THE LEGAL CHALLENGES OF LAWS AND DRONES

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Abstract

The rapid development and deployment of Lethal Autonomous Weapons Systems (LAWS) and drones have raised significant legal, ethical, and operational challenges for the entire international community. This paper examines the implications of these technologies within the context of international law, focusing on the principles of sovereignty, accountability, and compliance with humanitarian law. It discusses the potential risks posed by autonomous decision-making in warfare, including the lack of human oversight and the challenges in assigning responsibility for unlawful actions. Furthermore, the paper explores existing frameworks, such as the Geneva Conventions and the Convention on Certain Conventional Weapons, in addressing the use of LAWS and drones, while considering the limitations of these treaties in regulating emerging technologies. Finally, the research proposes recommendations for the development of new legal norms that balance technological advancements with human rights and international security concerns.

Keywords: *international law, public law, drones, LAWS, autonomous devices*

1. The legal regime of LAWS: an introduction

LAWS or lethal autonomous weapon systems are a category of systems incorporating autonomy in its critical functions, specifically in target selection and engagement. At the moment of researching the current paper, a legal definition of LAWS could not be found as states had not reached a consensus on the terminology.

This paper will examine the current situation regarding LAWS and assess whether a legal framework can be applied. Furthermore, it will explore whether these systems have been used in real-life situations and, if so, what the consequences have been. By analyzing existing reports from international organizations and other open-source materials, the author will seek to highlight the key issues associated with these systems, particularly in relation to their use or potential use as drones.

To define such systems, states parties to the Convention on prohibitions or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or have indiscriminate effects (also known as the Convention on Certain Conventional Weapons) have started a meeting in 2013 to define and adopt a legal control regime for these types of weapons.

Subsequently, some state parties initiated a working group to establish legal norms. Thus, in 2016, during the Fifth CCW Review Conference, the High Contracting Parties decided to establish an open-ended Group of Governmental Experts (known as the GGE) on emerging technologies in the area of LAWS, building on the outcomes of

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previous expert meetings. Since then, the group has been reconvened annually[1].

The GGE has held annual meetings and has adopted numerous working definitions and reports. Notably, we highlight the 2019 report of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems[2]. In this report, the GGE adopted a non-legally binding set of guiding principles, emphasizing international humanitarian law as the applicable legal framework for these systems. Additionally, it reaffirmed the fundamental role of human responsibility in decision-making and underscored the necessity of ensuring accountability for the development, deployment, and use of emerging weapons systems under the CCW. This includes maintaining a responsible chain of human command and control in accordance with international law.

After the 2019 report, the GGE had other rounds of talks throughout 2020-2022, in which consensus had not been reached, yet, states did acknowledge that states are obligated to adhere to international humanitarian law, and individuals responsible for planning and carrying out attacks must ensure compliance with its provisions[3].

While 2023 did not provide an important update, 2024 and 2025 have outlined that a consensus could be reached regarding a set of elements of a legal instrument, without prejudging its nature, and other possible measures to address emerging technologies in the area of lethal autonomous weapon systems. As such, in 2024 the GGE adopted a rolling text[4] in which it has been agreed upon a description for LAWS as: *"A lethal autonomous weapon system can be characterized as an integrated combination of one or more weapons and technological components that enable the system to identify and/or select, and engage a target, without intervention by a human user in the execution of these tasks."*

Notwithstanding, the notes ensure a context-appropriate human control and judgment over the use and effects of LAWS is essential to guaranteeing their compliance with international law, particularly international humanitarian law (IHL), including the principles and requirements of distinction, proportionality, and precaution in attacks. The GGE also published a compilation of definitions and characterizations of LAWS[5], which focuses on special characteristics and legal principles that are applicable to LAWS. Its important to point out that by analyzing the compilation, we can observe that states have agreed that LAWS are not ammunition, but proper systems that are controlled by a human operator.

States such as China, Australia, Canada, Japan, the Republic of Korea, the United Kingdom and the United States have stated that are against LAWS that are

[1] GGE, *Final Document of the Fifth Review Conference*, CCW/CONF.V/10, 23 December 2016.

