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DEVELOPMENT OF OMNIBUS LAW ON MARINE SECURITY AND ITS INFLUENCE IN REGULATION OF AUTONOMOUS MARINE VEHICLE (AMV)

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ABSTRACT
Technology cannot be separated from the maritime sector with the discovery of unmanned vessels or AMVs as a use option for various purposes. AMV technology is considered capable of providing various benefits commercially and for the security of a region. However, its development has not been followed by specific regulations, including in Indonesia. In line with this, Indonesia still has overlapping issues related to maritime security law. So a solution is needed to handle this. The method for writing this research uses a normative legal method with a conceptual and regulatory approach. The research results show that the maritime security omibus law is the government's solution in synchronizing overlapping regulations between applicable agencies with the formation of PP Number 13 of 2022 concerning maritime security. The maritime security omnibus law is still being developed until it will eventually touch on statutory regulations. In line with this, AMV technology is expected to be part of this arrangement.

Keywords*: Autonomous Marine Vehicle, Indonesia maritime Secure law, Technology*

ABSTRAK
Teknologi tidak terlepas dari bidang kelautan dengan penemuan kapal nirawak atau AMV sebagai opsi penggunaan kapal untuk berbagai tujuan. Teknologi AMV dinilai mampu memberikan berbagai manfaat secara komersil maupun untuk keamanan suatu wilayah. Namun, dalam pengembangannya belum diikuti dengan regulasi yang khusus termasuk di Indonesia. Sejalan dengan hal tersebut negara Indonesia masih memiliki isu terkait hukum keamanan laut yang masih tumpan tindih. Maka dibutuhkan suatu solusi untuk menangani hal tersebut. Metode penulisan penelitian ini menggunakan metode hukum normatif dengan pendekatan secara konseptual dan perundang-undangan. Hasil penelitian dilihat bahwa *omibus law* keamanan laut menjadi solusi pemerintah dalam mensinkroniasi regulasi yang tumpang tindih antar instansi yang berlaku dengan pembentukan PP Nomor 13 tahun 2022 tentang keamanan laut. *Omnibus law* keamanan laut masih terus dikembangkan hingga nantinya akan menyentuh regulasi perundang-undangan. Sejalan dengan hal tersebut, teknologi AMV diharapkan mampu menjadi bagian di dalam pengaturan tersebut. **Kata Kunci**: Kapal Nirawak, Hukum Keamanan Laut Indonesia, Teknologi.

INTRODUCTION

Indonesia, as an archipelagic country, has a vast expanse of sea, which is more than 75% of the total land area. The waters in question have an area of more than 5,800,000 square kilometers and are accompanied by a cluster of 17,504 islands stretching from Sabang to Merauke. Moreover, Indonesia has a geographically advantageous position, located between two continents and two oceans.[1] The above conditions make Indonesian waters an important element in the global supply chain system, which enables world trade routes and international maritime traffic. This information highlights the fact that Indonesia has the advantage of being the largest archipelagic country in the world, thus having the potential to become the World Maritime Axis. Indonesia's geographical location indirectly increases the vulnerability of foreign countries entering and freely involving in Indonesia's maritime territory. As a result, this scenario gives rise to several elements that contribute to territorial conflicts with neighboring countries. [2] The regulation of Indonesia's maritime territory is legally regulated in Law Number 32 of 2014 which specifically regulates matters related to the Sea. Control of law enforcement activities in the waters is subject to government supervision, especially to address temporary problems.

Based on the perspective of international law, the security of a country's maritime territory is the responsibility of that country. Based on article 91 of UNCLOS 1982, the country is obliged to provide nationality and regulate the registration of ships flying its flag. This obligation continues through articles 92 and 94 regarding the status of state ships and also the obligations of the flag state of its ships, however, UNCLOS 1982 which was made decades ago, has not specifically regulated high-tech unmanned ships such as those that are currently developing in the Autonomous Marine Vehicle (AMV) scheme.

The diverse and beneficial impacts that shape Indonesia's maritime domain also pose potential obstacles to the country's maritime security, particularly regarding issues of territorial sovereignty, unlawful fishing

[1] Christina Aryani, ―Mendorong Lahirnya RUU Keamanan Laut Dalam Penguatan Sistem Keamanan Laut Nasional,‖ *Jurnal Pembangunan Hukum Indonesia* 3, no. 2 (2021): 155–73.

