NHSMUN

Background Guide | *DISEC*

NHSMUN
National High School Model United Nations

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Hello Delegates!

I am delighted to welcome you to the National High School Model United Nations (NHSMUN) 2026! My name is Renata Solórzano, and I am honored to serve as your Director for Session 1 of the Disarmament and International Security Committee!

Model UN holds a very big place in my life. In 2021, I attended my first NHSMUN conference. Although it was on Zoom, I had a great time representing Poland in my committee, IFAD. I returned in my senior year to represent Singapore in SPECPOL, and I fell so in love with it that I could not stand it being my last year at NHSMUN. I have so many wonderful memories from those conferences and I am sure you will make even greater ones! I have been lucky enough to be part of the incredible staff for a third year now. Two years ago, I was an assistant director for the United Nations Educational, Scientific and Cultural Organization (UNESCO), where my director and I saw delegates debate on preserving education in conflict zones. Last year I was a director for the Special Political and Decolonization Committee (SPECPOL) where I got the opportunity to lead the debate on safeguarding peacekeepers and journalists in armed conflict. I was born and raised in Mexico City, Mexico.

Currently, I am a third-year student majoring in Architecture at Universidad Anáhuac Mexico. I have been a dancer since I was four years old! I am always down to watch a good sitcom or a comedy movie (the funnier, the better), but I will never say no to a Tom Cruise action movie or watching F1on Sundays. I love to travel and am always "on the move" so I always try to discover new things, whether it's a museum, music, food, a historical building, or just being outdoors enjoying the day.

The two subjects discussed by DISEC this year are "Lethal Autonomous Weapons Systems" and "Small Drone Warfare." These two topics under discussion have a big global influence on security and the threshold for armed conflict, raising urgent legal and ethical challenges. We are excited about the thoughtful discussions, challenging issues, thorough solutions, and diplomatic collaboration that this conference will provide to tackle these issues. If you have any questions, please do not hesitate to contact Kailena or myself. We hope to see you all in March and wish you all the best of luck!

Best,
Renata Solórzano
Session I Director DISEC
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Dear Delegates,

My name is Kailena Song and I am beyond excited to welcome you to the Disarmament and International Security Committee (DISEC) for the 2026 National High School Model United Nations Conference! As your Session II Director, I look forward to seeing how you all choose to approach these global challenges as emerging technologies continue to shape the future.

This is my sixth year doing Model United Nations and my second year on NHSMUN staff. Last year, I was an Assistant Director for DISEC. I really enjoyed working alongside my fellow staff members and seeing delegates use their creativity to create meaningful resolutions. Being able to help run NHSMUN is one of the highlights of my school year because I love to see students challenging themselves to make progress on ongoing international issues. DISEC is my favorite committee because of how relevant it is to both domestic and international current events. I hope you all find these topics as interesting as I do!

I am a sophomore at the University of Michigan studying molecular and cellular developmental biology. Outside of Model UN, I love to hang out outside and spend a lot of my time running and swimming. Some of my favorite hobbies include baking, jewelry making, and trying out new coffee or matcha shops.

NHSMUN is an incredible experience to learn more about debate, foreign policy, and international politics. I hope you all use this opportunity to deepen your understanding of these topics and sharpen your critical thinking. NHSMUN is also a fantastic opportunity to meet new people and express your creativity. I am excited to see the ideas you propose in committee!

If you have any questions or concerns please feel free to reach out! I am more than happy to clarify any information or give guidance on these topics. I look forward to seeing you all in March!

Best Wishes,
Kailena Song
Session II Director DISEC
nhsmun.disec@imuna.org

A NOTE ON RESEARCH AND PREPARATION

Delegate research and preparation is a critical element of attending NHSMUN and enjoying the debate experience. We have provided this Background Guide to introduce the topics that will be discussed in your committee. We encourage and expect each of you to critically explore the selected topics and be able to identify and analyze their intricacies upon arrival to the conference.

The task of preparing for the conference can be challenging, but to assist delegates, we have updated our Beginner Delegate Guide, Advanced Delegate Guide, Research Guide, and Rules of Procedure Guide. In particular, these guides contain more detailed instructions on how to prepare a position paper and excellent sources that delegates can use for research. Use these resources to your advantage. They can help transform a sometimes overwhelming task into what it should be: an engaging, interesting, and rewarding experience.

To accurately represent a country, delegates must be able to articulate its policies. Accordingly, NHSMUN requires each delegation (the one or two delegates representing a country in a committee) to write a position paper for each topic on the committee's agenda. In delegations with two students, we strongly encourage each student to research each topic to ensure that they are both prepared to debate throughout the committee. More information about how to write and format position papers can be found in the Research Guide. To summarize, position papers should be structured into three sections.

I: Topic Background – This section should describe the history of the topic as it would be described by the delegate's country. Delegates do not need to give an exhaustive account of the topic. It is best to focus on the details that are most important to the delegation's policy and proposed solutions.

II: Country Policy – This section should discuss the delegation's policy regarding the topic. Each paper should state the policy in plain terms and include the relevant statements, statistics, and research that support the effectiveness of the policy. Comparisons with other global issues are also appropriate.

III. Proposed Solutions – This section should detail the delegation's proposed solutions to address the topic. Descriptions of each solution should be thorough. Each idea should clearly connect to the specific problem it aims to solve and identify potential obstacles to implementation and how they can be avoided. The solution should be a natural extension of the country's policy.

Each topic's position paper should be **no more than 10 pages** long double-spaced with standard margins and 12 point font size. This is a maximum; **3–5 pages per topic is often a suitable length**. The paper must be written from the perspective of your assigned country and should articulate the policies you will espouse at the conference.

Each delegation is responsible for submitting position papers on or before **February 20, 2026**. If a delegate wishes to receive detailed feedback from the committee's dais, a position must be submitted on or before **January 30, 2026**. The papers received by this earlier deadline will be reviewed by the dais of each committee and returned prior to your arrival at the conference. Instructions on how to submit position papers will be shared directly with faculty advisors.

Complete instructions for how to submit position papers will be sent to faculty advisers via email. If delegations are unable to submit their position papers on time, please contact us at nhsmun@imuna.org.

Delegations that do not submit position papers will be <u>ineligible</u> for awards.

COMMITTEE HISTORY

The Disarmament and International Security Committee (DISEC) was created in 1945 by the General Assembly when the United Nations was initially chartered.[1] The committee was created to discuss topics related to the promotion of international peace. With this purpose, the committee should focus on issues such as disarmament any regional issues that pose a threat to general international security, and promote cooperation in the interest of strengthening the stability of volatile conflicts. Lying outside of its mandate is any matter which requires coercive action. Issues that require coercive action, such as military involvement or the creation of new international legislation, are typically passed up to the Security Council. Over time, DISEC's mandate has changed very little due to its tendency to set long-term goals that are often recycled from committee session to committee session. For example, they have never been able to create legally binding resolutions.

There are no restrictions on DISEC membership, and all 193 United Nations member states are entitled to participate in the committee. The rules of procedure for DISEC include a three-stage structure that is followed for the sessions: general debate, thematic discussions, and action on draft resolutions.[2] As a part of the General Assembly, they must also have verbatim reporting. Verbatim reporting is an official, word-for-word record of a committee session which is translated into the six languages of the United Nations.[3] DISEC has played an incredibly pivotal role in discussions regarding the Nuclear Non-Proliferation Treaty (NPT), which nurtured international norms against nuclear weapons proliferation. DISEC has also helped key disarmament treaties come to life, including the Chemical Weapons Convention and the Convention on Cluster Munitions. Additionally, DISEC has been rather fundamental in raising global awareness about the dangers of weapons of mass destruction (WMD) and the genuine importance of disarmament.

DISEC is one of the main committees of the United Nations General Assembly (UNGA), which serves as a deliberative body for member states to discuss and negotiate disarmament and international security issues. Although it lacks legislative power, it has a profound impact on resolutions and recommendations that shape global norms and policies. In the past, DISEC has collaborated with many entities, such as the United Nations Office for Disarmament Affairs (UNODA), regional organizations such as the African Union and OSCE, and various other civil society groups, to promote disarmament. These partnerships are essential for enhancing the effectiveness of disarmament initiatives and addressing global security challenges.

Since its establishment in 1945, DISEC's commitment to disarmament through promoting transnational cooperation has resulted in significant achievements in international security. In 2006, DISEC summits led to the adoption of multiple resolutions working to limit nuclear weapons activity, which prompted many states to sign the Comprehensive Nuclear Test Ban Treaty (CTBT). The CTBT bans all signatories from producing nuclear explosions and uses technology to monitor the status of states' nuclear progress, working to increase transparency and build trust between international governments.[4] DISEC's primary goal is to ensure global security and peace. In their arguments, delegates should be sure to emphasize this goal while also prioritizing equal representation for all members of the committee.

1 "DISEC: Disarmament & International Security Committee: Imuna: NHSMUN: Model UN," IMUNA, accessed September 19, 2025, https://imuna.org/nhsmun/nyc/committees/disec-disarmament-international-security-committee/.
2 "United Nations, Main Body, Main Organs, General Assembly," United Nations, accessed September 21, 2025, https://www.un.org/en/ga/first/.
3 "Verbatim Reporting | Department for General Assembly and Conference Management," United Nations, accessed September 21, 2024, https://www.un.org/dgacm/en/content/verbatim-reporting.
4 "The Comprehensive Nuclear-Test-Ban Treaty (CTBT)." CTBTO. Accessed September 20, 2025. https://www.ctbto.org/our-mission/the-treaty.

Lethal Autonomous Weapons Systems

Lethal Autonomous Weapons Systems (LAWS) represent one of the most controversial weapons currently in use. LAWS are a type of military device that can independently conduct military operations without humans.[1] Weapons without human control will change the way wars are fought. LAWS will also require many of our current laws that control conflict to be changed. As these systems grow their implications for international humanitarian law (IHL) does as well. In 2013, the United Nations issued an early call to action due to the concerns of LAWS. More recently, United Nations Secretary-General António Guterres has maintained that LAWS are politically unacceptable and recommended that states complete a legally binding document by 2026. The document would forbid the use of LAWS that operate without human supervision or control.[2]

LAWS introduce new legal and ethical challenges due to their existence in a legal gray area of IHL. Under IHL, three principles guide the lawful use of force in armed conflict. These principles are distinction, proportionality, and accountability. Distinction requires that parties in a conflict distinguish between civilians and combatants. Proportionality means that when attacking a military target, the harm to civilians must not be excessive compared to the expected military gain. Accountability ensures that those who plan, order, or carry out attacks are held responsible if they break IHL.[3] These principles are meant to protect civilians and keep warfare within agreed legal and ethical limits. However, to enforce these principles, accountability needs to be decided.

