

Reassessing Command Responsibility for Lethal Autonomous Weapon Systems under International Humanitarian Law

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Abstract

The rapid development of artificial intelligence based military technology poses significant conceptual and normative challenges to the application of International Humanitarian Law (IHL), particularly with regard to the deployment of Lethal Autonomous Weapon Systems (LAWS). The autonomous capacity of such systems to select and engage targets raises complex questions of legal accountability when violations of the laws of armed conflict or civilian harm occur. This article reassesses the doctrine of command responsibility in the context of LAWS by positioning the core principles of IHL distinction, proportionality, precaution, and accountability as evaluative benchmarks. Employing a normative juridical approach, this study analyzes the 1949 Geneva Conventions, Additional Protocol I of 1977, and the 1998 Rome Statute of the International Criminal Court, alongside relevant Indonesian national legislation, particularly Law No. 3 of 2002 on National Defense and Law No. 34 of 2004 on the Indonesian National Armed Forces (TNI). The findings demonstrate that although increasing technological autonomy may reduce direct human involvement in lethal decision-making, the legal obligations of military commanders cannot be disregarded. Nevertheless, algorithmic complexity, opacity in decision-making processes (the “black box” problem), and the involvement of multiple actors necessitate a reconceptualization of existing accountability frameworks, including the recognition of shared or joint responsibility. This article argues that in the absence of specific international regulations governing LAWS, a significant accountability gap risks undermining the effective enforcement of IHL in future armed conflicts. Accordingly, it calls for the strengthening of international legal frameworks to explicitly regulate LAWS, ensuring that humanitarian principles remain aligned with the realities of contemporary military operations.

Keywords: International Humanitarian Law, Command Accountability, Autonomous Drones, Lethal Autonomous Weapons, LAWS.

Abstrak

Perkembangan pesat teknologi militer berbasis kecerdasan buatan menimbulkan tantangan konseptual dan normatif yang signifikan terhadap penerapan Hukum Humaniter Internasional (IHL), terutama yang berkaitan dengan penyebaran Sistem Senjata Otonom Mematikan (LAWS). Kapasitas otonom sistem semacam itu untuk memilih dan melibatkan target menimbulkan pertanyaan kompleks tentang akuntabilitas hukum ketika pelanggaran hukum konflik bersenjata atau bahaya sipil terjadi. Artikel ini menilai kembali doktrin tanggung jawab komando dalam konteks HUKUM dengan memposisikan prinsip-prinsip inti perbedaan IHL, proporsionalitas, tindakan pencegahan, dan akuntabilitas sebagai tolok ukur evaluatif. Dengan menggunakan pendekatan yuridis normatif, penelitian ini menganalisis Konvensi Jenewa 1949, Protokol Tambahan I Tahun 1977, dan Statuta Roma Pengadilan Pidana Internasional 1998, di samping undang-undang nasional Indonesia yang relevan, khususnya Undang-Undang No. 3 Tahun 2002



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tentang Pertahanan Nasional dan Undang-Undang No. 34 Tahun 2004 tentang Angkatan Bersenjata Nasional Indonesia (TNI). Temuan ini menunjukkan bahwa meskipun peningkatan otonomi teknologi dapat mengurangi keterlibatan manusia langsung dalam pengambilan keputusan yang mematikan, kewajiban hukum komandan militer tidak dapat diabaikan. Namun demikian, kompleksitas algoritmik, ketidakjelasan dalam proses pengambilan keputusan (masalah "kotak hitam"), dan keterlibatan berbagai aktor memerlukan konseptualisasi ulang kerangka akuntabilitas yang ada, termasuk pengakuan tanggung jawab bersama atau bersama. Artikel ini berpendapat bahwa dengan tidak adanya peraturan internasional khusus yang mengatur HUKUM, kesenjangan akuntabilitas yang signifikan berisiko merusak penegakan IHL yang efektif dalam konflik bersenjata di masa depan. Oleh karena itu, ia menyerukan penguatan kerangka hukum internasional untuk secara eksplisit mengatur LAWS, memastikan bahwa prinsip-prinsip kemanusiaan tetap selaras dengan realitas operasi militer kontemporer.

Kata Kunci: Hukum Humaniter Internasional, Akuntabilitas Komando, Drone Otonom, Senjata Otonom Mematikan, LAWS.

