to revise the current classification of the four degrees of MASS, particularly by specifying that MASS Degree IV will operate with lower levels of autonomy while in coastal waters (which would also mean including the right to innocent passage), and/or

76. Ademun-Odeke, ‘From the Constitution of the Maritime Safety Committee to the Constitution of the Council: Will the IMCO Experience Repeat Itself at the IMO Nearly Fifty Years On -The Juridical Politics of an International Organization’ (2007) 43(1) *Texas International Law Journal* 55, 65; K. R. Simmonds, ‘The Constitution of the Maritime Safety Committee of IMCO’ (1963) 12 *Int’l & Comp LQ* 56, 57.

77. Nasu and Letts (n 59) 96.

in specific maritime areas due to navigational hazards or high maritime traffic density, etc., it may be advisable, depending on the number and the legal stance of IMO Member States, to consider seeking an advisory opinion from the ICJ. Evidently, this should exclusively focus on the law of the sea issues, specifically the applicability of the innocent passage right to MASS Degree IV. Such a step would indeed help prevent the emergence of divergent and contradictory state practices, thereby preserving the integrity of the innocent passage regime and the rights of coastal states.

The primary question to the Court in this instance could perhaps be formulated as whether the MASS Degree IV – i.e. ships navigating on fully autonomous mode are entitled to enjoy the innocent passage right under Part II, Section 3, Subsection A of UNCLOS. Evidently, the aforementioned question would require the ICJ's interpretation of key terms such as 'ship', 'MASS', 'remote master', and 'manning' as well as the provisions pertaining to the innocent passage regime. Moreover, to ensure the Court's flexibility in interpretation, Article 94 regarding the duties of the flag states might also be relevant when formulating the questions for the ICJ. However, this article does not propose the inclusion of the lower degrees of MASS into the formulation of the question as it was discussed elsewhere that such systems appear to fit within the framework of UNCLOS.⁷⁸

Even though one might argue that the ITLOS would be better equipped to address UNCLOS related matters, this study, while acknowledging that further investigation is required, leans towards the ICJ as a more appropriate judicial platform for several reasons. The Tribunal can issue advisory opinions on legal matters, provided that such competence is explicitly granted to it by an international agreement that is relevant to the objectives of UNCLOS, and such a request is made by

78. Sumer (n 5).

an authorised entity.⁷⁹ After all, consent is central to the jurisdiction of international courts and tribunals.⁸⁰ When an international agreement⁸¹ confers advisory jurisdiction upon the Tribunal, then the ITLOS is given competence.⁸² Although this advisory jurisdiction of the Tribunal must be expressly conferred upon ITLOS by the terms of an international agreement⁸³, this is not the case for the IMO's constituent instrument which predates UNCLOS. However, although the 1948 Convention was subject to a number of amendments over the years, even after the entry into force of UNCLOS, the last of which being the 2021 amendments⁸⁴, the IMO did not include ITLOS as a possible judicial organ to seek advisory opinions from.

Moreover, UNCLOS seems to confer a limited advisory function on the Tribunal. Unlike the ICJ, the Tribunal does not possess the overarching power to deliver advisory opinions within the UN system. Additionally, ITLOS does not serve as the judicial arm of the IMO or any other UN bodies.⁸⁵

79. Statute of the Tribunal, Article 21.

80. ITLOS Case No. 21 (n 42), written Statement of the United Kingdom.

81. Rules of the Tribunal, Article 138: "1. The Tribunal may give an advisory opinion on a legal question if an international agreement related to the purposes of the Convention specifically provides for the submission to the Tribunal of a request for such an opinion. 2. A request for an advisory opinion shall be transmitted to the Tribunal by whatever body is authorized by or in accordance with the agreement to make the request to the Tribunal."

82. ITLOS, Digest of Jurisprudence, 1996-2021, Hamburg (2021), 190-193, available at <https://www.itlos.org/fileadmin/itlos/documents/publications/ITLOS_Digest_-_TIDM_Repertoire_2021.pdf>.

83. ITLOS, A Guide to Proceedings before the International Tribunal for the Law of the Sea, Hamburg, 2016, 7, 29. Available at <https://www.itlos.org/fileadmin/itlos/documents/guide/1605-22024_itlos_Guide_En.pdf>.

84. IMO, Convention on the International Maritime Organization, available at <<https://www.imo.org/en/About/Conventions/Pages/Convention-on-the-International-Maritime-Organization.aspx#:~:text=The%20amendments%20will%20expand%20the,versions%20of%20the%20IMO%20Convention>>.

85. John E. Noyes, 'The International Tribunal for the Law of the Sea' (1999) 32 Cornell International Law Journal 1, 137.