LAWS pose a challenge when it comes to identifying a responsible individual due to the lack of oversight. Thus, breaches of IHL could be allowed due to there not being a clear culprit responsible.[4] Beyond legal frameworks, LAWS will have significant effects on international security. Many militaries view LAWS as the future of warfare and are actively developing increasingly destructive weapons.[5] These states are engaged in an arms race to develop the most effective and deadly LAWS to maintain military superiority. This competition is likely to worsen global relations as states view advances in technology as a direct threat to their security.

Furthermore, there is concern that non-state actors may gain access to LAWS. Insurgent groups may use them to target civilians or other targets due to their ability to be deployed at a distance. However, LAWS may also misidentify civilians even when deployed by traditional militaries. They heavily rely on data and pattern recognition, which may mean that they could incorrectly select targets. Especially when deployed in complex or densely populated areas, misidentification becomes a large concern for LAWS.[6] All of these dangers to human life are further complicated by a growing private sector interest in LAWS. The nature of LAWS means that private interests are not limited to traditional military contracts. Many technologies such as facial recognition, machine learning, and other tools developed for civilians can be deployed for LAWS. This connection of military and private interests is speeding up the rate of advancement for LAWS, making regulation increasingly important. Delegates will need to weigh all of these concerns and their own countries' strategic needs as they debate any future resolution for the regulation of LAWS.

1   Ethan Lee, "What are Autonomous Weapon Systems?," *The Belfer Center for Science and International Affairs*, February 3, 2025, https://www.belfercenter.org/what-are-autonomous-weapon-systems.
2   United Nations Office for Disarmament Affairs, "Lethal Autonomous Weapon Systems (LAWS) – UNODA," accessed June 9, 2025, https://disarmament.unoda.org/the-convention-on-certain-conventional-weapons/background-on-laws-in-the-ccw/.
3   "Basic Principles of IHL - International Humanitarian Law Centre," International Humanitarian Law Centre, accessed July 27, 2025, https://www.diakonia.se/ihl/resources/international-humanitarian-law/basic-principles-ihl/.
4   Miron Sergeev, "Lethal Autonomous Weapon Systems (LAWS): Accountability, Collateral Damage, and the Inadequacies of International Law," Temple iLIT, November 12, 2024, https://law.temple.edu/ilit/lethal-autonomous-weapon-systems-laws-accountability-collateral-damage-and-the-inadequacies-of-international-law/.
5   Shah Meer, "AI, Autonomy, and Arms Race: The Evolving Role of Autonomous Weapons," Modern Diplomacy, October 19, 2024, https://moderndiplomacy.eu/2024/10/19/ai-autonomy-and-arms-race-the-evolving-role-of-autonomous-weapons/.
6   Marwa Fatafta and Daniel Leufer, "AI In Israel's War on Gaza," Access Now, May 9, 2024, https://www.accessnow.org/publication/artificial-genocidal-intelligence-israel-gaza/.

TOPIC BACKGROUND

Definition and Classification of LAWS

The term LAWS refers to a relatively new form of military technology. They use sensor systems and computer algorithms to autonomously identify a target. Then, LAWS use an onboard weapon system to engage and destroy the target.[7] This means they can independently conduct military operations without human input. Many systems utilize artificial intelligence (AI) to identify targets, move across combat zones, and make decisions on the battlefield. Manufacturers claim that the AI can accurately identify, select and eliminate human targets without the need for an operator.[8]

Historically, militaries have always relied on weapons capable of operating without human input. Before modern LAWS emerged, earlier forms of autonomous weapons existed, such as landmines. They worked by some form of sensor or pressure plate that would detonate when something stepped on it.[9] The biggest feature of landmines was that they required no human input but could not distinguish between friend or foe. Landmines would detonate regardless of who stood on them, even civilians and one's own military.[10] The first significant deployment of these devices was during the American Civil War (1860–1865). The difference between the North and South's military forces, equipment, and weapons at the beginning of the conflict was substantial. As the conflict went on, the disparity grew wider in favor of the North, compelling the Southern war industry to adapt and develop. Thus, landmines were a cheap and effective way to target enemy combatants. While other weapons that did not require human input had been used before, this was the first mass adoption of them.[11] Landmines proved to be one of the deadliest weapons of the war, especially due to the near impossibility in treating soldiers who were wounded by them.

Later, mines were developed for naval warfare seeing action during the Russo-Japanese War in 1904. Their inability to differentiate between civilians and military ships caused civilian vessels to frequently be destroyed by them. Occasionally, they would also break loose from where they were anchored and drift away. This caused destruction in communities far away from the conflict who were unprepared for these devices. After this, the US and UK urged that the weapons be banned. They believed the weapons to be a violation of existing international law and custom surrounding warfare. Thus, a second Hague conference was called in 1907 to discuss the issue. While many expected a decisive agreement on the use of mines, they instead received a very limited declaration on improper usage. However, the Hague Conference's inability to control these weapons can be somewhat understood. Few states were willing to agree to stop their use of these weapons due to their advantage and distrust of rival powers. The expectation among the major powers' forces that other countries would set mines in future conflicts prompted them to develop even further. In fact, when war broke out in August 1914, these small agreements were quickly abandoned. Even countries like the UK that advocated for the banning of mines, continued to use these weapons.[12]

7   Sayler Kelley M., *Defense Primer: U.S. Policy on Lethal Autonomous Weapon Systems*, Congress.Gov (Congressional Research Service, January 2, 2025), IF11150, https://www.congress.gov/crs-product/IF11150.

8   "Autonomous Weapons Systems," Autonomous Weapons Systems Watch, May 19, 2025, https://autonomousweapons.org/.https://autonomousweapons.org

9   Geneva International Centre for Humanitarian Demining, "Types of Landmine - GICHD," accessed June 9, 2025, https://www.gichd.org/explosive-ordnance/types-of-landmine/.

10 United Nations Office for Disarmament Affairs, "Lethal Autonomous Weapon Systems (LAWS) – UNODA."

11 Ken Rutherford PhD, "Landmines in America's Backyard," JMU Scholarly Commons, 2020, https://commons.lib.jmu.edu/cisr-journal/vol24/iss2/11/.

12 Richard Dunley, "Mines: The Original "Autonomous Weapons" and the Failure of Early 20th Century Arms Control - History &Amp; Policy," History & Policy, February 25, 2025, https://historyandpolicy.org/opinion-articles/articles/mines-the-original-autonomous-weapons-and-the-failure-of-early-20th-century/.

One of the largest difficulties for the control of LAWS is the lack of any agreed upon definition.[13] In the Convention of Prohibitions on the Use of Certain Conventional Weapons in 2023, several definitions and characterizations of LAWS were provided. One of the most comprehensive definitions stated that LAWS were "… not one or two types of weapons. Instead, they are a capability category, i.e. a weapon system incorporating autonomy in its critical functions, specifically in target selection and engagement."[14] This autonomy in target selection and engagement is the primary area of concern.[15]

It is useful to differentiate the three subcategories of LAWS to understand how human control plays a role in them. First, Human-in-the-Loop Weapons are weapons that can only identify targets and launch an attack upon receiving a human command. This is similar but different from Human-on-the-Loop weapons where operators are able to supervise all actions and disengage when they choose. However, the systems operate independently and will engage targets unless prevented by their supervisor. The third category are those that can operate without any human input or interaction, they are known as Human-out-of-the-Loop weapons.[16] However, the meaning and scope of LAWS are not universal. There are many different interpretations to autonomy and where human control ends or starts. For instance, their autonomous and cognitive capabilities, the purpose of the weapon, and the extent of human supervision, control, or intervention are all areas of variation.[17]

Many experts claim that LAWS need meaningful human control (MHC). The term MHC was first used by Article 36 in 2013. Article 36 is a nonprofit organization dedicated to minimizing the harm caused by certain weapons and a stronger framework to prevent harm in the future.[18] Since its first introduction, MHC has been advocated as a key regulatory principle for any agreement on LAWS.[19] Moreover, it has also influenced the position adopted by several governments during the ongoing United Nations Convention on Certain Conventional Weapons (CCW) negotiations.[20] MHC is typically discussed in terms of humans being "on the loop". Operators constantly monitor LAWS in combat situations to ensure appropriate legal and ethical standards. Following an initial launch or activation by a human operator, the targeting operations that would typically be controlled by humans are taken over by the weapon system itself, utilizing its sensors, software, and weaponry.[21] In accordance with the fundamental principles of discrimination and proportionality found in IHL, the focus is on regulating when a person is recognized as a lawful target and subjected to violence.[22] However, MHC could be difficult to achieve in high pressure situations. These situations often involve bias due to the stressed importance of the action. There are also further challenges in fulfilling the three requirements for MHC: establishing the specifications of the weapon system, specifying the operating settings, and providing suitable monitoring. Despite UN

13 United Nations Office for Disarmament Affairs, "Lethal Autonomous Weapon Systems (LAWS) – UNODA."
14 United Nations Office for Disarment Affairs, *Non-exhaustive Compilation of Definitions and Characterizations*, CCW/GGE.1/2023/CRP.1, March 10, 2023, https://docs-library.unoda.org/Convention_on_Certain_Conventional_Weapons_-Group_of_Governmental_Experts_on_Lethal_Autonomous_Weapons_Systems_(2023)/CCW_GGE1_2023_CRP.1_0.pdf.
15 Amitabh Mathur, "Development of Lethal Autonomous Weapon Systems and Their Implications," *Air Power* 16, no. 4 (December 2021), https://capsindia.org/wp-content/uploads/2022/04/Amitabh-Mathur.pdf.
16 Mathur, "Development of Lethal Autonomous Weapon Systems and Their Implications."
17 Charukeshi Bhatt and Tejas Bharadwaj, "Understanding the Global Debate on Lethal Autonomous Weapons Systems: an Indian Perspective," Carnegie Endowment for International Peace, August 30, 2024, https://carnegieendowment.org/research/2024/08/understanding-the-global-debate-on-lethal-autonomous-weapons-systems-an-indian-perspective?lang=en.
18 "Article36," accessed June 10, 2025, https://article36.org/.
19 *Killer Robots: UK Government Policy on Fully Autonomous Weapons*,(Article 36, April 2013), https://article36.org/wp-content/uploads/2013/04/Policy_Paper1.pdf.
20 Bonnie Docherty, *New Weapons, Proven Precedent*, Human Rights Watch (Arms Division, March 28, 2023), https://www.hrw.org/report/2020/10/20/new-weapons-proven-precedent/elements-and-models-treaty-killer-robots.
21 Neil Davison, "A Legal Perspective: Autonomous Weapon Systems Under International Humanitarian Law," *International Committee of the Red Cross* , November 30, 2017, https://www.icrc.org/sites/default/files/document/file_list/autonomous_weapon_systems_under_international_humanitarian_law.pdf.
22 Bonnie Docherty, *Making the Case*, (Human Rights Watch, March 28, 2023), https://www.hrw.org/report/2016/12/09/making-case/dangers-killer-robots-and-need-preemptive-ban.