[2] Kurniasanti Kurniasanti and Joko Setiyono, ―Penanggulangan Kejahatan Perompakan Laut Di Indonesia Berdasarkan Perspektif Hukum Pidana Internasional,‖ *JCH (Jurnal Cendekia Hukum)* 6, no. 1 (2020): 29–47.

practices, unreported and unregulated (IUU) fishing, piracy, and acts of maritime violence.[3] Until now, the dilemma mentioned above is still a major concern faced by Indonesia in establishing relations with other countries. The material discussed includes the ongoing dispute regarding the legal status of the Natuna Islands, as well as the issue of illegal fishing carried out by foreign vessels in Indonesian waters. Various kinds of dangers basically have an impact on various aspects of a country's welfare as a whole, such as economic stability, food availability, and environmental preservation.

Indonesia is faced with several maritime difficulties arising from the absence of a clear maritime legal framework and the lack of collaboration between related institutions. The existing regulatory framework related to the implementation of maritime security is Presidential Regulation Number 13 of 2022 which specifically regulates the enforcement of security, safety, and legality in Indonesia's maritime territory. The Presidential Order above is implemented with the aim of ensuring legal clarity in the implementation of data and information related to maritime security, the implementation of maritime security laws and regulations, and the communication of the results of these law enforcement activities.

According to the statement of Mahfud MD, Minister of Politics and Human Rights, it was emphasized that the current regulations related to maritime security are temporary in nature to address overlapping and multilayered maritime security management.[4] However, the establishment of longterm regulations is currently being carried out through the introduction of legislation. This process requires appropriate adjustments to existing laws such as the Maritime Law or the Omnibus Law in the maritime sector.[5] The urgency of its formation is to simplify the 21 laws in force in the maritime sector and collaboration between institutions agreed in this field.

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[3] Muhammad Ridha Iswardhana, Wibawa Adi, and Hidayat Chusnul Chotimah, ―Strategi Keamanan Laut Pemerintah Indonesia Untuk Menjaga Keamanan Maritim,‖ *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial* 8, no. 6 (2021): 1406–28.

[4] Menko Polhukam RI. 2019. Pemerintah Akan Sederhanakan Aturan Keamanan Laut. https://polkam.go.id/pemerintah-akan-sederhanakan-aturan-keamanan-laut/. diakses pada 13 juni 2023

[5] Humas Kemenko Polkuham RI.2022. ―Sosialisasi Peraturan Pemerintah Nomor 13 Tahun 2022 Tentang Penyelenggaraan Keamanan, Keselamatan, dan Penegakan, Hukum di Wilayah Perairan Indonesia dan Wilayah Yuridiksi Indonesia‖. https://polkam.go.id/persrelease-menko-polhukam-sosialisasi-peraturan-pemerintah-nomor/. di akses pada 13 Juni 2023

The issue of implementing comprehensive legislation has become an interesting topic since the end of 2019 and has attracted attention from both formal legal academics and public discussion. The Indonesian government has recently implemented the concept of omnibus legislation, which was previously uncommon in the country. This ratification aims to facilitate the formulation of Draft Laws (RUU) in 2020. The inclusion of omnibus law into the Indonesian legal framework was driven by the President's concern for the many regulations in the country. The regulations in question are in various forms, including laws, government regulations, presidential regulations, ministerial regulations, and regulations issued by governors and regents within the scope of regional authority.[6] The existence of a significant number can give rise to the possibility of overlapping regulations and legal ambiguity, both laws at the same hierarchical level and regulations below it. Therefore, an omnibus bill is considered a feasible way to overcome these difficulties, with the aim of rationalizing and simplifying the current regulatory framework.

The marine and shipping industry has been significantly impacted by the advancement of the latest technological advances, particularly in relation to the emergence of Autonomous Marine Vehicles (AMV). AMV technology has a wide range of applications, including research, environmental monitoring, and military purposes, particularly in the application of tactical vehicles during maritime confrontations. In a broader framework, the use of AMVs has the potential to provide an accurate picture of the dangerous or risky conditions in a particular area, without requiring direct human participation in the procedure.

AMVs have undergone extensive testing, including ongoing efforts by the United States to improve AMV technology for its application as a maritime combat vehicle in the current era. However, the legal framework governing the various developments and benefits related to the utilization of AMVs is still inadequate. The use of AMV technology often raises advantages and disadvantages among experts in the industry. At the 98th session of the Munich Security Conference (MSC), Indonesia proposed an intervention, considering the occurrence of more than 10 ship grounding incidents that resulted in damage to coral reefs, especially in the Raja Ampat area in West Papua. The purpose of this study is to examine the impact of the omnibus law on maritime security in Indonesia on the supervision and approval process for Autonomous

[6] Agnes Fitryantica, ―Harmonisasi Peraturan Perundang-Undangan Indonesia Melalui Konsep Omnibus Law,‖ *Gema Keadilan* 6, no. 3 (2019): 300–316.