[2] GGE, CCW/GGE.1/2019/3, *Report of the 2019 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems*, Geneva, 25–29 March 2019 and 20–21 August 2019.

[3] GGE, CCW/GGE.1/2022/2, *Report of the 2022 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems*, Geneva, 7-11 March, and 25-29 July 2022.

[4] GGE, *GGE on LAWS Rolling text, status date: 8 November 2024*, which can be accessible at the following link: https://docs-library.unoda.org/Convention_on_Certain_Conventional_Weapons_-Group_of_Governmental_Experts_on_Lethal_Autonomous_Weapons_Systems_(2024)/Revised_rolling_text_as_of_8_November_2024_final.pdf, accessed at 20.03.2025.

[5] GGE, *Non-exhaustive compilation of definitions and characterizations*, CCW/GGE.1/2023/CRP.1, 10.03.2023.

unacceptable from a legal and technical standpoint, in which the devices cannot be turned off or are killing indiscriminately. However, states are increasingly developing and deploying weapons with autonomous capabilities.

Although there is no universally accepted definition of LAWS, the proposal by United Nations Secretary-General António Guterres serves as a strong warning about the risks posed by this technology. In the *New Agenda for Peace*, the Secretary-General urged states to finalize, by 2026, a legally binding instrument that would prohibit lethal autonomous weapon systems operating without human control or oversight and that cannot comply with international humanitarian law. Additionally, he called for the regulation of all other types of autonomous weapon systems[6], including drones.

2. How LAWS are challenging an already fragile framework

LAWS represent a growing threat to states and their security, as a looming arms race has been sparked after some autonomous devices were used by different states in their ongoing internal and external conflicts.

One of the most well-known instances in which LAWS were used is the Kargu-2 attack in Libya in 2021[7]. The United Nations Security Council Panel of Experts identified the attack, which was carried out by the Government of National Unity-affiliated forces against forces aligned with General Haftar, in which an autonomous drone, capable of selecting and engaging targets based on machine-learning object classification, was used.

The Panel of Experts also criticized the lack of legal instruments to ensure that devices similar to the Kargu-2 cannot target unlawful objectives (such as schools or hospitals). As a result, they have resorted to outlining core international law principles applicable to drones. The report does not provide follow-up on any known human casualties, primarily because the drones were neutralized by electronic jamming; however, attacks on convoys were noted in the report.

We would like to emphasize that technical issues could arise whenever launching a drone that has information based solely on images that have been uploaded to its database as it could not distinguish *hors de combat* situations. As such, we acquiesce to the opinion of the retired army attorney Sean Watts[8], who considers that states have rarely been willing to accept restrictions on particularly effective weapons, beyond generally applicable rules and principles. Treaties that have banned anti-personnel mines or asphyxiating gases have required a lot of diplomatic implications until they got adopted and implemented, and as such, LAWS or even just drones who act as LAWS will require furthermore clarifications until they are either fully banned or regulated enough to ensure compliance with existing principles.

Sean Watts also raises an important principle that needs to be addressed in regard to LAWS: medical compatibility. Weapons that produce wounds consistent with

[6] United Nations General Assembly, *Lethal autonomous weapons systems Report of the Secretary-General,* Resolution A/79/88/1 July 2024.

[7] United Nations Security Council, *Letter dated 8 March 2021 from the Panel of Experts on Libya established pursuant to resolution 1973 (2011) addressed to the President of the Security Council,* S/2021/229, paragraph 63.

[8] Sean Watts, *Autonomous weapons: Regulation tolerant or regulation resistant?*, Creighton University School of Law; Lieber Institute for Law & Land Warfare, West Point, 09.10.2015, http://dx.doi.org/10.2139/ssrn.2681283.

existing medical protocols and field hospital capacity have generally proven resistant to international regulation.