An MQ-9 Reaper unmanned aerial vehicle (Credit: U.S. Air Force Photo)

advocacy, these standards of MHC are still not universally observed.

The UN Special Rapporteur on extrajudicial, summary, or arbitrary killings, issued an early call to action in 2013 on the risks that LAWS pose to human rights. This initial call to action has sparked much of the debate that continues to this day. One of the principal points of discussion is the Martens Clause. This is a customary norm of international humanitarian law that mandates the application of "the principle of humanity" in armed conflict. A customary norm is a rule of international law that develops from the consistent and general practice of states,

followed by them out of a sense of legal obligation. It does not need to be written down in a formal agreement since its authority comes from widespread acceptance and recognition as binding. This laid the foundation for arguments against removing human decision-making from LAWS.[23] According to their assessment, there is too large a risk when removing humans from the loop due to failures in monitoring target engagement and execution by lethal weapons technology. Importantly, they cautioned that the issue of legal accountability might become an "overriding issue." Particularly if the relationships between the various

parts of contemporary weapons are too complicated, especially for military leaders, programmers, or manufacturers to comprehend on their own. This would leave a "responsibility vacuum" and "grant impunity" for all applications of LAWS.[24]

Recent conflicts demonstrate how the lack of consensus on defining and classifying LAWS can lead to unpredictable and potentially unlawful use. Autonomous weapons are becoming a military reality. The STM Kargu-2 was used to hunt down and remotely engage retreating rebels in Libya in 2021. They were used as "loitering munitions" that were programmed to attack targets without requiring any connection between the operator and the weapon. This means that the weapons operated as intended without human supervision.[25] Overall, a reexamination of international criminal law and the rules of armed conflict is necessary. The Guiding Principles of the CCW provide a framework for how existing international legal norms may provide some protection and restraint. Nevertheless, due to numerous state disagreements, new strategies should seek to account for the collateral harm caused by the application of LAWS.

23 United Nations General Assembly, *Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns*, A/HRC/23/47, April 9, 2013, https://www.ohchr.org/sites/default/files/Documents/HRBodies/HRCouncil/RegularSession/Session23/A-HRC-23-47_en.pdf

24 Miron Sergeev, "Lethal Autonomous Weapon Systems (LAWS): Accountability, Collateral Damage, and the Inadequacies of International Law," Institute for Law, Innovation & Technology, November 12, 2024, https://law.temple.edu/ilit/lethal-autonomous-weapon-systems-laws-accountability-collateral-damage-and-the-inadequacies-of-international-law/.

25 Sergeev, "Lethal Autonomous Weapon Systems (LAWS): Accountability, Collateral Damage, and the Inadequacies of International Law."

Legal and Ethical Implications under International Humanitarian Law (IHL)

LAWS represent a relatively new and rapidly evolving aspect of warfare technology. The legal foundation for the employment of all weapons in armed conflict, including LAWS, is provided by a few international laws and norms.[26] One of these areas of legal regulation is IHL, where LAWS is an area of serious concern. This is because IHL treaties do not expressly govern autonomous weapon systems as such. Therefore, regulation of LAWS and ensuring their compliance with IHL is difficult. Especially, without a clear international standard for deployment.

Every state that develops, uses, and deploys weapons bears primary responsibility for ensuring this compliance.[27] The soldiers in an armed conflict are the main subjects of IHL. Nevertheless, those who approve, plan, and decide upon such combat are also subject to these regulations. When using weapon systems, a commander or operator's primary legal responsibilities include determining whether an attack could be expected to cause civilian casualties and/or damage to civilian objects. Thus, distinguishing between military and civilian objects is critical for IHL. As well as combatants from civilians, and active combatants from *hors de combat*. *Hors de combat* is a French term that means out of combat. If a combatant is incapacitated due to wounds or sickness, then he would be *hors de combat* and can no longer be made the object of attack.[28] According to Article 16 of Geneva Convention IV, the wounded, sick, and infirm are entitled to be treated as "objects of particular protection" during such conflicts. All protected people shall be treated equally, according to Article 27 of the same treaty. It is also crucial there should not be any adverse distinction based, in particular, on race, religion, or political opinion.[29]

According to the 1977 formulation of the Martens Clause, citizens and combatants remain under the protection and authority of the principles of IHL. IHL is a body of regulations known as the laws of war with the goal to limit the adverse effects of war. In addition to limiting the tools and tactics of war, it seeks to protect those who are not or are no longer engaged in combat. The Martens Clause was derived from established custom, from the principles of humanity, and the dictates of public conscience in cases not covered by the Protocol or by other international agreements.[30]

When determining whether a person or object can be legitimately targeted, the first step is to distinguish between those that have a military character and those that have a civilian one. Some definitions relevant to the principle of distinction between civilians and combatants are:

- Combatants: All members of armed forces except medical and religious personnel

- Armed Forces: Organized armed groups under a responsible command.

- Civilians: Individuals who are not members of the armed forces

- Military Objectives: Objects that make an effective contribution to military action

- Civilian Objects: Objects that are not considered military objectives

On the other hand, the principle of proportionality states that any attack that might have negative effects on civilians must have a military goal that is reasonable

26 United Nations Office for Disarmament Affairs, Existing International Humanitarian Law Applicable to Lethal Autonomous Weapon Systems, CCW/GGE.1/2024/CRP.3, May 27, 2024, https://docs-library.unoda.org/Convention_on_Certain_Conventional_Weapons_-Group_of_Governmental_Experts_on_Lethal_Autonomous_Weapons_Systems_(2024)/CCW_GGE1_2024_CRP.3.pdf.
27 Davison, "A Legal Perspective: Autonomous Weapon Systems Under International Humanitarian Law."
28 "Hors De Combat," International Committee of the Red Cross, June 12, 2025, https://casebook.icrc.org/a_to_z/glossary/hors-de-combat
29 Mariana Díaz, Anderson Henao, Jesús Martínez, and Wanda Muñoz. "The Risks of Autonomous Weapons: An Analysis Centred on the Rights of Persons With Disabilities." *International Review of the Red Cross*, November 1, 2022, https://international-review.icrc.org/articles/the-risks-of-autonomous-weapons-analysis-centred-on-rights-of-persons-with-disabilities-922#footnoteref11_foowagc.
30 Rupert Ticehurst, *The Martens Clause and the Laws of Armed Conflict*, (International Review of the Red Cross, accessed June 13, 2025), https://www.onlinelibrary.iihl.org/wp-content/uploads/2021/07/Martens-Clause-LOAC.pdf.

in light of the possible harm to civilians.[31] All feasible precautions must be taken to avoid, and in any event to minimize, incidental loss of civilian life, injury to civilians and damage to civilian objects. Precautions include verifying targets to ensure that only legitimate military objectives are identified, choosing means and methods of warfare that minimize civilian harm, and carefully assessing the potential impact of attacks before carrying them out. Attacks must be suspended or cancelled if it becomes clear that the expected harm to civilians would be excessive in relation to the anticipated military advantage. Whenever feasible, advance warnings should be provided to civilians and military objectives should be selected in a way that poses the least possible danger to the civilian population.[32]

The International Court of Justice (ICJ) found, in its Nuclear Weapons Advisory Opinion, that the principle of distinction not only forms part of treaty law but has also found entry into customary international law. The principle of distinction is established in several international treaties, including the Geneva Conventions. However, regardless of whether countries have ratified the relevant treaties, this principle remains applicable by IHL. The ICJ stated that "a great many rules of humanitarian law applicable in armed conflict are fundamental to the respect of the human person and 'elementary considerations of humanity.'"[33]

IHL is founded on the idea that a person who is not a combatant is a civilian.[34] According to IHL it is assumed that a person or object is a civilian when there is uncertainty about whether it is a legitimate target. Works or installations that

> *Attacks on places and facilities that are "indispensable to the survival of the civilian population, the environment, and installations containing dangerous forces" are all forbidden.*

contain dangerous forces such as dams, dykes, and nuclear power plants must not be made the object of attack because it could result in the release of dangerous forces and cause significant civilian casualties. Even if they are considered military targets, it is forbidden to attack sites that are situated at or close to these installations if it could result in the discharge of dangerous forces.[35]

However, it can be difficult to put these ideals into effect. These laws become increasingly difficult to apply in situations where facilities have both civilian and military functions. In today's conflict areas, military and civilian items are becoming increasingly intertwined which makes the principle of distinction even more important. LAWS will need to be configured appropriately to terminate missions in these situations. According to the principle of distinction, LAWS would only be permitted to launch an assault once a sufficient number of pre-programmed features had been reconciled with targets that are considered legitimate. Human combatants have obligations under these IHL regulations when using weapons to launch attacks. Moreover, it is the combatants' responsibility to abide by these regulations and to take responsibility for any infractions. Even while cognitive technologies have advanced significantly, it is still unclear if the principles of proportionality and distinction can be digitally represented.

All weapons used in armed conflict, including LAWS, are

31   "Proportionality," Casebook Icrc, accessed June 13, 2025, https://casebook.icrc.org/a_to_z/glossary/proportionality.
32   Markus Wagner, *The Dehumanization of International Humanitarian Law: Legal, Ethical, and Political Implications of Autonomous Weapon Systems*, Social Science Research Network (University of Miami School of Law, December 22, 2014), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2541628.
33   International Court of Justice, *Advisory Opinion of 9 July 2004*, (International Court of Justice, July 9, 2004), https://www.icj-cij.org/index.php/node/103742.
34   Wagner, *The Dehumanization of International Humanitarian Law*.
35   Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law applicable in Armed Conflicts, *Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol 1),* (United Nations Human Rights Office of the High Commissioner, June 8, 1977), https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.34_AP-I-EN.pdf.

governed by a set of international applicable norms and rules. These fundamental guidelines are mirrored in CIHL rules and general principles of international law, and they are formalized in IHL treaties. Under international criminal law, the improper use of autonomous weapon systems may be considered a war crime, a crime against humanity, or even a crime of genocide, depending on the circumstances. For instance, whether a civilian population was systematically wiped out by directed attacks or a target group was purposefully destroyed. General prohibitions and regulations governing the conduct of hostilities still restrict the employment of weapons, means, and methods of combat even regardless of their legal status. These constraints and prohibitions are commonly referred to as the customary IHL principles and have been established in a number of IHL treaties such as the Hague Conventions of 1899 and 1907, the 1949 Geneva Conventions, and their Additional Protocols of 1977.[36]

Under IHL the use of LAWS would be considered illegal in several situations. This includes any type of bombardment strike that treats separated and distinct military objectives in a city, town, village, or other location with a comparable concentration of civilians or civilian objects as a single military goal.