Marine Vehicles (AMVs). This study will answer the following research questions:

1) What is the condition of supervision and regulation of Autonomous Marine Vehicles (AMV) in Indonesia?
2) What is the potential for developing the Omnibus Law in compiling regulations regarding supervision and licensing of AMV in Indonesia in the future?

This study reflects on several previous studies as reference material and also as a comparison with previous studies. First, the study conducted by Teguh Herlambang (2021) entitled Design and Analysis of Autonomous Underwater Vehicle Motion Systems states that Indonesia really needs to discuss and develop AMV and the like because Indonesia's territory is dominated by sea areas by 70%. This technology can help monitor and explore the sea freely. Furthermore, research by Bela Awaliyah Agustina (2021) entitled Law on Operating Unmanned Vessels discusses the legal guidelines that can be used in the use of MASS type unmanned vessels using normative methods. In his research, he stated that IMO has made temporary guidelines Number MSC.1/Circ.1604 to regulate the trial activities of the vessel.[7] Based on the previous research above, this study will discuss more about the type of AMV unmanned ship and its potential regulations in the territory of Indonesia in the maritime security omnibus law. Furthermore, research conducted by Taufik Rachmat Nugraha, et al. (2022) entitled Maritime Autonomous Surface Ship (MASS): Challenges and Opportunities for Future Maritime Affairs which states that the use of MASS and other similar unmanned ships can help reduce the number of ship accidents and environmental pollution resulting from ship incidents in sea areas. In addition, it is predicted in the study that MASS can increase effectiveness in trade flows related to the efficiency of maritime navigation to avoid human error.[8]

RESEARCH METHODS

The main objective of this research is to examine the problems using a normative legal research approach[9], with a special focus on the use of the

[7] Bela Awaliyah Agustina, ―HUKUM PENGOPERASIAN KAPAL NIRAWAK,‖ *Perspektif* 26, no. 2 (2021): 120–28.

[8] Taufik Rachmat Nugraha et al., ―Maritime Autonomous Surface Ship (MASS): Tantangan Dan Peluang Kemaritiman Masa Depan,‖ *Media Iuris* 5, no. 1 (2022): 113–36.

[9] Disemadi, Hari Sutra. "Lenses of legal research: A descriptive essay on legal research methodologies." Journal of Judicial Review 24, no. 2 (2022): 289-304.

statutory approach (state approach) and the conceptual approach (conceptual approach) to discuss and reflect on existing phenomena as a whole.[10] The above-mentioned approaches will be used to examine and discuss the existing phenomena from various related laws and facilitate a comprehensive understanding of the issue. This study uses exploratory secondary data materials that have been collected and evaluated to investigate relevant issues including scientific articles related to the focus of the study, expert opinions, and existing data facts. The purpose of qualitative data analysis is to provide a comprehensive understanding of the information, methodology, and analysis results that have scientific significance. The results are then reported descriptively which are critically analyzed and presented in the form of descriptions to explain one part with another.[11]

RESULTS AND DISCUSSION

Technological Developments and Legal Status of Autonomous Marine Vehicles (AMV) in Indonesia

The disciplines of geology and oceanography have not escaped the impact of technological breakthroughs, especially in the field of ship development. In recent years, significant progress has been made in the field of unmanned ship technology, covering applications in both the commercial and military sectors.[12] One example of an autonomous system that can be cited is and AMV. Both ship designs generally show the same aspect, namely the use of unmanned or crewed ships. The AMV concept has been developed to meet long-distance operations, operating autonomously with limited human intervention in terms of crew. The use of AMVs represents a significant advance in the field of transportation, taking advantage of the integration of unmanned aerial vehicles or drones that have been in operation for a long time. Unmanned ships are used in various fields, including oceanographic research, scientific studies, transportation needs, and environmental monitoring, with increasing prevalence. Advocacy for the use of AMVs in maritime transportation is driven by the goal of reducing carbon emissions and mitigating environmental pollution.

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[10] Iswardhana, Adi, and Chotimah, ―Strategi Keamanan Laut Pemerintah Indonesia Untuk Menjaga Keamanan Maritim.‖

[11] Dr Sugiyono, ―Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif Dan R&D,‖ 2013.

[12] Ringbom, Henrik. "Regulating autonomous ships—concepts, challenges and precedents." *Ocean Development & International Law* 50, no. 2-3 (2019): 141-169.