The need for proper regulations has been highlighted by the United Nations Special Rapporteur on the promotion and protection of human rights and fundamental freedoms while countering terrorism, Fionnuala Ní Aoláin[9]. She explained that drone strikes have been consistently justified in counter-terrorism terms, yet autonomous lethal drones will challenge existing practices. The Special Rapporteur believes that autonomous drones will be a factor in preventing terrorism acts in ways that will not allow victims to redress unlawful actions. The Rapporteur also recalls other reports in which the United Nations analyzed how targeted strikes conducted with drones marked a departure from international law principles.

The Rapporteur further outlines that drones have been integrated by police departments worldwide, being equipped for non-lethal operations, intelligence gathering, and counter-terrorism situations. However, Fionnuala Ní Aoláin argues that current legislation is insufficient to address the potential of drones to cause irreparable harm to the fundamental rights of humans or their property, primarily because existing legislation excludes drones used for law enforcement or national security purposes from its control.

We consider that the Special Rapporteur did provide a recommendation that could help states address the key issue of LAWS, through the proposal for: *"A moratorium on the use of remote biometric recognition technologies in public spaces, at least until the authorities responsible can demonstrate compliance with privacy and data protection standards and the absence of significant accuracy issues and discriminatory impacts and until all the recommendations set out in paragraph 53 (j) of the report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, are implemented."*

Such a requirement would ensure human control over the systems seeing as how the UN Secretary-General noted that some states saw human control as not useful and that it would not be appropriate to adopt a single standard to describe human control over the use of lethal autonomous weapons systems[10]. This is tied to the fact that a small, yet important number of states have been trying to impose their own definitions and concepts of LAWS, as it could be seen in the voting of the United Nations Generally Assembly Resolution A/C.1/79/L.77[11], a resolution that reinforced the mandate of the GGE and established that the UN Secretary-General to begin informal consultations starting in 2025 in regards to LAWS.

According to the UN Secretary-General report[12], LAWS operators are obliged to handle these systems according to the Charter of the United Nations, customary international law, international humanitarian law, international human rights law, international criminal law and the law of State responsibility. However, several states emphasized the importance of command responsibility, asserting that commanders are accountable for all uses of force under

[9] Fionnuala Ní Aoláin, *Human rights implications of the development, use and transfer of new technologies in the context of counter-terrorism and countering and preventing violent extremism*, Report of the Special Rapporteur on the promotion and protection of human rights and fundamental freedoms while countering terrorism, Resolution A/HRC/52/39/1 March 2023, paragraphs 27 and 28.

[10] Resolution A/79/88/1 July 2024 cited, paragraph 13.

[11] United Nations General Assembly, *Lethal autonomous weapons systems*, A/C.1/79/L.77/18 October 2024.

[12] Resolution A/79/88/1 July 2024 cited, paragraph 20.

their command, whether carried out by a human subordinate or a machine. Concerns were raised that the deployment of lethal autonomous weapons systems could undermine this principle.

Additional concerns were raised regarding national security, as the use of lethal autonomous weapons systems could have a destabilizing effect. In particular, they might lower the threshold for the use of force, potentially increasing the frequency and intensity of conflicts and exacerbating humanitarian crises[13]. Concerns were also raised about the potentially destabilizing effects of the proliferation of lethal autonomous weapons systems. Several states highlighted the risks of escalation due to the unpredictability of these systems, including the possibility of machine-to-machine interactions, increased speed of warfare, reduced risk of military casualties for the user state, and asymmetric warfare. There was also concern that lethal autonomous weapons systems could become the focus of an arms race. Some states emphasized that such systems should not be used to pursue absolute military superiority or hegemony.

Despite states seeking a new control regime for LAWS, they are also opposed to overregulating the technology. As a result, finding a balance would be challenging.

States also have provided technological considerations, seeing as how LAWS provide risks in regards to malicious cyberactivity, hardware and software anomalies and malfunctions and decision-making based on incorrect or incorrectly interpreted information[14]. States also critized that LAWS can lack empathy, compassion and the ability for moral reasoning, while they considered the targeting of humans, especially the delegation of life-and-death decisions to machines, to be unethical.