Additionally, it is unlawful an attack that is intended to hit both military targets and civilians or civilian property without making a distinction because (a) it is not targeted at a specific military target, (b) it uses a combat method or means that cannot be targeted at a specific military target, or (c) it uses a combat method or means whose effects cannot be limited as required by IHL. Lastly, it is also illegal an attack that would be excessive in comparison to the projected direct and tangible military advantage and that could be expected to result in incidental civilian casualties, injuries, or property damage. [37]

The International Criminal Court (ICC) issued a number of arrest warrants against the Russian high command between March and June 2024. The arrests were for war crimes of directing attacks at civilian objects and causing excessive incidental harm to civilians. Based on the evidence, Russian high command members are accountable for missile strikes against Ukrainian substations and electric power plants between October 2022 and March 2023. In waves, Russian units launched Shahed-136 drones that flew detours designed to destroy power plants on their own. The application of international criminal law to specific crimes and state behavior related to the deployment of LAWS seems to have the potential to be

strongly established in command responsibility. Especially with the advantage of actual ICC arrest warrants based on publicly available evidence. When commanders knew or should have known that a member of their command was planning to commit a crime but did not stop it or did not punish the offender afterwards, command responsibility is particularly relevant.[38] Computers are skilled at performing quantitative assessments by design, but it is unclear if they can also perform qualitative assessments in the dynamic contexts they could encounter during different conflict scenarios.

Global Safety and Access to Weapons

AI is increasingly seen as a tool for power and a key to achieving global dominance. Therefore, many governments are racing to respond to the rapid advancements of AI technologies. The outcome is what is known as the "global AI arms race." The term "arms race" refers to the competing or interactive efforts of two or more states to enhance the amount or quality of war material and armed personnel relative to one another.[39] Countries, particularly superpowers, are attempting to create advanced military AI technology to improve their military capabilities and obtain

36 Wagner, *The Dehumanization of International Humanitarian Law.*
37 Vincent Boulanin, Laura Bruun, and Netta Goussac, *Identifying Limits and the Required Type and Degree of Human–Machine Interaction* (Stockholm International Peace Research Institute, June 2021), https://www.sipri.org/sites/default/files/2021-06/2106_aws_and_ihl_0.pdf.
38 Sergeev, "Lethal Autonomous Weapon Systems (LAWS): Accountability, Collateral Damage, and the Inadequacies of International Law."
39 Jeremy Julian Sarkin, *The Conflict in Syria and the Failure of International Law to Protect People Globally: Mass Atrocities, Enforced Disappearances and Arbitrary Detentions* (New York: Routledge, 2021). doi:10.4324/9781003198628.

a strategic advantage.[40] Recent advancements in AI make it clear that AI will play an ever increasing role in the militaries of the world. It will significantly affect global politics, strategic competition, and military power. Consequently, this opens up the possibility of more states engaging in an AI arms race for this strategic advantage. [41]

As the arms race for LAWS accelerates, countries are actively developing and deploying advanced AI-driven technologies to gain a strategic edge on the battlefield. Nowadays LAWS are being employed on battlefields around the world. In March 2020, a UN Panel of Experts on Libya reported a possible use of lethal autonomous weapons systems. According to the report, the Government of National Accord forces deployed the Kargu-2 to target and attack the Libyan National Army. These drones were allegedly used unlawfully, marking one of the first recorded attacks by a fully autonomous weapon in the battlefield. The Kargu-2 is a drone manually controllable and autonomous. The Kargu-2 is intended to be an anti-personnel weapon and it only uses machine-learning object classification to

identify and engage human targets. While a variety of weaponry is available, the Kargu-2 attack drone minimizes the range of collateral damage by detonating an explosive charge near the target. Both personnel and logistic convoys were struck down and their operational capabilities were degraded.[42] The drone successfully tracked down retreating Haftar Affiliated Forces.[43] Although the UN report is vague on the subject, it strongly suggests that LAWS were involved.[44]

Furthermore, developing drones with machine vision capabilities has been a growing priority for Russia and Ukraine since the outbreak of conflict between them. Automatic image recognition algorithms, often known as machine vision, allow a drone to recognize a target picture and lock onto it even when it is moving.[45] Russia and Ukraine have reportedly employed at least three distinct weapon systems with a range of autonomous capabilities. Russia has reportedly used the KUB-BLA on numerous occasions. The KUB-BLA is a loitering weapon that recognizes and classifies targets in real time using artificial intelligence visual identification technology.

A loitering munition is a type of unmanned aerial vehicle (UAV) that combines the characteristics of a drone and a missile. It is sometimes referred to as a kamikaze drone or suicide drone. After circling an area for a while in pursuit of a target, it can strike that target by colliding with it and setting off an explosive warhead.[46] The KUB delivers a particular load to target coordinates by precisely hitting ground targets.

Moreover, Russia has also reportedly used the Lancet drone in Ukraine. The Lancet is a multipurpose weapon, capable of autonomously finding and hitting a target. It is equipped with three targeting systems: coordinate, optical, and combined. A combined system means that it integrates multiple targeting methods into one. In this case, both the coordinative and optical systems work together. This means that it navigates to the area using coordinates and then switches to confirm the target visually using the camera systems. It even develops its own navigation field and does not need infrastructure on land or at sea.[47]

40 "The AI Battle Between the US and China: Key Insights for 2025," Solace Global, January 21, 2025, https://www.solaceglobal.com/report/ai-arms-race-2025/.

41 Amal Zerniz, *The Implications of the AI Arms Race on International Security and Peace in Light of Practical Practices and Legal and Ethical Issues* (Kurdish Studies, August 4, 2024), https://kurdishstudies.net/menu-script/index.php/KS/article/download/3284/2225/6195.

42 United Nations Security Council, Resolution 1973 (2011), *Libya, the Use of Lethal Autonomous Weapon Systems,* S/2021/229, March 8 2021, https://casebook.icrc.org/print/21244

43 Cody Vance and Hitoshi Nasu, "The Kargu-2 Autonomous Attack Drone: Legal & Ethical Dimensions," *Lieber Institute West Point*, September 6, 2024, https://lieber.westpoint.edu/kargu-2-autonomous-attack-drone-legal-ethical/.

44 Zachary Kallenborn, "Was a Flying Killer Robot Used in Libya? Quite Possibly", Bulletin of the Atomic Scientists, May 20, 2021, https://thebulletin.org/2021/05/was-a-flying-killer-robot-used-in-libya-quite-possibly/.

45 Kateryna Stepanenko, "The Battlefield AI Revolution Is Not Here yet: The Status of Current Russian and Ukrainian AI Drone Efforts," Institute for the Study of War, June 2, 2025, https://understandingwar.org/backgrounder/battlefield-ai-revolution-not-here-yet-status-current-russian-and-ukrainian-ai-drone.

46 "Loitering Munition or Kamikaze Drones: Meaning, Types & Specifications of Nagastra-1," Testbook, accessed June 23, 2025, https://testbook.com/ias-preparation/loitering-munition.

47 Catherine Connolly, "Weapons Systems With Autonomous Functions Used in Ukraine," Automated Decision Research, July 7, 2022, https://automatedresearch.org/news/weapons-systems-with-autonomous-functions-used-in-ukraine/.

On the other hand, Ukraine has used the Turkish-made Bayraktar TB2 drone. The Bayraktar TB2 is capable of autonomous flying and can perform target acquisition using the onboard laser designator. It can also eliminate the target using their payload of four smart munitions. Additionally, Ukraine has been utilizing the Switchblade 300 and Switchblade 600. These have the ability to recognize specific objects and navigate on their own.[48]

LAWS play a critical role in matters of international peace and security. Seeing the enormous influence AI has had in innovation and development, the nature of global military competition is changing. For instance, the arms race between the United States and China is escalating.[49] The United States has spent almost USD 1.7 billion on projects involving AI. To incorporate AI into vital military areas, the Department of Defense has released a number of documents, such as, the Joint Artificial Intelligence Center, the Strategic Competition Act, the Innovation and Competition Act, and the National AI Strategy. Numerous AI applications are used by the US Armed Forces. Some of them are: early threat warning systems, jets, unmanned aerial vehicles, autonomous drones, and unmanned underwater vehicles.

In terms of autonomous devices, the US is in the forefront. The US

Laser Weapon System Aboard USS Ponce (Credit: U.S. Navy photo by John F. Williams)

had spent USD four billion on research into deadly autonomous weapons by 2010. It also has set aside USD 18 billion for autonomous weapons development through 2020. Furthermore, The United States had invested a further USD 17 billion on drones by 2021, including 3,447 new unmanned systems for land, sea, and air, even though it already had more than 20,000 autonomous vehicles.[50]

The People's Republic of China (PRC) is another major participant in the AI arms race, with the goal of becoming a global leader in AI by 2030. Because of this, many research and development programs involving AI have received billions of dollars in funding. Moreover,

China is the world leader in facial recognition technology, which is used extensively for surveillance. From 2013 to 2018, Chinese investment and funding for AI initiatives accounted for 60 percent of global funding for these projects. Nearly twice as much as the United States did in the same time frame. As a result of large investments in civil-military integration, the Chinese State Council projects that its AI industries would be worth USD 150 billion by 2030. Chinese President Xi Jinping has often underlined China's unwavering commitment to dominating AI, calling it "intelligent warfare." China views investment in AI as a chance to achieve a revolutionary

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48   Connolly, "Weapons Systems With Autonomous Functions Used in Ukraine."
49   Zerniz, "The Implications of the AI Arms Race on International Security and Peace in Light of Practical Practices and Legal and Ethical Issues."
50   Zerniz, "The Implications of the AI Arms Race on International Security and Peace in Light of Practical Practices and Legal and Ethical Issues."

technological advantage and compete with the United States. Nevertheless, China has planned the development, production, and use of LAWS while calling for a ban in several international forums.[51] Accordingly, the United States and European countries have declared that China's increasing AI capabilities are a threat to both national and global security.