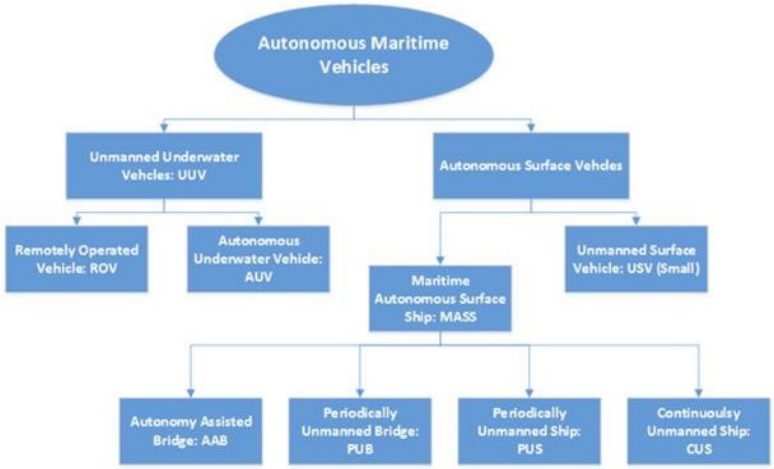

Figure 1. AMV classification

Source: [13]

Based on the above sources, the AMV concept itself consists of many types that have the ability to operate either on the sea surface or plunge underwater, depending on its specific dimensions. AMV is separated into two parts, namely:

a. *Unnamed Underwater Vehicle* (UUV)

b. *Autonomous Surface Vehicle* (ASV)

The AMV's potential extends beyond its application as a marine scientific research vehicle, as it is hypothesized to have tactical capabilities in the context of naval combat. This can be seen in its ability to facilitate the transport of weapons and hazardous materials throughout its operations. Eckstein presents a comprehensive analysis of the development of AMV technology and its use in the military domain:[14]

"*So long-range unmanned surface vessels, for us, vitally important because they're lethal. They're not just connectors; they're sniffers, they're out there telling me what's going on, they're passing that information back to me, and they're spreading out the enemy because at some point you've got to target everything that moves because the*

[13] Rødseth, Ørnulf Jan, Lars Andreas Lien Wennersberg, and Håvard Nordahl. "Towards approval of autonomous ship systems by their operational envelope." *Journal of Marine Science and Technology* 27, no. 1 (2022): 67-76.

[14] 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,‖ *Melbourne Journal of International Law* 21, no. 2 (2020): 373–402.

one thing that does get through is carrying the lethal package" to help the Marines achieve their aims"

Based on Eckstein's analysis, AMV operations carried out in the military have a dual function, namely as a covert surveillance mechanism during peacetime and as a powerful instrument of warfare during periods of hostilities. Developments such as the United States, AMV to monitor its territorial seas. The emergence of AMV has presented new possibilities and potential in improving maritime transportation, thus providing positive impacts in various sectors such as the economy, environment, and public welfare. From a practical perspective, it can be said that AMV has the potential to overcome crew safety risks and reduce shipping costs.

The field of maritime transportation has experienced quite prominent technological advances, namely with the presence of AMV. The innovations mentioned above have significantly changed the shipping sector by introducing unique and innovative approaches to maritime operations. Unfortunately, this discovery has not been supported by special regulations that clearly regulate the provisions of its operation, both in international law under the auspices of the United Convention on The Law of The Sea 1982 (UNCLOS 1982) and specifically in the laws of the Republic of Indonesia. AMVs are closely associated with their use for Marine Scientifical Research. AMVs themselves are generally divided into several common types, namely: unmanned aerial vehicles (UAVs), unmanned surface vessels (USVs), and unmanned underwater vehicles (UUVs).[15]

Since 2017, several member states of the IMO's Maritime Safety Committee (MSC) have submitted proposals for further discussion on AMVs. The discourse around AMVs has brought significant progress in the design of unmanned vessels. The developments relate to the identification and compilation of IMO laws that can be used as references in the operation of AMVs. The Autonomous Marine Vehicle Team, a research institution affiliated with the University of Indonesia, has been actively involved in the development of AMVs domestically. The main objective of this team is to advance this project through their research efforts. The use of AMVs in the shipping world, especially in Indonesian waters and territorial waters, has the potential to

[15] Ma Xinmin, *Cooperation and Engagement in the Asia-Pacific Region*, ed. Myron H. Nordquist, John Norton Moore, and Ronán Long (Brill | Nijhoff, 2020), https://doi.org/10.1163/9789004412026.

provide good results in terms of economy and military, considering the advantages and level of progress associated with this technology.

Research conducted by Abdullah et al. [16] presenting evidence that autonomous ships have the capacity to serve as a viable alternative for the Indonesian Navy in effectively eliminating sea mines, while reducing material and crew casualties. This shows that autonomous ships have the ability to replace conventional minesweepers.