States reaffirmed that human rights, as recognized in the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights, stem from the inherent dignity of every individual. They emphasized the responsibility of all states to uphold and protect human dignity. Several states voiced concerns that the use of lethal autonomous weapons systems could undermine this dignity, leading to dehumanization, unjustified violence, and increased civilian casualties[15]. Similar issues have been raised by experts and international non-governmental organizations.

Outside of the GGE framework, the Latin American and the Caribbean Conference of Social and Humanitarian Impact of Autonomous Weapons adopted a communique[16] in which it has reminded of the Buenos Aires Declaration (2023) for a zone of peace in Latin American and the Caribbean, which includes a safe zone in regards to emerging technologies. Furthermore, the communique establishes that states will:" Collaborate *to promote the urgent negotiation of an international legally binding instrument, with prohibitions and regulations with regard to autonomy in weapons systems, in order to ensure compliance with International Law, including International Humanitarian Law, and ethical perspectives, as well as the prevention of the social and humanitarian impact that autonomy in weapons systems entail;".*

[13] Ibidem, paragraph 40.
[14] Ibidem, paragraph 44.
[15] Ibidem, paragraph 48.
[16] Belen Communique, Communiqué of the Latin American and the Caribbean Conference of Social and Humanitarian Impact of Autonomous Weapons, 23-24 February 2023.

Another important mention is that of the REAIM programme (2023)[17] in which a Call to action was issued towards fostering inclusive dialogue, initiating capacity-building programs and best practices to ensure the responsible deployment of AI in the military, and formulating national frameworks and strategies, among other initiatives. During the REAIM programme, the United States of America released a Political Declaration on Responsible Military Use of Artificial Intelligence and Autonomy[18] and was later endorsed by 54 other states. The Declaration provides a basis for exchanging best practices and building states' capacities, which will allow endorsing states to share experience and ideas.

Despite a growing consensus, some states consider that there are currently no compelling reasons to impose new limitations or restrictions on lethal autonomous weapons systems, nor to revise or update international humanitarian law to specifically address these weapons[19]. Instead, states consider that article 36 of the Additional Protocol I of the Geneva Conventions (1949)[20], which states that *"In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party."* It is important to note that the article does not establish specific requirements for how legal reviews of new weapons should be carried out, leaving the decision to the discretion of states.

However, the lack of an international consensus has allowed LAWS to be developed and prompted states to be supportive of interim measures, such as non-legally binding guidelines, declarations, or norms, as steps toward a legally binding instrument and/or as practical tools for the implementation of that instrument. While we agree to the opinions expressed by professors Benjamin Perrin and Masoud Zamani[21] that states have been grouped in either traditionalists, prohibitionists and dualists, in regards to their LAWS policy, states have refrained from using LAWS in such a manner that would be qualified as unlawful actions.

We consider the position expressed by the Stockholm International Peace Research Institute to be a conclusive standpoint on this issue, namely that there is growing frustration over the slow progress in the GGE on LAWS, as well as its limited participation and scope[22]. Policymakers

[17] More about the programme can be accessed at the following website: https://reaim2023.org and https://www.government.nl/documents/publications/2023/02/16/reaim-2023-call-to-action, accessed at 20.03.2025.

[18] Accessible at https://www.state.gov/bureau-of-arms-control-deterrence-and-stability/political-declaration-on-responsible-military-use-of-artificial-intelligence-and-autonomy, accessed at 20.03.2025, US Department of State, February 2023.

[19] Resolution A/79/88/1 July 2024 cited, paragraph 95.

[20] The Geneva Conventions are a set of international humanitarian laws, comprising four treaties and three additional protocols, that establish legal standards for humanitarian treatment during armed conflicts. The term "Geneva Convention" commonly refers to the agreements of 1949, negotiated in the aftermath of World War II.