Russia wants to have 30 percent of its combat force be partially or completely autonomous by 2030. Furthermore, Russia aims to match China's funding on drones by allocating USD 346 billion for increased autonomous armament. There's a focus on military robots, and hosting yearly conferences on the employment of robots in its armed services. Nevertheless Russia has a smaller annual GDP and overall defense budget than other states. Even though Russia has at least ten research facilities devoted to the application of AI in combat, the country's yearly military spending on AI is only believed to be USD 12.5 million. One possible contributing factor is the international sanctions that forced Russia to reduce its defense budget by 7 percent in 2017, 3.2 percent in 2018, and 4.8 percent in 2019.[52]

With 631 robots per 10,000 workers, South Korea has the highest robot concentration in the world. Due to concerns with their northern neighbors, South Korea is exploring automation to combat its slow population growth. In fact, USD 41 billion is spent on defense each year. It is mostly for the development of fixed and defensive autonomous weapons. South Korea maintains a high level of weapon development capability despite being under US security jurisdiction. For instance, the Samsung SGR-A1, the first permanent autonomous gun turret in history, was created in South Korea in 2006.[53] Overall, there is a clear and consistent push for many states to develop advanced LAWS to maintain current military strength.

Proliferation and Non-state Actors

LAWS technology is advancing rapidly and is likely to proliferate further. Proliferation in this context refers to more countries developing and/or adopting LAWS.[54] Hostile non-state actors (NSA) can potentially use LAWS to gain a significant military edge against other NSAs and state actors. According to the United Nations

Economic and Social Commission for Western Asia (UNESCWA), NSAs are entities that participate or act in international relations. These are organizations with sufficient power to influence and cause a change even though they do not belong to any established institution of a state.[55] LAWS can be used for a variety of purposes by both state and NSAs, such as extrajudicial killing, policing, and warfighting.[56] Moreover, LAWS could make terrorism more dangerous and increase terrorists' ability to terrorize and injure civilians. The deployment of fully autonomous weapons within conventional war zones is unlikely in the near future because professional state militaries demand assurances of predictability and reliability. Predictability is how the weapon's behavior can be foreseen in advance by its operators. Reliability is the ability of the weapon to consistently perform its intended functions.[57] However, hostile NSAs are less concerned with predictability and reliability. Especially if LAWS are a force multiplier in their unbalanced fight.

Attacks by malicious NSAs do not have to take proportionality or distinction into consideration. Terrorist organizations may have this kind of indiscriminate violence

51 Putu Shangrina, "China's Strategic Ambiguity on the Issue of Autonomous Weapons Systems," *Global: Jurnal Politik Internasional* (Airlangga University, July 2022), https://scholarhub.ui.ac.id/cgi/viewcontent.cgi?article=1229&context=global.
52 Philip Chertoff, *Perils of Lethal Autonomous Weapons Systems Proliferation: Preventing Non-State Acquisition"* (Geneva Centre for Security Policy, October 2018), https://www.gcsp.ch/sites/default/files/2024-12/Strategic%20Security%20Analysis_Final.pdf.
53 Chertoff, *Perils of Lethal Autonomous Weapons Systems Proliferation: Preventing Non-State Acquisition.*.
54 "Arms Control and Proliferation Profile: The United States," *Arms Control Association*, accessed August 10, 2025, https://www.armscontrol.org/factsheets/arms-control-and-proliferation-profile-united-states.
55 United Nations Economic and Social Commission Commission for Western Asia, "non-State actors," accessed June 22, 2025, https://archive.unescwa.org/non-state-actors.
56 *Sending Up A Flare: Autonomous Weapons Systems Proliferation Risks To Human Rights And International Security,* (Geneva Graduate Institute, July 2024), https://www.geneva-academy.ch/joomlatools-files/docman-files/Sending%20Up%20a%20Flare%20Autonomous%20Weapons%20Systems%20Proliferation%20Risks.pdf.
57 Davison, "A Legal Perspective: Autonomous Weapon Systems Under International Humanitarian Law."

as their aim. LAWS could foster the terror and intimidation that are essential to their operations.[58] NSAs have historically always been interested in the development of advanced weapons technologies. For instance, the Japanese death cult Aum Shinrikyo worked on several different approaches to create chemical, nuclear, and biological weapons in the early 1990s. Osama bin Laden and al-Qaeda made several efforts to get nuclear material from illicit actors throughout the late 1990s. Regarding LAWS, Hezbollah has been using military-grade drones manufactured in Iran for engagement and surveillance since 2004.[59]

The dangers of LAWS according to the possibility and impact of their proliferation are related to three levels of development: boutique, military off-the-shelf (MOTS), and minimum viable product (MVP). These systems vary widely regarding complexity, ease of access, and user operation. All these factors affect the risk of proliferation. First, MVP LAWS involve homemade and commercially available technologies. NSAs can get the software, technology, and knowledge required to create a minimally functional LAWS. They will work to develop these barely functional LAWS

if they believe they are able to function at this minimum level. These weapons pose the greatest threat to proliferation. However, they are frequently unstable and do not significantly impact contemporary militaries.[60] Then, MOTS are near autonomous and are spreading quickly to anyone who can afford them, including NSAs. The affordability of MOTS LAWS may minimize the risk they pose. Regardless, the expansion of MOTS LAWS is inevitable within the current framework. Lastly,

> *These are the highest impact systems as they are built to have specific impacts against known threats.*

Boutique LAWS are only being developed by a few countries, making them quite limited. Nevertheless, they are very costly. However, the advantages they provide may encourage further expansion. For the presence, their spread outside of the wealthiest states is improbable due to the high cost of development and maintenance.[61]

The technical aspects of the robotics involved in LAWS may have a significant impact on the proliferation process. Certain components of the actual hardware that support low-end AWS have already spread widely. Numerous existing weapons systems, such as low-end robotic devices that can carry projectiles, could be modified to become autonomous. According to the 2016 Report of the Informal Meeting of Experts on LAWS, they can be easily modified to serve military needs. This could raise the possibility of proliferation and lead to issues with accountability. There have been cases of Mexican cartels and ISIS modifying commercial drones for combat use. However, drones operated by ISIS do not demonstrate an innovative capacity to alter their distribution of weapons. NSAs may benefit from simple tools, but they fall short of the force capacity and symbolic authority that they frequently seek when looking for complex weapons systems.[62]

High-end systems might not be as likely to proliferate. Apart from technological limitations, sanctions regimes are meant to regulate them. Sanction regimes refer to the series of international laws, agreements, and controls which control the export of certain materials. They control the physical components

58   Chertoff, *Perils of Lethal Autonomous Weapons Systems Proliferation: Preventing Non-State Acquisition.*
59   Avery Plaw and Elizabeth Santoro, "Hezbollah's Drone Program Sets Precedents for Non-State Actors - Jamestown," *The Jamestown Foundation*, November 10, 2017, https://jamestown.org/program/hezbollahs-drone-program-sets-precedents-non-state-actors/.
60   Paul O'Neill, Sam Cranny-Evans, and Sarah Ashbridge, *Assessing Autonomous Weapons as a Proliferation Risk*, (Royal United Services Institute, February 8, 2024), https://static.rusi.org/future-laws-occasional-paper-feb-2024.pdf.
61   O'Neill, Cranny-Evans, and Ashbridge, *Assessing Autonomous Weapons as a Proliferation Risk.*
62   Austin Wyatt, *Examining Supply Chain Risks in Autonomous Weapon Systems and Artificial Intelligence*, Applied Cybersecurity & Internet Governance, (November 29, 2023), https://www.acigjournal.com/Examining-Supply-Chain-Risks-in-Autonomous-Weapon-Systems-and-Artificial-Intelligence,184305,0,2.html.

of high-end autonomous systems. For instance, the Wassenaar Arrangement is an export control regime with 42 participating countries. It controls the export of conventional arms, dual-use materials, and technologies. In 2013, the arrangement added controls on intrusion software and surveillance systems.[63] Specific technologies that are regulated by such regimes, may be hard for less developed countries or NSAs to replicate. Therefore, nonproliferation procedures have regulated some aspects of high-end AWS. [64]

On the other hand, the software involved in LAWS may be difficult to control. Many of the software components that allow autonomy in LAWS are already freely available. For instance, there is software that can recognize humans and allow on-demand aerial vehicles to assemble rudimentary groups.[65] Despite the relative effectiveness of less complex weapons and the challenges of more complex systems, NSAs persist in their pursuit of advanced weapons. Partially because advanced weaponry promises to "level the playing field" for less well-funded NSAs by significantly increasing the amount of force they may use. Secondly, advanced weapon systems also provide NSAs with a substantial reputational and

symbolic advantage. Since only a few countries possess such weapons, any NSA which gains access to them has an immediate jump in strength. According to Bruce Hoffman, an internationally recognized scholar of terrorism, "success for terrorists is dependent on their ability to keep one step ahead of not only the authorities but also counterterrorist technology." It is quite clear that so long as NSAs exist they will continue to pursue the development of high-end LAWS.

By controlling exports, states can reduce the risk that LAWS will be diverted to prohibited actors. Export controls have long been employed by states to control the flow of sensitive products, technology, or services to other hostile groups. Given the potential for LAWS to aid criminal actors there is a need for multilateral export controls. They could limit the transfer of military-grade LAWS and essential components to reliable state actors. During the Cold War, to stop technological transfer to the USSR, such regulations were implemented by the United States and its allies. These measures were intended to prevent the transfer of sensitive technology to hostile state actors. Unfortunately, the negotiation for a new export control regime has not been achieved.[66]

Luckily, the Wassenaar Arrangement provides a ready platform for the new export control on LAWS. All parties to the Arrangement could include a list of dual-use products and technologies in their national export control lists. When countries apply it and incorporate this list into their own national laws or regulations, they monitor and regulate the export of these items accordingly. This can be achieved by creating licenses, approval processes, or restrictions on exports. A crucial element is that export authorities closely watch all transactions, requiring entities wishing to transfer listed commodities to get an export license.