INTRODUCTION

Advances in military technology have brought about significant changes in the way nations face war.¹ While combat power previously relied heavily on troop numbers, conventional weapons, and field strategies, a new era has emerged with the advent of autonomous weapons systems.² Drones capable of attacking targets without pilots and armed robots that can make their own decisions present serious challenges to the international legal order.³ While these innovations provide military efficiency, they also raise concerns because machines lack the morality of humans.⁴ As a result, the fundamental principle of war, which emphasizes the protection of civilians, is at risk of being neglected.

International Humanitarian Law (IHL) regulates the limits of the use of force in armed conflict to protect war victims.⁵ The principle of distinction requires warring parties to distinguish between combatants and civilians.⁶ The principle of proportionality demands a balance between military advantage and civilian harm.⁷ The principle of military necessity limits actions to those necessary to achieve legitimate military objectives.⁸ Autonomous technology raises serious questions about whether machines are

¹ C. Lintang and L.Y. Prakoso, "Perang dan Ekonomi: Sejarah Keterkaitan antara Konflik Militer dan Perubahan Ekonomi Global," *Jurnal kewarganegaraan* 7, no. 1 (2023): 372–78.

² K.L. Putri, "Penggunaan AI Terhadap Otomatisasi Senjata Dalam Konflik Bersenjata: Tinjauan Hukum Humaniter Internasional," *Jurnal Locus Delicti* 5, no. 2 (2024): 1–25.

³ S.E. Wibowo, "Dari Sains Fiksi ke Medan Perang: Realitas dan Tantangan Pesawat Tanpa Awak Bersenjata dengan Kecerdasan Buatan," *Jurnal Teknik Mesin, Industri, Elektro dan Informatika* 3, no. 3 (2024): 395–414.

⁴ I.A. Sumarno, *Manajemen Pertahanan Modern: Tantangan Modernisasi Militer dan Integrasi AI* (Indonesia Emas Group, 2025).

⁵ A.I. Sondakh, "Penggunaan Alat Perang Menurut Hukum Humaniter Internasional Dalam Konflik Bersenjata Antar Negara," *LEX CRIMEN* 12, no. 4 (2024).

⁶ R. Manitik, "Perlindungan Penduduk Sipil Dalam Konflik Bersenjata Internasional Menurut Hukum Humaniter Internasional," *Lex Privatum* 11, no. 1 (2023).

⁷ A. Hadiyanto et al., "Transformasi Karakter Konflik Asimetris Dan Relevansinya Terhadap Adaptasi Hukum Humaniter Di Lingkup Operasi Militer Modern," *Journal Of Law And Nation* 4, no. 2 (2025): 459–66.

⁸ A. Sarjito, "Sinkronisasi Kebijakan Pertahanan dalam Operasi Militer dengan Hak Asasi Manusia," *Journal of Governance and Policy Innovation* 3, no. 2 (2023): 17–41.

capable of assessing these human aspects. This situation has led many to doubt the compliance of LAWS with applicable laws of war.

The ambiguity regarding legal accountability further complicates the debate. In conventional warfare, military commanders can be held accountable if their subordinates commit violations. With the use of autonomous weapons, a new issue arises: who should be held responsible if errors occur? It could be the commander, the operator, the state, or even the creator of the algorithm that caused the damage.⁹ This creates a legal dilemma because the international legal system has historically been oriented toward human actors. The shift towards machine-based warfare demands a more progressive adaptation of legal rules.

The discourse on autonomous weapons is not limited to the technical realm but has become a global agenda.¹⁰ The United Nations, through the Convention on Certain Conventional Weapons (CCW), has facilitated a forum to discuss the limitations on the use of artificial intelligence-based weapons.¹¹ Some countries support a complete ban, while others oppose it, citing national security needs. The ongoing debate demonstrates that this issue is not simply a technological one, but also concerns moral legitimacy and legal responsibility. Indonesia, as a country that upholds humanitarian law, is also required to take a clear position.

A clear definition of Lethal Autonomous Weapon Systems (LAWS) is crucial to avoid overlapping interpretations. Many experts define LAWS as weapons systems that can select and engage targets without significant human intervention.¹² This definition distinguishes between semi-autonomous systems, which still require human oversight, and fully autonomous systems, which are truly independent.¹³ Clarity of definition significantly impacts legal regulation, as differences in the level of human control determine who can be held accountable. Without a uniform definition, it is difficult for the international community to establish binding regulations.