[21] Benjamin Perrin, Masoud Zamani, The future of warfare: National positions on the governance of lethal autonomous weapons systems, Articles of War, Liber Institute, West Point, 11.02.2025, article published online at https://lieber.westpoint.edu/future-warfare-national-positions-governance-lethal-autonomous-weapons-systems/, accessed at 21.03.2025.

[22] Alexander Blanchard, Vincent Boulanin et. all, *Dilemmas in the policy debate on autonomous weapon systems*, SIPRI, Commentary, 06.02.2025, published online at https://www.sipri.org/

considering calls to further diversify the process must carefully evaluate the potential benefits and trade-offs. Autonomous weapons systems raise profound questions about the human role in the use of force, and how these questions will be addressed on the international stage, or whether they will be addressed at all, remains uncertain.

3. State practices in using LAWS

The oldest atomically triggered lethal weapon invented by humankind is the mine (land, naval, anti-personnel)[23], and was later regulated by the Ottawa Treaty (1997)[24] in regards to anti-personnel mines. Current LAWS models include the United States Phalanx CIWS[25] or the Israeli Iron Dome[26]. Despite that, a lot of models have been developed, mostly drones, but rarely have been used in a public context.

Beyond the Libya encounter in 2021, there have been other situations in which drones armed with AI functions and lethal payload have been used to thwart threats. Such operations involved Israel in its operation started in 2023 against Hamas, in which Israel used an AI-guided swarm of drones to attack Hamas militants, raising concerns about the ethics of using lethal autonomous weapons in real combat situations. Furthermore, AI was used to identify Hamas operatives and to mark them as members of certain groups[27].

Others consider that drones with some degree of autonomy were used in the Nagorno-Karabakh war in 2020[28] since a lot of different types of drones were used (Bayraktar TB-2, Tor, Strela-10, Osa, Kub, Krug and IAI Harop, but out of these devices only a few have the technology required to acquire targets on their own.

Its important to note that given the varying levels of automation in weapons systems, different typologies have been created to describe the spectrum of human involvement. The most straightforward and commonly used framework is as follows[29]:

- **Semi-autonomous (human-in-the-loop):** systems that, once activated, can

commentary/topical-backgrounder/2025/dilemmas-policy-debate-autonomous-weapon-systems, accessed at 21.03.2025.

[23] Ajey Lele, *Debating Lethal Autonomous Weapon Systems*, Journal of Defence Studies, Vol. 13, No. 1, January-March 2019, pp. 33-49.

[24] Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, known as the Ottawa Treaty or Mine Ban Treaty, signed on the 3rd December 1997 in Ottawa, Canada.

[25] According to the manufacturers website: https://www.gd-ots.com/armaments/naval-platforms-system/phalanx/, accessed at 21.03.2025.

[26] Rizky Citra Anugrah, *A Defense for Guardian Robots: Are Defensive Autonomous Weapons Systems Justifiable?*, Harvard, Law, Online Scholarship, Perspectives, 08.02.2024, published online at https://journals.law.harvard.edu/ilj/2024/02/a-defense-for-guardian-robots-are-defensive-autonomous-weapons-systems-justifiable/, accessed at 21.03.2025.

[27] According to AIAAIC repository. AIAAIC (standing for "AI, Algorithmic and Automation Incidents and Controversies") is an independent, politically and technologically non-partisan grassroots public interest initiative that examines and makes the case for real AI, algorithmic and automation transparency, openness and accountability. Information and its sources in the database were published at https://www.aiaaic.org/aiaaic-repository/ai-algorithmic-and-automation-incidents/israel-attacks-hamas-using-ai-drone-swarm and https://www.aiaaic.org/aiaaic-repository/ai-algorithmic-and-automation-incidents/israel-reportedly-uses-ai-to-identify-37000-hamas-targets, both accessed at 21.03.2025.

[28] Hecht, Eado, *Drones in the Nagorno-Karabakh War: Analyzing the Dat*a, *Military Strategy Magazine*, Volume 7, Issue 4, winter 2022, pp. 31-37.