Currently, states under the arrangement pledge to report on the transfers and denials of controlled items to parties outside the Wassenaar arrangement. Moreover, states commit to sharing information on sensitive dual-use products and technologies as well.[67] Wassenaar best practices also serve as a guide for states, and they include safeguards against export equipment being diverted to unintended users. Due to criticism of the previous 2013 amendment to Wassenaar, its implementation has been delayed. Unfortunately, the amendment mistakenly criminalized many of the essential tools for combating malicious

63 World Trade Organization, *Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies*, (Wto.Org, accessed June 24, 2025), https://www.wto.org/english/res_e/booksp_e/int_exp_regs_part3_5_e.pdf.
64 United Nations Office of Disarmament Affairs, *Report of the 2016 Informal Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS)*, (The Convention on Certain Conventional Weapons, 2016), https://unoda-documents-library.s3.amazonaws.com/Convention_on_Certain_Conventional_Weapons_-_Informal_Meeting_of_Experts_(2016)/ReportLAWS_2016_AdvancedVersion.pdf.
65 *Sending Up A Flare: Autonomous Weapons Systems Proliferation Risks To Human Rights And International Security.*
66 Chertoff, *Perils of Lethal Autonomous Weapons Systems Proliferation: Preventing Non-State Acquisition.*
67 *Criteria for the Selection of Dual-Use Items* (2004), https://www.wassenaar.org/app/uploads/2016/01/08Criteria-for-the-Selection-of-Dual-Use-Goods-including-Sensitive-and-Very-Sensitive-Items.pdf

programs. This was made to strengthen controls over the export of surveillance devices.[68] Now it has been recognized as a failed attempt to adequately characterize intrusive surveillance software. Nevertheless, this should not be an obstacle to regulating dual-use technology of LAWS. Instead, clear definitions and specifications on technology involved in development should be added to export control lists.

Preventing Civilian Casualties

António Guterres has repeatedly warned of the risks associated with the weaponization of AI. LAWS's unpredictable nature raises the stakes even further. Because these systems rely on algorithms that react to external input, it is challenging to predict or regulate their behavior. This unpredictability compromises strategic efficiency of military operations.[69] These systems are susceptible to biased data, programming errors, and misinterpretations of battlefield situations. All of which could result in unintended civilian casualties. It could even result in these tools being used in mass killings or genocide. The criteria that will determine who is and is not a combatant or target contains aspects

An officer places a device to destroy an explosive (Credit: U.S. Navy photo)

like gender, age, race, and ability.[70] This produces bias that may result in false positives, the murder of innocent people, or the destruction of civilian objects.[71] Technology may not be able to distinguish between targets adequately.

Advanced observation and identification skills should be required of LAWS. These capacities would guarantee adherence to the IHL principle of distinction. Nevertheless, both civilians and combatants alike are at risk of an accidental escalation. It has been shown by researchers that AI systems frequently misidentify

groups based on biased data. Groups of people may be misidentified due to similarities between them and active combatants. For instance, disabled people carrying assistive devices could be mistaken for troops carrying guns. In addition, image recognition frequently misidentifies racialized minorities and women. In the case of combatants, the ones who are no longer able or willing to fight are often misinterpreted by machines. These concerns about misidentification are made worse by a lack of accountability for these systems.[72]

68 James Vincent, "Tencent Says There Are Only 300,000 AI Engineers Worldwide, but Millions Are Needed," *The Verge*, December 5, 2017, https://www.theverge.com/2017/12/5/16737224/global-ai-talent-shortfall-tencent-report.
69 Taylor Jones, "Understanding Autonomous Weapons Systems: An Overview of Their Impact and Risks - Autonomous Weapons Systems," *Autonomous Weapons*, April 25, 2025, https://autonomousweapons.org/impact-and-risks-overview/.
70 United Nations, "UN Addresses AI and the Dangers of Lethal Autonomous Weapons Systems," Regional Regional Centre for Europe for Western Europe, June 6, 2025, https://unric.org/en/un-addresses-ai-and-the-dangers-of-lethal-autonomous-weapons-systems/.
71 Eugenio V. Garcia, "Killed by Algorithms: Do Autonomous Weapons Reduce Risks?," *Beyond the Horizon ISSG*, December 22, 2022, https://behorizon.org/killed-by-algorithms-do-autonomous-weapons-reduce-risks/.
72 Branka Marijan, "Autonomous Weapons: The False Promise of Civilian Protection," *Centre for International Governance Innovation*, November 28, 2022, https://www.cigionline.org/articles/autonomous-weapons-the-false-promise-of-civilian-protection/.

The development and use of LAWS implicate at least six core principles of international human rights law. These are: right to life, right to peaceful assembly, human dignity, non-discrimination, right to privacy, and right to remedy. The right to life applies to both military conflict and law enforcement activities. According to the right of life, force must be used proportionately and only to accomplish a justifiable goal. Nevertheless, the use of fatal force may only be used in extreme circumstances to protect human life.[73] The principle of human dignity establishes that people have inherent worth that is universal and inviolable. LAWS use algorithms that turn humans into data points which may prevent their understanding of human dignity. They dehumanize their targets as a result of their software.[74] The non-discrimination principle demands that everyone's human rights be protected, regardless of their ethnicity, sex or gender, ability, or other legal status. A system's design and decision-making is impacted by the biases of its developers. This may manifest in their programming or selection of training data. When a LAWS is used, a human operator may not be able to carefully examine suggested targets or to correct mistakes before force is used. Algorithmic bias has the potential to impact existing marginalized populations.[75]

Some problems related to target selection and identification are biases, brittleness, misalignments, and model proliferation. Due to programmed biases, AI systems may target members of ethnic groups. It could even view all male civilians as combatants if datasets lack diversity. There is also brittleness, which is the inability to adjust and function properly when given data it has never seen before. For example, if enemy combatants illegally use one school bus or ambulance, the system may begin to view all of these vehicles as legitimate targets. Furthermore, throughout the targeting process there are misalignments. This is the term for AI that prioritizes a prompt or command over significant values or constraints.[76] The systems could prioritize the "goal" of eliminating enemy combatants over any incidental or disproportionate harm to civilians. AI's "forecasting" is based on data analytics from past behaviors. Therefore, it lacks human reasoning and context. This could prevent them from examining whether a proposed objective can be lawfully targeted, as required by IHL.

The models being sold are already trained using previously gathered personally identifiable information, such as name, address, phone number, or social security number. Even worse, they could have biometric data. This entails information about an individual's physical, physiological, and/or behavioral traits. These could then be misused as intelligence to optimize AI-military systems, which could create a severe privacy invasion and a widespread risk to all communities.

AI systems are increasingly taught using synthetic data. Synthetic data is data created by computers trying to replicate real-world data. This entire process works by collecting generalized data and analyzing it. Then, the system will make predictions based on patterns that it recognizes. However, the systems still struggle in determining similarities between the data it was trained with and the contextual knowledge because the data regarding the population is limited. As a result, there is a greater lack of accuracy because the AI system only replicates what it has learned. New models are increasingly being trained using synthetic datasets. This only increases uncertainty and new unpredictable hazards.[77]

73　International Covenant on Civil and Political Rights,General Comment No. 36, CCPR/C/GC/36 (September 3, 2019), https://www.ohchr.org/en/calls-for-input/general-comment-no-36-article-6-right-life

74　Bonnie Docherty, "A Hazard to Human Rights," *Human Rights Watch*, April 28, 2025, https://www.hrw.org/report/2025/04/28/hazard-human-rights/autonomous-weapons-systems-and-digital-decision-making.

75　International Committee of the Red Cross, "Rule 88. Non-Discrimination," accessed June 22, 2025, https://ihl-databases.icrc.org/en/customary-ihl/v1/rule88.

76　Marijan, "Autonomous Weapons: The False Promise of Civilian Protection," November 28, 2022.

77　Jimena Sofía Viveros, *The Risks and Inefficacies of AI Systems in Military Targeting Support*, (Humanitarian Law & Policy Blog, September 4, 2024), https://blogs.icrc.org/law-and-policy/2024/09/04/the-risks-and-inefficacies-of-ai-systems-in-military-targeting-support/.

CURRENT STATUS

The Israeli Use of AI Targeting Systems in Gaza

The dispute between Israel and Palestine is one of the longest running and most violent conflicts in the world today. The Israeli-Palestinian conflict dates back to the end of the nineteenth century. In that time there were disputes that arose in the colonies of Türkiye and the UK. In 1947 the UN issued Resolution 181, also referred to as the Partition Plan. This was adopted to split the British Mandate of Palestine into Arab and Jewish states. The first Arab-Israeli War began when the State of Israel was established on May 14, 1948. Israel's victory in the war resulted in the displacement of 750,000 Palestinians. Following the war, the lands were divided with Israel occupying the majority of the former mandate. Jordan occupied the West Bank and Egypt occupied the Gaza Strip.[78] Tensions in the region increased during the following years, especially between Israel and their neighbors. In the late 1970s, the landmark Camp David Accord normalized relations between Israel and Egypt. However, this did not resolve the issue of Palestinian sovereignty. Despite work between the Palestinian Liberation Organization (PLO) and Israeli government, much of the region's issues remained unresolved.

This set the stage for Hamas. It is a paramilitary and political organization influenced by the Muslim Brotherhood that aims to gain control of the Gaza Strip. Following Hamas's electoral victories in the 21st century, violence between Hamas and the Israeli military escalated. During this phase many of the attempts at negotiation failed. As time went on, the tension continued to grow between the two powers. More recently, in October of 2023 Hamas launched rockets into Israel. They unexpectedly overran southern Israeli cities and towns across the Gaza Strip border. More than 1,300 Israelis were killed, 3,300 were injured, and hundreds were taken hostage. The Israeli cabinet officially declared war on Hamas one day after the October 7 attacks. The defense minister then ordered the IDF to impose a "complete siege" of Gaza.[79]

The Israeli military's employment of LAWS in its operations in Gaza has been extensive since October 7, 2023. Israel has embraced a system that blends human decision-making with AI capabilities. The foundation for incorporating AI into Israeli military operations was the Momentum initiative. In this method, humans use aircraft to carry out strikes, while AI oversees locating, evaluating, and tracking targets.[80] This system has been developed to help increase the speeds in which attacks can be conducted. Based on real-time, updated, and synced data, these AI-driven systems automatically identify targets. This technology acts as a "target production factory" which has allowed the IDF to increase its response times.

Starting in 2019, by 2023 the unit was fully operational and able to assist the IDF. When war broke out in 2023 the number of targets it could generate became obvious. An average daily total of more than 1,000 targets have been hit during the conflict, along with locating high-ranking combatant leaders. To achieve this the IDF has developed several unique targeting systems.[81]

First, for quick target generation, the "The Gospel" technology has been in use in the war on

78 BBC News, "Israel and the Palestinians: History of the Conflict Explained," January 20, 2025, https://www.bbc.com/news/newsbeat-44124396.

79 Center for Preventive Action, "Israeli-Palestinian Conflict | Global Conflict Tracker," Global Conflict Tracker, July 7, 2025, https://www.cfr.org/global-conflict-tracker/conflict/israeli-palestinian-conflict.