The basic principles of IHL, derived from the 1949 Geneva Conventions and Additional Protocol I of 1977, remain the primary foundation for assessing the legality of weapons. This principle is universal and binding on all parties in armed conflict.¹⁴ IHL does not prohibit the use of specific weapons as long as they do not violate humanitarian principles. However, autonomous weapons raise new issues because artificial intelligence has the potential to make decisions without considering humanitarian values.¹⁵ Therefore,

⁹ E.A. Riani et al., “IMPLIKASI ETIS PENGGUNAAN KECERDASAN BUATAN DALAM SISTEM SENJATA OTONOM: TANTANGAN DAN TANGGUNG JAWAB MORAL DI ERA PERANG MODERN,” *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial* 12, no. 1 (2025): 256–62.

¹⁰ A. Zein and C. Rozali, “Tren Penelitian Artificial Intelligence Dalam Pengembangan Teknologi Militer,” *Spectrum: Multidisciplinary Journal* 2, no. 1 (2025): 1–7.

¹¹ G.B. Persada, “Analisis Penggunaan Bom Termobarik dalam Konflik Bersenjata Ditinjau dari Perspektif Hukum Humaniter Internasional,” *Proceedings Series on Social Sciences & Humanities*, 2024, 17:70–74.

¹² D.I. Sholikah, “Lethal Autonomous Weapons System Dilihat Dari Hukum Humaniter Internasional,” *Jurnal Bedah Hukum* 7, no. 2 (2023): 134–58.

¹³ S.M. Sidauruk et al., “Penggunaan Autonomous Weapons System Dalam Konflik Bersenjata Internasional Menurut Hukum Humaniter Internasional,” *Diponegoro Law Journal* 8, no. 2 (2019): 1489–505.

¹⁴ Sendi Kurnia Putra et al., “Analisis Peran Pemerintah Dalam Perekonomian Nasional Melalui Tiga Fungsi Utama Fiskal: Alokasi, Distribusi, Dan Stabilitas,” *JURNAL ILMIAH EKONOMI DAN MANAJEMEN* 3, no. 6 (2025): 408–16.

¹⁵ R. Shahrullah and M.S. Saputra, “The Compliance Of Autonomous Weapons To International Humanitarian Law: Question Of Law And Question Of Fact,” *Wacana Hukum* 28, no. 2 (2022): 8–17.

although IHL does not explicitly mention LAWS, its principles can serve as a benchmark for testing the legitimacy of the use of this military technology.

The concept of command responsibility, as stipulated in the 1998 Rome Statute, serves as an important reference in legal accountability. Article 28 of the Rome Statute states that a commander can be held responsible if he knew or should have known about a violation and failed to take preventive or punitive measures.¹⁶ This concept emphasizes that responsibility rests not only with the direct perpetrator but also with the party holding command. When associated with autonomous weapons, the question arises as to whether commanders can still be held fully responsible when the system operates autonomously. This question highlights a normative gap that must be addressed.

Relevant theoretical frameworks for addressing this issue encompass several approaches. Command accountability theory emphasizes the hierarchical relationship between superiors and subordinates within the military structure.¹⁷ Arms control theory focuses on international efforts to limit or prohibit the use of certain weapons deemed inhumane.¹⁸ Meanwhile, modern warfare ethics, through just war theory, examines the moral legitimacy of the use of armed violence.¹⁹ These three theories provide complementary perspectives in analyzing the legality and morality of using LAWS.

The international legal basis provides a clear juridical framework. The Geneva Conventions and their Additional Protocols provide for the protection of war victims, the Rome Statute establishes individual accountability for war crimes, and the CCW provides a mechanism for discussion regarding new weapons. At the national level, Indonesia has Law No. 26 of 2000 concerning the Human Rights Court, which allows for prosecutions for gross human rights violations. Law No. 3 of 2002 concerning National Defense affirms the state's obligation to protect sovereignty and security while upholding international law. All of these legal instruments serve as important references in the analysis.

Indonesia's involvement in international discourse is inseparable from its strategic position as a democracy with significant regional influence. Indonesian military doctrine, including its rules of engagement, emphasizes the principle of caution in the use of force. This aligns with IHL values that emphasize the protection of civilians (Mawene & Triadi, 2025). If Indonesia faces the choice of adopting autonomous weapons technology in the future, the national legal framework and commitment to humanitarian law will significantly influence the direction of policy. Therefore, this issue is not merely a global debate but also concerns Indonesia's national interests.