[29] Benjamin Perrin, *Lethal Autonomous Weapons Systems & International Law: Growing Momentum Towards a New International Treaty*, ASIL, Vol. 29, Issue 1, 24.01.2025, pp. 1-8.

select targets and apply force, but only with human authorization.

- **Supervised autonomous (human-on-the-loop):** systems that, once activated, select targets and apply force without requiring human authorization, but are supervised by a human who can intervene to override the system.
- **Fully autonomous (human-out-of-the-loop):** Systems that, once activated, select targets and apply force without human authorization, supervision, or intervention.

Other developed devices include the Harpy (Israel Aerospace Industries – Israel) which is a fully autonomous anti-radiation loitering munition, the Lancet-3 (Zala Group - Russian Federation) used for reconnaissance, surveillance, and strike mission, and the Kargu (Savunma Teknolojileri Mühendislik - Türkiye) that is a rotary wing attack drone designed to provide tactical reconnaissance and strike capabilities[30].

The ongoing conflict in Ukraine has started a global arms race for drones as both Ukraine and the Russian Federation have used drones extensively against each other. Such operation was conducted by Ukraine in December 2024[31] when an entire mission was conducted only using drones, both aerial and land based. This came after using a land-based robot in September 2024 in the defense of the captured zones in Kursk. In many respects, Ukraine has little option but to fully leverage technology, as the disparity in manpower between Ukraine and Russia remains substantial along the eight-hundred-mile front line of the war. This comes after Ukraine appointed a special commander for its new Unmanned Systems Forces. Following these developments, Ukraine has outlined that it will use new artificial intelligence-based drones that are immune to electronic warfare and with a human operator in or on the loop.

In the battle of Chasiv Yar, both parties to the conflict conducted large night time warfare with drones and showed that the need for network-based solutions to control large swarms of drones is the future of warfare. Autonomous and smart based drones have been used by Ukraine to target facilities in Russia. Modifications to existing drones in order to transit towards artificial intelligence-based models costs approximately 200 USD dollars per unit, meaning that they are very cost effective. The technology implemented in these drones allow armed forces to train computers to identify enemy units and equipment in order to launch unmanned attacks against those objectives, without the need for human ground forces[32].

As such, the war in Ukraine reshaped the concepts of drones and their usage as artificial intelligence allows planers to remove warfighters from direct combat and replace them with autonomous systems[33].

[30] Idem.

[31] Samuel Bendett, David Kirichenko, *Battlefield Drones and The Accelerating Autonomous Arms Race in Ukraine*, Modern War Institute, West Point, 10.01.2025, published online at https://mwi.westpoint.edu/battlefield-drones-and-the-accelerating-autonomous-arms-race-in-ukraine/, accessed at 21.03.2025.

[32] David Kirichenko, *The Rush for AI-Enabled Drones on Ukrainian Battlefields*, Lawfare, Brookings Institute, 05.12.2024, published online at https://www.lawfaremedia.org/article/the-rush-for-ai-enabled-drones-on-ukrainian-battlefields, accessed at 21.03.2025.

[33] Kateryna Bondar, *Ukraine's future vision and current capabilities for waging AI-enabled autonomous warfare*, Center of Strategic&International Studies, march 2025, report, pp. 7-10, published online at https://csis-website-prod.s3.amazonaws.com/s3fs-public/2025-03/250306_Bondar_Autonomy_AI.pdf?VersionId=E2h8uqROea77udoc_og82HWsrfgfJRTZ, accessed at 21.03.2025.

Furthermore, Ukraine produced approximately 2 million drones in 2024 of which 140 aerial vehicles and 33 ground-based models, and as of 2025, a plethora of these systems will have a degree of autonomy.

Despite the ongoing conflict in Ukraine, other states are adopting a strategy similar and have started stockpiling and developing artificial intelligence-based drones. Taiwan has added a twist to its *porcupine* strategy[34] and started using unmanned aerial vehicles in order to reinforce its defenses in order to deter external threats. Both Taiwan and China have started developing new types of autonomous drones, that are specialized in underwater operations[35]. These drones will act as decoys or in order to attack objectives underwater by acting as a swarm.