The Indonesian Navy's research and development institute, Dislitbangal, has been conducting research related to USVs for several years.[17] Various institutions have been involved in activities related to the design and evaluation of AMVs. These activities include educational institutions and competitions between universities. The above observations indicate that there is great potential for the formal implementation of AMV operations, which can have a beneficial impact on the country. In addition, the use of AMVs has the capacity to reduce costs and reduce safety risks for workers operating in Indonesia's vast and dangerous maritime conditions. The operation of AMVs in military functions needs to be supported by the fulfillment of the requirements so that they can be declared as a ship, one of which is the concept of a ship "under command" in COLREGS 1972 with directions on safety and interaction with other ships.[18] The current condition of AMV in the context of international law is still unclear, resulting in a lack of official regulations from the Indonesian government.

Referring to Article 29 of UNCLOS 1982, the use of warships requires the presence of crew on board. The use of Autonomous Maritime Vehicles (AMV) as naval vessels is subject to certain limitations as outlined in Article 29. This then becomes one of the reasons for the obstacles to the use of AMVs from the military side. As expressed by experts from China that AMVs in their utilization cannot be equated with government warships and was further emphasized by

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[16] Makhfud Abdullah, Fauzi Fauzi, and Dimas Apriyanto, ―ANALISA PEMILIHAN KAPAL TANPA AWAK DALAM OPERASI TINDAKAN PERLAWANAN RANJAU (TPR) DENGAN METODE AHP,‖ *SCIENTIFIC JOURNAL OF REFLECTION: Economic, Accounting, Management and Business* 6, no. 3 (2023): 601–8.

[17] Fajar Ramadhan and Wasis Dwi Aryawan, ―Pembuatan Detail Desain Unmanned Surface Vehicle (USV) Untuk Monitoring Wilayah Perairan Indonesia,‖ *Jurnal Teknik ITS* 6, no. 2 (2017): G302–7.

[18] Naomi Catherine Felencia, R Achmad Gusman Catur Siswandi, and Imam Mulyana, ―THE IMPLEMENTATION OF SOVEREIGN IMMUNITY OF WARSHIPS TO UNMANNED UNDERWATER VEHICLES (UUV) UNDER LAW OF THE SEA,‖ *Padjadjaran Journal of International Law* 6, no. 1 (2022): 76–95.

the Chinese government in 2016 which classified UUVs as "Unidentified objects".[19]

In Indonesia, the Continental Shelf Bill has been the subject of discussion within the national framework, particularly in the House of Representatives (DPR). This discussion specifically focuses on Part II of the law, which addresses Marine Scientific Research and the use of Unmanned Underwater Vehicles (UUVs), which are a special category of AMVs. However, the law does not provide clear and precise guidance on the specific equipment that must be used for marine scientific activities. The importance of compliance with the applicable legal framework in supervising the use of AMVs in Indonesian maritime territory by foreign countries. If a country intends to use a particular AMV for purposes other than military or scientific research, it is essential for the country to obtain permission from the appropriate maritime jurisdiction, as outlined in Article 238 of UNCLOS 1982. This article argues that every country has the inherent right to engage in marine research efforts, regardless of its geographical location or technological capabilities, as long as such operations are carried out for peaceful purposes.

Potential for Omnibus Law Development in Drafting Regulations Regarding AMV Supervision and Licensing in Indonesia

Indonesia as a participating country of UNCLOS 1982, has an obligation to regulate ships sailing in its territory, both registered and unregistered. AMV based on research by several authors, its status can be classified as a ship if it is possible with previous analysis to be used commercially and for military needs. The development of AMVs has the potential to add challenges to existing maritime security systems, particularly in relation to law enforcement in waters that are rarely reached by human surveillance. For example, AMVs in the form of MASS, as previously mentioned, have become a topic actively discussed at IMO meetings to explore how they should be managed.

Indonesia has full jurisdiction over the maritime zone of 12 nautical miles, which includes the seabed and related resources, as well as the airspace above the maritime zone. In addition, it is important to note that Indonesia asserts its sovereign authority over maritime areas that include the exclusive economic zone, additional zone, and continental shelf.[20] The Indonesian

[19] Jeremia Humolong Prasetya Nainggolan, ―Military Application of Unmanned Underwater Vehicles: In Quest of a New Legal Regime?,‖ *Indonesian J. Int'l L.* 16 (2018): 61.

[20] Melaniati Suharni and Yohanes Arman, ―UPAYA MENGATASI TUMPANG

government has developed a strategic plan to position Indonesia as a leading global maritime axis. This initiative aims to harness the country's current potential and make the marine economy a fundamental pillar of growth.

The main objective behind the establishment of the global maritime axis is to encourage the transformation of Indonesia into a maritime nation characterized by resilience, independence, determination, strength, and capacity to actively contribute to international security and stability, maritime areas, in line with its national aspirations.