The shift in the pattern of warfare from humans to machines has far-reaching legal, ethical, and political implications. Command accountability, previously clearly vested in humans, now faces a severe test when decisions are made by algorithms. The international community must determine whether existing legal principles are sufficient to address these new challenges or whether new, more specific legal instruments are needed. These developments demonstrate that the law must not lag behind technological advances. If

¹⁶ R. Fani, "Doktrin Pertanggungjawaban Komando Atas Kejahatan Berat HAM Menurut Hukum Pidana Internasional," *Wacana Paramarta: Jurnal Ilmu Hukum* 19, no. 1 (2020): 47–60.

¹⁷ R.W. Hasnal, "Analisis Yuridis Pertanggungjawaban Komando Ditinjau dari Hukum Internasional dan Hukum Nasional," *JURNAL HUKUM MILITER* 17, no. 2 (2024): 1–34.

¹⁸ M.Y. DM et al., "Penegakan Hukum Pidana Internasional Terhadap Kejahatan Perang Dalam Hukum Humaniter," *Jurnal Cahaya Mandalika* 5, no. 2 (2024): 781–99.

¹⁹ K.D. Antono et al., "Transformasi Prinsip Etika Perang dalam Dinamika Konflik Asimetris Kontemporer," *JURNAL SYNTAX IMPERATIF: Jurnal Ilmu Sosial dan Pendidikan* 6, no. 3 (2025): 308–18.

not addressed promptly, a legal vacuum will emerge that risks massive human rights violations without any accountability.

RESEARCH METHODS

The research method used in this study is normative legal research, with an emphasis on the analysis of legal doctrine and relevant regulations regarding command responsibility for the use of lethal autonomous weapons systems within the framework of International Humanitarian Law. The approaches used include a statute approach and a conceptual approach. The statute approach is used to examine positive legal instruments both internationally and nationally, such as the 1949 Geneva Conventions and their 1977 Additional Protocol I, the 1998 Rome Statute of the International Criminal Court, as well as relevant national provisions such as Law Number 3 of 2002 concerning National Defense and Law Number 34 of 2004 concerning the Indonesian National Armed Forces. This analysis is intended to assess the extent to which existing legal instruments are able to regulate command responsibility for the use of autonomous weapons that are no longer fully controlled by humans. Meanwhile, the conceptual approach is used to understand the concept of command responsibility, the principles of International Humanitarian Law (distinction, proportionality, and accountability), as well as the ethical and juridical implications of the use of artificial intelligence in modern warfare. Through a combination of these two approaches, this research seeks to find normative answers to futuristic issues related to who should be held accountable when autonomous weapons violate the laws of war, while also providing a conceptual construction of thought to encourage the formation of new regulations that are more adaptive to the development of artificial intelligence-based military technology.

RESULTS AND DISCUSSION

Command Responsibility in International Humanitarian Law

The concept of command responsibility first gained widespread attention through the case of General Tomoyuki Yamashita in the Philippines after World War II. A United States Military Tribunal found Yamashita responsible for war crimes committed by his troops, even though it was not proven that he directly ordered them. The ruling affirmed that a commander can be held responsible if he fails to control his troops or allows violations of law to occur. This principle later developed into an international legal doctrine known as command responsibility. The Yamashita case was a milestone because it expanded the scope of command responsibility beyond direct orders to include negligence in supervision.²⁰

The 1998 Rome Statute of the International Criminal Court clearly codified this doctrine. Article 28 of the Rome Statute states that a military commander or other superior is responsible for crimes committed by subordinates if he knew or should have known about the acts and failed to take preventive or punitive measures. This formulation clarifies the standard of responsibility by emphasizing three essential elements: a hierarchical relationship, actual or constructive knowledge, and negligence in acting. This provision makes command responsibility not merely a jurisprudential doctrine but an internationally binding norm.

The first element of command responsibility is the superior-subordinate relationship. In a military structure, this relationship affirms the commander's authority over his troops. Article 28 of the Rome Statute stipulates that a commander is responsible for the troops under his command and effective control. This relationship is not only

²⁰ L.L. Imon, "Prinsip Pertanggungjawaban Pidana Komandan Menurut Hukum Humaniter Internasional," *Journal Scientia De Lex* 6, no. 2 (2018): 37–54.

formal through position, but also factual if an individual has actual influence over subordinates. It means that legal responsibility can attach even if a person does not have an official rank, as long as it can be proven that he has command power.

The second element is knowledge or ought to have known. Article 28, paragraph (a)(i), of the Rome Statute stipulates that a commander can be held responsible if he knew or, owing to the circumstances at the time, should have known that his troops were committing or about to commit a crime. This standard is not only limited to actual knowledge, but also includes knowledge that should be possessed by using the principle of constructive knowledge. Under this standard, a commander cannot excuse ignorance when there are strong, foreseeable indications.