These drones have been commissioned in order to conduct intelligence operations and customs operations from a distance. The Belfer Center from the Harvard Kennedy School[36] identified Anduril's Altius-600 and Performance Drone Works' C-100 as being already used in the Taiwan Strait, both of them being autonomous devices. In scenarios, both types of drones could cause significant damage to a blockade.

We consider professor Stuart Russell's warning to be highly significant: "*Autonomous weapons aren't merely a problem of accountability; they're a problem of avoiding catastrophic outcomes.*" While some argue that these systems could reduce human casualties, the current state of AI technology poses substantial risks of errors and malfunctions, which could lead to civilian harm or unintended infrastructure damage. A study by the Rand Corporation found that in scenarios where AI-controlled machines make battlefield decisions, human casualties could increase by up to 150%[37].

4. Conclusions

With 119 states in favor of a legally binding instrument, consensus on autonomous weapons has reached an unprecedented level. Given this strong backing and the recent progress in bringing the issue to the General Assembly, the question now appears to be not if, but when an agreement will be reached[38]. However, states that are actively developing such devices have either been undecided or opposed the idea of banning the systems.

[34] Yimou Lee, James Pomfret, David Lague, *Inspired by Ukraine war, Taiwan launches drone blitz to counter China*, Reuters, Reuters Special Report, 21.07.2023, posted online at https://www.reuters.com/investigates/special-report/us-china-tech-taiwan/, accessed at 21.03.2025.

[35] James O'Donnell, *How underwater drones could shape a potential Taiwan-China conflict*, MIT Technology Review, 20.06.2024, article published online at https://www.technologyreview.com/2024/06/20/1094051/how-underwater-drones-could-shape-a-potential-taiwan-china-conflict/, accessed at 21.03.2025.

[36] Eric Rosenbach, Ethan Lee, Bethany Russell,*The Autonomous Arsenal in Defense of Taiwan Technology, Law, and Policy of the Replicator Initiative*, Belfer Center for Science and International Affairs, Harvard Kennedy School, January 2025, p. 14.

[37] Shayna Lee, *Access Alert | The Rise of Autonomous Drones: A Game-Changer in Modern Warfare?* Access Partnership, 30.05.2023, article published online at https://accesspartnership.com/access-alert-the-rise-of-autonomous-drones-a-game-changer-in-modern-warfare/, accessed at 21.03.2025.

[38] Future of Life Institute, *A Diplomat's Guide to Autonomous Weapons Systems, Future of Life Institute*, august 2024, guide published online at https://futureoflife.org/wp-content/uploads/2024/08/AWS-Guide-for-Diplomats_17-September-2024.pdf, accessed at 21.03.2025.

The current level of legal regime enforces the need for a reasonable commander acting in good faith in order to allow such systems to be used during a real operation and such a a partial ban could make everyone safer. As long as a human retains control and accountability, the device should be allowed to function, as long as it follows all other international public law regulations.

At its core, if a weapon system complies with the laws of war yet still provokes moral outrage among critics, is the fault with the weapon itself or with the laws governing warfare? Fundamentally, chemical and biological weapons are banned, and a strong norm persists against the use of nuclear weapons because they violate the three foundational principles of the laws of armed conflict: military necessity, distinction, and proportionality. Drones, by contrast, do not share these shortcomings. They are designed to be precise and proportionate, at least to the extent that any weapon system can be. Drones do not intrinsically violate the norms of armed conflict.

A technology ban could potentially spell out not only a ban on researching autonomous technology, but could harm industries, even institute new sanctionary regimes, and as such would not contribute meaningfully to the development of a less horrible outcome. While their effects are generally predictable, there remains a risk of unintended consequences. Therefore, thorough testing and the establishment of clear guidelines are essential for the successful and responsible implementation of autonomous devices.