President Joko Widodo outlined five fundamental pillars in the implementation of the global maritime axis idea. The pillars of this framework consist of several key elements. First, an emphasis on fostering Indonesia's maritime culture. Second, a dedication to the sustainable management and security of marine resources, with a particular focus on seafood development through the fisheries industry, with fishermen as the main beneficiaries. Third, a commitment to improving maritime infrastructure and connectivity, which includes the construction of sea toll roads, ports, logistics facilities, and the growth of related industries such as tourism. Fourth, an intention to establish cooperative maritime relations with all Indonesian partners. Finally, there is a focus on strengthening Indonesia's maritime defense capabilities and overall strength. To ensure the sustainability of Indonesia's maritime areas in a sustainable manner, the implementation of effective regulations to protect the country's waters is essential.

The government then interpreted this as an obstacle that led to the adoption of the omnibus law approach as a legal strategy by the Indonesian government, with the aim of achieving harmonization of regulations and legislation in this country. Law Number 11 of 2020, commonly known as the Job Creation Law, is the first legislation implemented by the government with the omnibus law methodology. The definition of omnibus law involves combining many legal rules regarding various subjects into one integrated regulation that serves a specific purpose. Omnibus law is a comprehensive legal framework that covers all interrelated material substances and aims to ensure the effectiveness of the implementation of laws and regulations. The historical significance of omnibus legislation in many countries lies in its function in establishing a regulatory framework. A possible solution to deal with the regulations which are no longer harmonious is to simplify them by using an

TINDIH KEWENANGAN DI WILAYAH PERBATASAN LAUT INDONESIA,‖ *Eksekusi: Jurnal Ilmu Hukum Dan Administrasi Negara* 1, no. 3 (2023): 91–105.

omnibus law approach.[21] The specific delineation of the legal status of the omnibus law concept in Indonesia is still unclear. The Omnibus Law in its capacity as a law does not have constitutional status as a basic law, but rather functions as a law that is equal to other laws. The process involves changing or eliminating certain articles, either in whole or in part, through the application of new criteria.[22]

In the field of maritime security law which has very broad rules, the extensive laws and regulations after being stipulated in the Job Creation Law are considered to have the capacity to be utilized more in implementing maritime security regulations. The ratification of the draft omnibus maritime security law in 2020 was announced publicly by Mahfud MD, the Coordinating Minister for Political, Legal, and Security Affairs. In 2022, the Indonesian government issued Government Regulation (PP) Number 13 of 2022 concerning Enforcement of Security, Safety, and Legality in Indonesian Waters and Indonesian Jurisdictional Areas (PKKPH). The maritime security omnibus law includes the merger of the Maritime Bill and the Waters Law, as well as the consolidation of Bakamla and the Sea and Coast Guard Unit (KPLP).

The use of maritime transportation is as widespread as land transportation. The use of ships has been widely recognized throughout history as a method of transporting goods and helping people move between regions. The development of maritime ships has undergone consistent evolution in line with chronological and technological developments, starting with the use of oar-powered ships, migrating to the use of steam-powered engines, and finally switching to diesel engines. The presence of the right number of crew members is a determining factor in the efficiency of a ship's operation, especially for large ships that require more staff. However, it is important to note that the presence of a large number of crew members on duty shows a clear correlation with the associated costs, which are also quite large. The use of maritime ships and their personnel raises great concerns regarding safety and security measures. Incidents involving ships resulting in financial losses and loss of human life are a common phenomenon.

The existing problems can be effectively overcome through the use of technological breakthroughs, especially the creation of unmanned ships or

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[21] Marbun, Djandel Dachlan Pangihutan, Nurlaily Nurlaily, and Rina Shahriyani Shahrullah. "*Socio-Legal Perspectives on the Omnibus Law in the Era of Industrial Revolution 4.0: a Case Study of Batam City*." Journal of Law and Policy Transformation 8, no. 1 (2023): 41-56.

[22] Fitryantica, ―Harmonisasi Peraturan Perundang-Undangan Indonesia Melalui Konsep Omnibus Law.‖

Autonomous Marine Vehicles (AMV). Autonomous Marine Vehicles (AMV) are water vehicles that are operated remotely and have the ability to function independently, without requiring direct human involvement in the form of crew. The regulations and framework for the Automatic Mutual Aid Vessel (AMV) system were officially approved by the Maritime Safety Committee (MSC) of the International Maritime Organization (IMO) in December 2018. The regulatory constraints imposed by AMV (Audiovisual Media Services) have both advantages and disadvantages, both at the global level and especially in Indonesia. The use of the omnibus law technique in the governance of maritime security law which is marked by the consolidation of various regulations into one Government Regulation is a progress that should be appreciated. Coordinating Minister for Political, Legal, and Human Rights