80 Muzen Ismailovic, "Algorithmic Targeting: The Role of Artificial Intelligence in Israeli Strikes in Gaza and Its Ethical Implications," Éclairage, February 5, 2025, https://www.grip.org/wp-content/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://www.grip.org/wp-content/uploads/2025/05/EC-2025-02-05-25-MI-IA-Israel-Gaza-english-version.pdf&attachment_id=23543&dButton=true&pButton=true&oButton=false&sButton=true&pagemode=none&_wpnonce=930e48537e.

81 "Gaza War: Israel Using AI to Identify Human Targets Raising Fears That Innocents Are Being Caught in the Net," *Queen Mary University of London*, April 17, 2024, https://www.qmul.ac.uk/media/news/2024/hss/gaza-war-israel-using-ai-to-identify-human-targets-raising-fears-that-innocents-are-being-caught-in-the-net.html.

Israeli Defense Forces drone (Credit: IDF Spokesperson's Unit)

Gaza since November 2, 2023. The system's main purpose is to identify targets for military strikes automatically. This system focuses on identifying military installations rather than individuals. "The Gospel" automates much of the target identification process removing many previously human functions. The system uses a set of markers to identify possible military targets. These markers include things like a visible military presence, defensive structures, and areas where large groups of people are gathered. It also looks at supply movements over time to spot patterns. To build a full report, the system combines information from many sources, such as radar, satellite images, thermal sensors, and intelligence reports. Israel's target list is created largely through this kind of integrated process. According to the former Israeli army Chief of General Staff this system produced 100 targets a day during Israel's 11-day conflict with Hamas in May 2021.[82] This was a dramatic increase from the prior rate of 50 targets annually in Gaza. In addition, he stated that 50 percent of the targets that were created later came under attack effectively. Thus, autonomous target identification is clearly a crucial part of the IDF's strategy in Gaza.

On the other hand there's the "Lavender" system. During the early stages of the current Gaza conflict, "Lavender" was crucial in creating a database of Hamas-affiliated human targets. All members identified by this system were designated as enemy insurgents and direct bombing targets.[83] The IDF approved its use as a target-recommendation tool after manually sampling hundreds of predictions. After completing samplings of hundreds of predictions, the unit concluded "Lavender" had achieved a high accuracy rate. The system is designed to work by consuming information and slowly building a profile on each of its targets. The system can also compare these profiles with those of other targets through this approach. To determine if a person is likely to be a militant, it then meticulously goes through surveillance data on every person in Gaza. This includes pictures, phone numbers, and other relevant information. Participation in WhatsApp groups with known militants, frequent phone changes (every few months), or frequent address changes are commonly chosen indicators.[84] These parameters are used to categorize Palestinians based on how much they resemble militants. Anyone whose characteristics match those of a terrorist, is targeted for killing with minimal human assistance.

In the early weeks of the war in Gaza, the "Lavender" system classified 37,000 Palestinians. This was done by the system analyzing

82   Ismailovic, "Algorithmic Targeting: The Role of Artificial Intelligence in Israeli Strikes in Gaza and Its Ethical Implications," August 6, 2025.
83   Ismailovic, "Algorithmic Targeting: The Role of Artificial Intelligence in Israeli Strikes in Gaza and Its Ethical Implications," August 6, 2025.
84   Harry Davies and Bethan McKernan, "'The Machine Did It Coldly': Israel Used AI to Identify 37,000 Hamas Targets," *The Guardian*, April 4, 2024, https://www.theguardian.com/world/2024/apr/03/israel-gaza-ai-database-hamas-airstrikes.

all data available to it for all 2.3 million Palestinians in Gaza. It classified each person's likelihood of being active in the military branch of Hamas. "Lavender" automatically targets someone for bombing once it concludes that they are a Hamas militant. It does not require independent confirmation by human users before finalizing its selection. The +972 magazine reported troops who worked with the system. They said that "Lavender" often misidentifies people as targets just because their communication habits are similar to those of Hamas militants.[85]

Lastly, the "Where's Daddy" system comes into effect. Instead of hitting targets during military operations, this technology was developed to follow selected individuals and detonate bombs when they enter their family homes. From their standpoint, it is far more likely to attack these people successfully while they are at home as opposed to military locations. This would imply harder conditions to perform the bombings. This has been a major contributing reason to the higher number of civilian deaths. Israeli military surveillance technologies can quickly and instantly link people to their family homes. Complex programs have been created to track thousands of people in real time and simultaneously to take advantage of this. These technologies detect when

the targeted individuals enter their homes. Then, they automatically notify a targeting officer, who then quickly launches the attack on the house. As a result, it affects all occupants.[86]

Although such targeting techniques may be militarily effective, they also present ethical concerns. The outcome of this strategy is grim, with an alarming death toll. It has exceeded 41,000 direct deaths in Gaza alone.[87] Over time, the maximum number of civilian casualties that could be allowed "went up and down", with little oversight.[88]

The Commercial Sector's Role in LAWS Development

With the demand increasing for LAWS there is a growing commercial sector. There is also risk due to the unregulated nature of this commercial development. For instance, the majority of AI's current advancements have been made in the private sector. However, this will change as militaries and arms manufacturers invest more heavily in LAWS. The biggest area for expansion is the incorporation of AI in many currently existing systems, not just novel weapons systems. It is important to note that the use of AI within the military is not an issue by itself. There are

cases such as when it is used for autonomous navigation, refueling, or other functions, where misuse is a nonissue. However, LAWS is a different field altogether. Even when the use of AI is not directly linked to LAWS, its use enhances the weapons' capabilities without the need for complex software. Many tools have yet to be fully developed. Thus, many militaries will continue to experiment with these new tools. This experiment could pose risks for security as tests may be conducted in conflict zones.

To help identify the companies involved Pax for Peace developed a report on large, traditional arms-producing companies and specialist start-up companies involved in the arms trade.[89] To achieve this, they selected companies that are ranked among the 20 largest arms producers listed by both the Stockholm International Peace Research Institute (SIPRI) and Defense News in their respective top-100 rankings. Then, companies that have been active players in the area of autonomous systems were also included. The list was completed with a dozen smaller companies outside the top 100, working on relevant niche products. From this, they were able to identify companies directly involved in the commercial trade around LAWS. The five largest companies were Lockheed Martin, Boeing, Raytheon, Northrop, Grumman

85 Yuval Abraham, "'Lavender': The AI Machine Directing Israel's Bombing Spree in Gaza," +972 Magazine, April 25, 2024, https://www.972mag.com/lavender-ai-israeli-army-gaza/.
86 "Gaza War: Israel Using AI to Identify Human Targets Raising Fears That Innocents Are Being Caught in the Net," April 17, 2024.
87 Ismailovic, "Algorithmic Targeting: The Role of Artificial Intelligence in Israeli Strikes in Gaza and Its Ethical Implications."
88 Davies and McKernan, "'The Machine Did It Coldly': Israel Used AI to Identify 37,000 Hamas Targets."
89 Frank Slijper, *The Arms Industry and Increasingly Autonomous Weapons,* Slippery Slope (PAX for peace, November 3, 2019), https://paxforpeace.nl/wp-content/uploads/sites/2/import/import/pax-report-slippery-slope.pdf.

and BAE Systems.[90] They generate a total of USD 159 billion in revenues from military contracts, which is more than one-third of the entire revenue of the top 100 businesses.[91]

Given that the US has by far the world's largest defense budget, it is unsurprising that four of these five companies are American.[92] According to DefenseScoop and the Brookings Institution, the US Department of Defense has requested more than USD three billion for AI research and integration in 2024 alone. This alongside investments across the globe, the AI defense market is expected to reach USD 30 billion by 2024.[93] This number however, does not capture the full picture of AI development for LAWS. It excludes any private development not explicitly for military purposes, meaning the real market is likely far larger. There is clear interest in further expansion shown by the US-based business Anduril recently constructing a USD one billion factory. It will have the potential to eventually produce tens of thousands of autonomous systems and weapons each year. The corporation is also working on developing marine drones and counter-drone devices in collaboration with the United States and India. All of which are intended to decrease the need for human intervention and speed up decision-making in combat situations.[94] This expansion signals the commercial sector's transition from niche innovation to mass production.

Anduril Industries and Palantir Technologies have taken the lead in developing AI-assisted military operations. Palantir, already well known for its advanced AI and

> *Palantir has been supplying software that converts military intelligence, surveillance, and satellite imagery into useful information.*

data analysis tools, is now adapting these technologies for military use. For example, it is currently servicing the US and Ukrainian governments with battlefield data processing and operational decision support. This program improves combat awareness and facilitates semi-autonomous targeting.[95] Their 2024 contracts reportedly amounts to hundreds of millions of dollars, reflecting the growing demand for AI-driven military tools.[96]

There is also the concern for companies to support foreign governments. For instance, BAE systems is a UK-based firm, but its largest customer is the US military. This close link between corporate actors and national defense demonstrates the role the private sector will play in LAWS.[97] These companies have incentive to work towards limiting any regulation on AWS. Companies are powerful entities with political power and advocacy strength especially due to the defense sector's size. Their future earnings are clearly tied to the further expansion of AWS.[98] As a result, it becomes more challenging to amend IHL. Moreover, it becomes harder to place legally binding restrictions on LAWS against corporate advocates.

The economic momentum behind autonomous weapons has outpaced the frameworks needed for regulation according to many global affairs groups. Private

90   Slijper, The Arms Industry and Increasingly Autonomous Weapons.
91   "Top 100 | Defense News, News About Defense Programs, Business, and Technology," Defense News, 2024, https://people.defensenews.com/top-100/.
92   "World Military Expenditure Grows to $1.8 Trillion in 2018," SIPRI, April 29, 2019, https://www.sipri.org/media/press-release/2019/world-military-expenditure-grows-18-trillion-2018.
93   Sarah Kreps, "The Global AI Race: Will US Innovation Lead or Lag?," Brookings, December 6, 2024, https://www.brookings.edu/articles/the-global-ai-race-will-us-innovation-lead-or-lag/.
94   Laura Varella, "AWS Diplomacy Report, Vol. 2, No. 1," Reaching Critical Will, May 7, 2025, https://reachingcriticalwill.org/disarmament-fora/ccw/2025/laws/ccwreport/17475-aws-diplomacy-report-vol-2-no-1.
95   "Palantir Defense Solutions," Palantir, accessed July 27, 2025, https://www.palantir.com/offerings/defense/.
96   Heather Somerville and Deepa Seetharaman, "OpenAI Enters Silicon Valley's Hot New Business: War," The Wall Street Journal, (December 4, 2024), https://www.wsj.com/tech/ai/openai-enters-silicon-valleys-hot-new-business-war-7beccf6e.
97   PAX, "Slippery Slope - PAX," December 19, 2024, https://paxforpeace.nl/publications/slippery-slope/.
98   Elisabeth Hoffberger-Pippan, "Taming the Lions: The Role of Industry in the Debate on Autonomous Weapon Systems (AWS)," Opinio Juris, April 18, 2023, https://opiniojuris.org/2023/04/25/taming-the-lions-the-role-of-industry-in-the-debate-on-autonomous-weapon-systems-aws/.

stakeholders often resist norms that could limit their growth.[99] Defense AI startups are attracting vast sums. In 2025, Shield AI and other businesses raised USD 240 million at a valuation of over USD five billion.[100] This strong commitment to relatively new companies signals that many in the private sector see AWS expansion as inevitable.