The third element is failure to prevent or punish. Article 28, paragraph (a)(ii), of the Rome Statute stipulates that responsibility arises if a commander fails to take necessary and reasonable steps to prevent or repress crimes committed by his subordinates. This principle emphasizes the active duty of a military leader. It is not enough for a commander simply not to order violations, but he must demonstrate a real effort to prevent or punish them. Thus, command responsibility is proactive and requires close oversight of troops.

The limits of command responsibility are closely related to the basic principles of International Humanitarian Law. Article 48 of Additional Protocol I of 1977 establishes the principle of distinction, which requires parties to a conflict to distinguish between combatants and the civilian population. If a military operation involves indiscriminate attacks on civilians, the commander can be held accountable for failure to ensure compliance with this rule. This principle serves as a key criterion for assessing whether a military leader has properly discharged their legal duties.

Article 51, paragraph (5)(b), of Additional Protocol I of 1977 establishes the principle of proportionality. Attacks that cause disproportionate harm to the civilian population relative to the expected military advantage are considered unlawful. With regard to command responsibility, a military leader must rationally assess whether an operation complies with the principle of proportionality. If he disregards the clear risk of civilian casualties, then he may be deemed negligent and legally liable. This principle limits a commander's tactical freedom by placing moral and legal obligations on every decision to attack.

The principles of military necessity and humanity also serve as a reference in determining the limits of responsibility. Article 35, paragraph (2), of Additional Protocol I of 1977 states that methods or means of warfare that cause excessive injury or unnecessary suffering are prohibited. A commander who chooses a method of fighting that contradicts this principle can be held accountable for not balancing military necessity with humanity. In other words, command authority is not absolute but is limited by legal norms that uphold human dignity.

The application of command responsibility to conventional weapons provides a concrete illustration of how these principles are implemented. For example, the use of bombs in densely populated areas resulting in numerous civilian casualties could create liability for the commander who approved the operation. Similarly, the use of unguided antipersonnel mines poses a long-term risk to civilians. Chemical weapons are also prohibited, and commanders who authorize their use can be held internationally criminally responsible. All these examples demonstrate that command responsibility has long been an integral part of the modern laws of war.

A comparison with the legal regime of autonomous weapons reveals new challenges. In conventional weapons, the relationship between the commander's orders

and the consequences on the ground is relatively clear. With autonomous weapons, the decision to attack can be made independently by a machine based on an algorithm. This situation raises questions about whether the standard of command responsibility as stipulated in Article 28 of the Rome Statute can still be effectively applied. Legal debate has arisen over whether commanders can still be considered to have known or should have known when the decision-making process has shifted to an autonomous system. This comparison highlights a legal gap that requires serious attention from the international community.

Command Accountability for the Use of Lethal Autonomous Weapons

The primary characteristic of autonomous weapons is their level of independence in carrying out their combat functions. Semi-autonomous systems typically still involve humans giving attack commands, such as in remotely controlled armed drones. In contrast, fully autonomous systems allow algorithms to make decisions about selecting targets and launching attacks without human approval. This distinction has significant legal implications because it determines the extent to which humans remain involved in the military decision-making process. A higher level of autonomy means less human control over the outcome of a weapon's actions.

The greatest risk of autonomous weapons is target misidentification. The artificial intelligence algorithms used still face limitations in distinguishing between combatants and civilians. Misidentification can occur due to data limitations, programming biases, or complex terrain conditions. If a system attacks a civilian target due to mistaken identity, the question of who is responsible becomes inevitable. This danger is exacerbated in urban warfare, which presents complex interactions between civilians and combatants.

Another equally serious challenge is algorithm transparency. Many artificial intelligence systems operate with mechanisms that are difficult for even their creators to understand, often referred to as the black box problem. This condition makes it difficult to trace the machine's decisions after an attack. The lack of clarity poses a significant obstacle to legal accountability, as investigations require evidence of who made the decisions. Without transparency, it is difficult to determine whether the fault lies with the commander, the operator, or the system itself.

The gap in humanitarian law is particularly evident when it comes to autonomous weapons. There is no international treaty explicitly prohibiting the use of LAWS. Existing legal instruments, such as the Geneva Conventions, Additional Protocols, and Certain Conventional Weapons Conventions, only regulate the general principles of war without addressing these new technologies. Consequently, debate has raged over whether existing laws are sufficient to address the challenges posed by autonomous weapons, or whether new, more specific legal instruments are needed. This regulatory vacuum opens the door for countries to utilize LAWS without clear boundaries.