Mahfud MD quickly announced the implementation of Government Regulation Number 13 of 2022 concerning security after being included in the 2020 Prolegnas. The formation of this Presidential Regulation (PP) was carried out with the aim of officially recognizing Bakamla as the main coordinating institution responsible for overseeing various groups involved in guarding Indonesia's maritime territory. Based on the statement of the Coordinating Minister for Political, Legal, and Security Affairs, the discussion of the Maritime Security Omnibus Bill was arranged in three stages culminating in a partial revision of Bill Number 32 of 2014 concerning Maritime Affairs. After that, the omnibus law will be expanded to include several other laws and regulations related to the maritime sector.[23] The purpose of this action is to improve efficient coordination in addressing maritime security risks, while mitigating potential regulatory conflicts that may occur due to overlapping regulations imposed by multiple agencies responsible for maritime security. It is expected that Bakamla will play a proactive role in encouraging the alignment of legal capabilities across maritime agencies and ensuring effective law enforcement results against alleged violations of maritime law in Indonesia.

From this perspective, the use of Autonomous Marine Vehicles (AMVs) or unmanned vessels is a viable alternative for the government to improve the security of Indonesia's maritime territory. On a global scale, the International Maritime Organization (IMO) has issued an order to its member states, such as Indonesia, to begin implementing Automated Machine Vision (AMV)

[23] CNN Indonesia.2022. Mahfud Beber Progres Pembahasan Omnibus Law Kelautan. https://www.cnnindonesia.com/nasional/20220307134857-20-767771/mahfud-beberprogrespembahasan-omnibus-law-kelautan. diakses pada 08 Oktober 2023

technology and establish an accompanying legal framework. The impact of unmanned technology on the shipping industry in general has been widely recognized. As a result, the 99th session of the Maritime Safety Committee (MSC) witnessed substantial discussions on Autonomous Maritime Vehicles (AMVs) and their operational features, considering the reduced need for human intervention. This conversation highlighted the significant impact of AMVs on the maritime sector in the future. In 2021, an IMO Circular was introduced, focusing on the legal elements of safety and security in the operation of autonomous vessels. This circular was developed through the Regulatory Scoping Exercise (RSE 2021).[24] RSE 2021 is designed by mapping regulations that lead to the safe operation of ships including the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention), the International Regulations for the Preventing of Collisions at Sea 1972 (COLREGs), and the International
Convention for the Safety of Life at Sea 1974 (SOLAS).[25] However, in the 2021 RSE it is also emphasized that there is still uncertainty regarding the implementation and regulation of AMV to date. Referring to this also indicates that the regulation of AMV in Indonesian Maritime Law has not yet touched on this area. Operationally, AMV requires legal review and approach to form a special regulation.

The existence of several regulatory issues regarding autonomous marine vehicles (AMVs) has caused a significant gap in the global maritime legal structure. The absence of clear provisions regarding the use of autonomous marine vehicles (AMVs) within a country's maritime jurisdiction or in the high seas is an impact of the 1982 United Nations Convention on the Law of the Sea (UNCLOS). As a result, this incident has an impact on the management and enforcement of the legal structure regarding violations related to the use of Automatic Identification Systems (AIS) in a country's maritime jurisdiction. European countries such as the United States, the Netherlands, and the United Kingdom have shown a positive attitude towards the use of Unmanned Underwater Vehicles (UUVs) which are included in the category of Autonomous Marine Vehicles (AMVs). These countries aim to use these

[24] Nugraha et al., ―Maritime Autonomous Surface Ship (MASS): Tantangan Dan Peluang Kemaritiman Masa Depan.‖

[25] Henrik Ringbom, ―Regulating Autonomous Ships—Concepts, Challenges and Precedents,‖ *Ocean Development & International Law* 50, no. 2–3 (2019): 141–69.

vehicles for the purpose of conducting marine scientific research in the continental shelf area of a coastal country.[26]

In addition, several Asian countries have begun developing their own Autonomous Mobile Vehicles (AMVs) and have implemented regulatory measures related to Surveillance. The People's Republic of China recently deployed an autonomous underwater vehicle (AUV) named "Haiyi" found in the waters of Sulawesi which was reportedly launched to conduct winter survey activities in the region. From the perspective of national defense, this AMV is also suspected of being a spy on Indonesian maritime activities to conduct submarine mapping. Navigation of unmanned underwater vehicles (UUVs) in the eastern Indian Ocean is carried out by a fleet including 12 Xiang Yang Hong vessels.