References:

- Ajey Lele, *Debating Lethal Autonomous Weapon Systems, Journal of Defence Studies*, Vol. 13, No. 1, January-March 2019, pp. 33-49.
- Alexander Blanchard, Vincent Boulanin et al. *Dilemmas in the policy debate on autonomous weapon systems*, SIPRI, Commentary, 06.02.2025.
- Benjamin Perrin, *Lethal Autonomous Weapons Systems & International Law: Growing Momentum Towards a New International Treaty*, ASIL, Vol. 29, Issue 1, 24.01.2025, pp. 1-8.
- Benjamin Perrin, *The future of warfare: National positions on the governance of lethal autonomous weapons systems*, Articles of War, Lieber Institute, West Point, 11.02.2025.
- Belen Communiqué, *Communiqué of the Latin American and the Caribbean Conference of Social and Humanitarian Impact of Autonomous Weapons*, 23-24 February 2023.
- Convention on the Prohibition of Anti-Personnel Mines (Ottawa Treaty), *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction*, signed on the 3rd December 1997 in Ottawa, Canada.
- David Kirichenko, *The Rush for AI-Enabled Drones on Ukrainian Battlefields, Lawfare*, Brookings Institute, 05.12.2024.
- Eric Rosenbach, Ethan Lee, Bethany Russell, *The Autonomous Arsenal in Defense of Taiwan: Technology, Law, and Policy of the Replicator Initiative*, Belfer Center for Science and International Affairs, Harvard Kennedy School, January 30.03.2025.
- Fionnuala Ní Aoláin, *Human rights implications of the development, use and transfer of new technologies in the context of counter-terrorism and countering and preventing violent extremism, Report of the Special Rapporteur on the promotion and protection*

of human rights and fundamental freedoms while countering terrorism, Resolution A/HRC/52/39/1 March 2023.

- Future of Life Institute, *A Diplomat's Guide to Autonomous Weapons Systems*, Future of Life Institute, August 2024.
- GGE, *Final Document of the Fifth Review Conference*, CCW/CONF.V/10, 23 December 2016.
- GGE, *Report of the 2019 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems*, CCW/GGE.1/2019/3, Geneva, 25–29 March 2019 and 20–21 August 2019.
- *GGE, Report of the 2022 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems*, CCW/GGE.1/2022/2, Geneva, 7-11 March, and 25-29 July 2022.
- *GGE, Rolling text, status date: 8 November 2024.*
- *GGE, Non-exhaustive compilation of definitions and characterizations*, CCW/GGE.1/2023/CRP.1.
- Hecht, Eado, *Drones in the Nagorno-Karabakh War: Analyzing the Data*, *Military Strategy Magazine*, Volume 7, Issue 4, Winter 2022, pp. 31-37.
- James O'Donnell, *How underwater drones could shape a potential Taiwan-China conflict, MIT Technology Review*, 20.06.2024.
- Kateryna Bondar, *Ukraine's future vision and current capabilities for waging AI-enabled autonomous warfare*, Center of Strategic & International Studies, March 2025, report.
- Rizky Citra Anugrah, *A Defense for Guardian Robots: Are Defensive Autonomous Weapons Systems Justifiable?*, Harvard, Law, Online Scholarship, *Perspectives*, 08.02.2024.
- Sean Watts, *Autonomous weapons: Regulation tolerant or regulation resistant?*, Creighton University School of Law; Lieber Institute for Law & Land Warfare, West Point.
- Shayna Lee, *The Rise of Autonomous Drones: A Game-Changer in Modern Warfare?*, *Access Partnership*, 30.05.2023.
- United Nations Documents, *Lethal Autonomous Weapons Systems, Report of the Secretary-General*, Resolution A/79/88/1 July 2024.
- *United Nations General Assembly*, A/C.1/79/L.77/18 October 2024.
- *United Nations Security Council*, Letter dated 8 March 2021 from the Panel of Experts on Libya, Resolution S/2021/229, paragraph 63.
- US Department of State, *Political Declaration on Responsible Military Use of Artificial Intelligence and Autonomy*.