International forums have attempted to find solutions, one of which is through the Group of Governmental Experts (GGE) under the auspices of the CCW. The ongoing discussions have revealed sharp differences between countries. Some parties urge a total ban, citing ethical concerns and the risk of human rights violations, while others argue that the development of this technology is a sovereign right of states. This debate shows how complex it is to reach a global consensus on the issue of autonomous weapons. The results, to date, have not produced binding regulations, only politically motivated recommendations.

The issue of attribution of blame becomes crucial when autonomous weapons are used. The international legal system is designed to assess the responsibility of human

actors, not machines. If a combat robot shoots a civilian, it is difficult to determine who is responsible: the commander who ordered its use, the operator who activated it, the programmer who wrote the code, or the country that authorized its development. This complexity highlights the need to reaffirm the principle of responsibility to avoid a legal vacuum. Without certainty, the risk of impunity for war crimes increases.

The most traditional responsibility is directed at the military commander, as stipulated in Article 28 of the Rome Statute, which regulates the responsibility of commanders and other superiors. The commander is still considered to have control over the use of the weapon system, including decision when and where the system is activated. However, debate arises as to whether the system's autonomy is so high that decisions can no longer be realistically monitored. Legal debate is growing over whether the "should have known" standard can still be applied when humans are not truly capable of understanding all of the machine's decisions.

The operator is also a potential party to be held accountable. If a semi-autonomous system still requires human commands before engaging, then responsibility can still be attributed to the operator. The concept of meaningful human control emerged as a way to ensure that the human role is not eliminated in the use of weapons. It means that humans must retain the final authority in the decision to attack. If this principle is ignored, the risk of error shifts entirely to the system, and the operator can no longer be held fully responsible. Programmers and companies developing artificial intelligence systems are beginning to be considered as potential liability parties. A growing argument suggests that system errors stem from inadequate algorithm design and testing. However, current humanitarian law does not yet recognize the extension of responsibility to non-combatant civilians such as technology developers. If this issue is not addressed, a legal loophole will exist where technology producers are exempt from accountability even if their systems cause civilian casualties. This debate is ongoing and awaits the development of a new legal regime.

States remain the parties with the clearest legal responsibility. Article 91 of Additional Protocol I of 1977 states that states are responsible for violations of humanitarian law committed by their armed forces. This means that even when new technology is used, states cannot absolve themselves from the obligation to ensure compliance with the law. States are obligated to investigate, prosecute, or punish the guilty parties, and to provide compensation for any losses. This provision emphasizes that, whether individuals or machines are involved, ultimately, states bear primary responsibility under international law.

CONCLUSION

Command accountability for the use of lethal autonomous weapons systems (LAWS) on the modern battlefield demonstrates that the classic principles of international humanitarian law remain relevant despite new challenges posed by advances in artificial intelligence-based technology. Military commanders remain legally obligated to ensure the use of weapons complies with the principles of humanitarian law, including the principles of distinction, proportionality, and precaution, as stipulated in Additional Protocol I to the 1977 Geneva Conventions. However, the autonomous nature of these weapons creates new challenges related to the chain of command, as lethal decisions can occur without direct human involvement. It opens up room for broader accountability, not only for field commanders but also for states, technology developers, and operators involved in the planning, testing, and use of these weapons. Therefore, existing law, while still a useful reference, requires strengthening through the creation of specific rules

explicitly governing the use of LAWS within the context of international humanitarian law.

Addressing this complexity requires concrete steps at both the international and national levels. Globally, the international community, through forums such as the UN and the Convention on Certain Conventional Weapons (CCW), needs to push for a new international treaty that comprehensively regulates the use of lethal autonomous weapons, ensuring legal certainty regarding who is responsible for violations of humanitarian law. Indonesia, as a country with strategic interests in safeguarding its sovereignty and national security, must actively participate in international discussions on this issue, both to promote regulation and to protect national interests. Domestically, integrating humanitarian law into national defense doctrine is crucial, ensuring that the development and utilization of artificial intelligence-based technology in the defense sector remains within the framework of compliance with international law. This way, preventative measures can be taken early on, ensuring that Indonesia becomes not merely a follower but also a normative actor in shaping a new legal system in the era of AI-based warfare.

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