Figure 2. Specifications of Haiyi Made in China

Source:[27]

In 2016, India, like China, began efforts to conceptualize and manufacture Autonomous Maritime Vehicles (AMVs). India has been using these vehicles for military purposes in the field of Marine Scientific Research, which has resulted in certain restrictions being imposed on their use. As per the provisions outlined in Article 238 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the user state is required to obtain prior consent from the coastal state when deploying Unmanned Underwater Vehicles (UUVs). It is important to note that UUVs are classified as Autonomous Marine Vehicles (AMVs) and this requirement applies specifically if the UUV is intended for non-military or scientific research purposes. This article affirms the universal right of all states to participate in maritime research efforts, regardless of their geographical

[26] Simon McKenzie, ―Autonomous Technology and Dynamic Obligations: Uncrewed Maritime Vehicles and the Regulation of Maritime Military Surveillance in the Exclusive Economic Zone,‖ *Asian Journal of International Law* 11, no. 1 (2021): 146–75.

[27] http://www.hisutton.comChinese-Sea-WingSubmarine-Drone.html.

location or technological capabilities. Additionally, Article 240 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) outlines the basic principles governing the conduct of marine scientific research. The above principles include;

1) The purpose of conducting research is to achieve peaceful objectives.
2) Marine scientific research is carried out in accordance with the limitations set out in the 1982 United Nations Convention on the Law of the Sea (UNCLOS).
3) The validity of conducting marine scientific research is disputed when it hinders the use of other marine areas.
4) The implementation of marine scientific research must comply with all relevant laws and regulations established in accordance with this agreement. These regulations include provisions relating to the protection and preservation of the marine environment.

Although if we look at the regulations in Chapter XIII of UNCLOS 1982 which regulates marine scientific research, there are no specific regulations regarding the use of UUVs for research purposes, especially in terms of the authority of coastal states to regulate and grant permits for UUV operating activities for scientific research purposes. The limited thorough examination of the ownership of the Haiyi ship by the Chinese government may be partly due to reliance on existing information.

Based on the state's obligation to regulate maritime vehicles in its country, the potential inclusion of regulations regarding AMVs is a topic that may be considered by the Indonesian government in the future. The establishment of a comprehensive maritime security omnibus law will effectively regulate and legitimize the use of Indonesia's marine resources to achieve maritime security goals. The need to monitor the use of the Indonesian Sea area not only covers Indonesia's domestic interests, but also includes the need to monitor the operations of other countries operating in the geographic area. An unmanned water vehicle shaped like a torpedo was found in the waters of South Sulawesi. Additional investigations are being conducted to determine the ownership of the equipment and evaluate the materials obtained by the vessel.

CONCLUSION

1. The international community has shown collective interest in the technical breakthroughs that have occurred in several sectors, including

the maritime and shipping sector. Significant progress has been made in the recognition of unmanned water vehicles, known as Autonomous Marine Vehicles (AMVs). The use of these vessels is considered a viable strategy for scientific endeavors, environmental monitoring, and critical evaluations of maritime security and military issues. The application of Autonomous Marine Vehicle (AMV) technology facilitates the implementation of comprehensive maritime condition evaluations, thereby eliminating the need for human crew members to directly face potential hazards. In addition, AMVs have the potential to reduce costs and reduce the negative environmental impacts of the use of diesel engines on current seagoing vessels. However, it is important to note that there is a lack of specific legislation related to AMVs in the international and Indonesian legal frameworks. There is a good correlation between sustainable development and regulations.

2. The implementation of maritime security laws in Indonesia is multifaceted, as the laws include a series of overlapping regulations that reflect several authorities responsible for enforcing the laws, in accordance with regulatory directives. The phenomenon of blurred jurisdictional boundaries among law enforcement officers in the context of criminal operations in maritime areas is often seen. The Indonesian government responded to this problem by implementing a comprehensive maritime security omnibus law, officially referred to as Government Law Number 13 of 2022. The main purpose of this regulation is to harmonize various perspectives on maritime security laws and regulations. The above regulation relates to the government's official recognition of Bakamla as a coast guard organization mandated to conduct patrols and facilitate collaboration between agencies involved in implementing laws related to maritime security. The continuous progress of the omnibus law method requires further supervision and immediate implementation at the legislative level. In this regard, a comprehensive analysis of the capabilities of unmanned vessels or Autonomous Marine Vehicles (AMVs) shows that they can be regulated efficiently within a comprehensive maritime security regulatory framework. The legislation in question includes a regulatory framework governing the use and supervision of AMVs within Indonesia’s maritime borders. The use of AMV regulations for commercial and military purposes has the potential to support the Indonesian government’s

ambition to establish itself as a leading global maritime hub in the years to come. The legitimate application of cutting-edge technology can facilitate the achievement of this goal.

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