As discussed above, it is clear that, according to the UN Charter, the Statute of the ICJ, and the IMO's constituent instrument, the ICJ can be identified as the appropriate judicial organ to deliver an advisory opinion for legal issues that cannot be addressed by the IMO. Moreover, there is a precedent for seeking an advisory opinion from the ICJ by the IMO. Furthermore, it is arguable that it is natural for a UN specialised agency (i.e. the IMO) to have recourse to another UN body, namely the ICJ. Additionally, UNCLOS does not confer any explicit role for advisory opinions to the ITLOS for maritime related UN specialised agencies, including the IMO.⁸⁶ Last but not least, considering that a number of States have yet to become parties to UNCLOS but are active members of the IMO, such states might prefer to seek recourse to the ICJ rather than the ITLOS to be more engaged in the process. Besides, one should bear in mind that several States, such as Australia, China, Ireland, Spain, the UK, and the USA, have previously asserted that the ITLOS does not enjoy general jurisdiction to render advisory opinions in the Request for an Advisory Opinion submitted by the Sub-regional Fisheries Commission (SRFC) case.⁸⁷

Nonetheless, if a coastal state were to significantly question the right of innocent passage, such as by denying passage to MASS, it is reasonable to assume that this action could escalate into a contentious political and jurisdictional issue. In such a scenario, this issue could also be brought to the IMO. Yet, it should be noted that the IMO has refrained from interpreting UNCLOS during discussions on the designation of Particularly Sensitive Sea Areas (PSSAs) in the Baltic and Western European PSSAs. In 2003, the LEG sought assistance from the UN Division for Ocean Affairs and the Law of the Sea (DOALOS) indicating that the IMO may not

86. Written Statement of Ireland, Request for an Advisory Opinion, ITLOS, Submitted by the Sub-regional Fisheries Commission (SRFC), 28 November 2013.

87. Separate Opinion of Judge Lucky, Advisory Opinion for the SRFC, 2 April 2015, ITLOS Reports 2015.

consider itself competent to interpret such a fundamental principle of the law of the sea regime.⁸⁸ Consequently, the matter could be presented as a claim before the ITLOS by the disputing parties, which was essentially established to handle disputes between the States Parties to UNCLOS.⁸⁹

5. Conclusion

The shipping sector has consistently embraced technological innovations and advancements since time immemorial. Driven by the demands for greater efficiency and enhanced operational safety, recently, the maritime sector has witnessed the development of diverse forms of automation. Nonetheless, it is vital that this progress adheres to the UNCLOS,⁹⁰ which sets forth the rights and duties of the states and ships flying their flags.⁹¹

It is crucial to ascertain how MASS can navigate safely without compromising the well-established regime of innocent passage. Additionally, it is important to ensure that the passage of MASS does not jeopardize the peace, good order, or security of the coastal States, while remaining in compliance with the rules and standards set forth in UNCLOS and the IMO treaty instruments. It is essential to recognize that MASS must operate within the legal framework established by UNCLOS. While the

88. Aldo Chircop, *MASS and Flag States: The Nexus between UNCLOS and the IMO Conventions*, 10, available at <<https://cil.nus.edu.sg/wp-content/uploads/2022/06/UNCLOS-and-maritime-autonomous-Surface-Ships-2.pdf>>.

89. Judge Lucky (n 87).

90. UNCTAD, *Maritime Autonomous Surface Ships: A critical 'MASS' for legislative review*. Available at <<https://unctad.org/news/transport-newsletter-article-no-97-fourth-quarter-2022>> accessed 10 December 2023>. See also Report of the JWG (n 18) 241.

91. Malgorzata Materna, 'Adjusting the Aperture: The International Law Case for Qualifying Unmanned Vessels as Warships' (2023) 100 INT'L L. STUD. 452, 457-458.

IMO is the appropriate body to regulate autonomous ships, it should strive to avoid possible conflicts with UNCLOS.⁹²

Arguably, the current classification of MASS is an oversimplification of the issue, especially for Degree IV. Although it has served its purpose during the RSE, it would not be sufficient for the actual regulatory stage. Therefore, a possible refinement during the deliberations on the foreseen goal-based MASS code might be useful. Indeed, one cannot possibly think of a scenario where ship owners, insurers, coastal/port/flag state authorities, or any other relevant stakeholders would be comfortable knowing that certain ships are making decisions independently, embarking and disembarking their various types of cargo, let alone passengers, without any supervision. Moreover, it is not realistic to think that such ships will sail without any monitoring in inherently difficult environments susceptible to extreme weather/sea conditions. Furthermore, even if such ships can meet certain safety conditions, one cannot forget the fact that they will be coexisting in the world's oceans with conventional manned ships for a considerable time. Thus, in light of the above, it may be advisable to merge Degree IV with Degree III as they would both be unmanned and fundamentally require remote control. This is not only a more realistic scenario, but it also facilitates a liberal interpretation of certain legal principles and concepts of the law of the sea regime. This would also prevent any tension between the well-established right of innocent passage regime and MASS Degree IV navigation.

However, if the IMO decides to keep the MASS Degree IV classification as it currently stands, and if the Member States cannot reach a consensus regarding the interrelationship between the right of innocent passage and MASS Degree IV navigation, then it may be plausible for the IMO to seek an advisory opinion from the ICJ.

92. Alexandros Ntovas, 'Functionalism and maritime autonomous surface ships', in, James Kraska and Park Young-Kil (eds.) *Emerging Technology and the Law of the Sea* (CUP, 2022) 215-216; and Sumer (n 5) 99. See also Report of the JWG (n 18).