Even companies focused on traditional arms such as Lockheed Martin are expanding into AWS. They developed the concept of "dialable autonomy" allowing operators the ability to configure autonomy. This can vary from direct control over flight paths to complete autonomous navigation. It can also allow for LAWS to create a mission plan to present to human operators for approval.[101] As impressive as much of the technology, commercialization poses serious concerns. Increasing private development can lead to increased proliferation. The transfer of autonomous systems or the software that supports them to dangerous individuals is increasingly likely in expanding marketplaces.[102] NSAs have used commercial drones with artificial intelligence capabilities for military purposes in a number

of conflicts. It is far more difficult to stop the illegal distribution of systems or software once they are in commercial circulation. Dual-purpose AI tools, like tracking software, navigation software, and object identification, are widely available, which further reduces the entrance barrier for developing LAWS.[103]

LAWS are ultimately endemic to an increasingly fragmented global community. States are continuing to expand their militaries in response to these concerns. The UK, Saudi Arabia, the Republic of Korea, Japan, Australia, China, India, the European Union (EU), and many others have declared plans to boost their military expenditures.[104] Global military expenditure reached USD 2.24 trillion in 2024, marking the ninth consecutive year of growth.[105] Increases in military budgets around the world encourage business actors to prioritize defense over humanitarian issues. As their influence grows, IHL's applicability and relevance are called into question. Nowadays, the role of industry in relation to LAWS production seems legally unclear. Although some technologies may be designed for harmless,

uncontroversial uses, it is frequently unclear how businesses make sure their products will not be modified into LAWS.

Sustainable Development Goals (SDGs)

In 2015, the United Nations adopted the 2030 agenda for sustainable development. The agenda aimed to provide a framework to ensure long-term global peace and prosperity, both now and in the future.[106] At its core are the 17 sustainable development goals (SDGs) that serve as a call to action. Following the core objective of the SDG's, the 2030 agenda aims to achieve a "society where no one is left behind."[107] The SDGs acknowledge that to achieve this a clear and comprehensive plan is required. This includes recognizing that education, global peace, poverty reduction, and environmental protection among others are all intertwined.

To address LAWS delegates must examine SDG 16: Peace, Justice and Strong Institutions. Goal 16 is about promoting peaceful and

99 Hoffberger-Pippan, "Taming the Lions: The Role of Industry in the Debate on Autonomous Weapon Systems (AWS)"
100 Heather Somerville and Deepa Seetharaman, "OpenAI Enters Silicon Valley's Hot New Business: War," *The Wall Street Journal*, (December 4, 2024), https://www.wsj.com/tech/ai/openai-enters-silicon-valleys-hot-new-business-war-7beccf6e.
101 PAX, "Slippery Slope - PAX," December 19, 2024, https://paxforpeace.nl/publications/slippery-slope/.
102 Elisabeth Hoffberger-Pippan, "Taming the Lions: The Role of Industry in the Debate on Autonomous Weapon Systems (AWS)," *Opinio Juris*, April 18, 2023, https://opiniojuris.org/2023/04/25/taming-the-lions-the-role-of-industry-in-the-debate-on-autonomous-weapon-systems-aws/.
103 Hoffberger-Pippan, "Taming the Lions: The Role of Industry in the Debate on Autonomous Weapon Systems (AWS)"
104 The International Team for the Study of Security Verona, "Artificial Intelligence, Cyber Security & Space – ITSS Verona," ITSS Verona, August 4, 2022, https://www.itssverona.it/research-areas/aritificial-intelligence-cyber-security-space.
105 "Unmanned Military Case Study-Have Raider Demo," Lockheed Martin, accessed July 25, 2025, https://www.lockheedmartin.com/en-us/capabilities/autonomous-unmanned-systems/unmanned-military-case-study-have-raider-demo.html.
106 "THE 17 GOALS | Sustainable Development," United Nations Department of Economic and Social Affairs, accessed July 25, 2025, https://sdgs.un.org/goals.
107 United Nations Sustainable Development Group, "Leave No One Behind," accessed July 26, 2025, https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind.

inclusive societies, providing access to justice for all. This is achieved by building fair and accessible institutions for all. SDG 16 also states that all people should be free of fear from all sorts of violence and live in peace.[108] In 2022, there was a 50 percent increase in conflict related civilian deaths compared to the year before. This was largely due to the war in Ukraine and other conflicts.[109] In 2024, loss of lives amid armed conflicts surged 40 percent from 2023, marking the third consecutive annual rise.[110]

That's why, SDG Target 16.1: Reduce all forms of violence and related death rates everywhere, is deeply related to this topic and committee. There is a clear and persistent growth in global conflict. This alongside increasingly destructive conflicts spurred on by LAWS. This target aims for the decrease of all kinds of violence and persecution globally.[111] LAWS, by design, have the potential to engage in violent action without direct human participation. They threaten reducing global peace efforts and hinder accountability preventing proper justice for any misuse. This undermines the current legal frameworks that exist. While supporters say that these systems can increase target precision and

therefore reduce casualties, data has highlighted serious concerns about misidentification and the loss of moral judgment in decision-making moments. This increases the frequency of violence and the possibility of civilian casualties.

Target 16.4: Combat Organized Crime and Illicit Financial and Arms Flows is also closely related. The goal is to reduce illegal financial and armaments flows dramatically by 2030, improve the recovery and return of stolen property, and fight organized crime in all its manifestations.[112] The proliferation of semi-AWS and dual-use AI technologies further complicates this. Their proliferation may enable criminal actors to become increasingly destructive and difficult to manage. As seen before, commercial software and hardware can be altered for deadly purposes with relative ease. This makes it ideal for numerous NSAs to use them for illicit purposes. In wars like Ukraine, where both sides have weaponized modified consumer drones with AI-enhanced features, this proliferation is already happening.

Without strong export regulations and international agreements tailored to LAWS, the risk of unchecked technological spread

keeps increasing. Major concerns are also raised by the corporate sector's role in LAWS. That's why Target 16.6: Develop Effective Accountable and Transparent Institutions is related as well. This target aims for transparent, responsible, and effective institutions at all levels.[113] AWS initiatives are often created by tech businesses or private defense firms with no public control. Projects or partnerships with firms like Anduril and Palantir, have urged the US to show corporate transparency and ethical responsibility. Unlike states, most of these corporations are not subject to international humanitarian law, but they frequently have more advanced technological knowledge and therefore control over the design of war through their weapons.

108 "Peace, Justice and Strong Institutions - United Nations Sustainable Development," United Nations Sustainable Development, July 30, 2025, https://www.un.org/sustainabledevelopment/peace-justice/.
109 United Nations Statistics Division, "Peace, Justice and Strong Institutions," *UN Stats*, accessed July 28, 2025, https://unstats.un.org/sdgs/report/2023/goal-16/.
110 "Peace, Justice and Strong Institutions - United Nations Sustainable Development." United Nations
111 "SDG Target 16.1 Violence," World Health Organization, March 25, 2024, https://www.who.int/data/gho/data/themes/topics/sdg-target-16_1-violence.
112 "SDG 16.4: Combat Organized Crime and Illicit Financial and Arms Flows | ICCROM ," *International Centre for the Study of the Preservation and Restoration of Cultural Property,* accessed July 28, 2025, https://ocm.iccrom.org/sdgs/sdg-16-peace-justice-and-strong-institutions/sdg-164-combat-organized-crime-and-illicit.
113 "SDG 16.6: Develop Effective Accountable and Transparent Institutions | ICCROM |," *International Centre for the Study of the Preservation and Restoration of Cultural Property.*, accessed July 28, 2025, https://ocm.iccrom.org/sdgs/sdg-16-peace-justice-and-strong-institutions/sdg-166-develop-effective-accountable-and.

BLOC ANALYSIS

Point of Division

In recent years, military technology has advanced quickly, challenging established norms. The application of IHL to these new domains is an area of significant debate. This has given rise to countries adopting different policies according to their national interests. The bloc's differences regarding LAWS rely on a number of key factors including their own militaries, current investment in LAWS, and more. How each state views their own neighbors' advances is also critical. Oftentimes, fear of an opponent's superiority is a strong motivator for how a state views LAWS. While some countries are actively developing and deploying these technologies, others want strict regulations or total. Those who are developing LAWS often argue against further regulation viewing LAWS as crucial tools. While their critics often cite concerns for human dignity and IHL as their chief concerns, others are afraid of being used as test areas in conflicts involving AWS. Each country's position in the global debate on LAWS can be clearly understood due to the division into four distinct blocs. These blocs will help delegates recognize their country's position and negotiate appropriately in committee debates.

Military Powers Advancing LAWS

Military power refers to the strength and capabilities of a country's armed forces, such as its size, training, and equipment. Within the current global framework, military power remains a critical tool for diplomacy. This military strength can often deter or end conflicts, especially with rogue actors. Thus, maintaining a technologically advanced military is important for many states. Countries within this bloc are recognized military powers with strong defense industries. Moreover, they are actively investing in the development and deployment of LAWS. These states believe that LAWS are essential to maintaining a technological advantage in current conflicts. They also consider that LAWS improves operational efficiency, lowering the risk to human soldiers, and overall military efficiency.[114] Moreover, these countries support non-binding standards and emphasize the significance of national sovereignty in the regulation of LAWS. However, they tend to downplay them or view them as secondary to the independence of their armed forces. In international forums such as the Convention on Certain Conventional Weapons (CCW), they frequently prevent or weaken treaty initiatives. Their position stems from the logic of deterrence and strategic rivalry. They contend that they must keep up with the deployment of LAWS as they can see their rivals doing similar. Many countries including China, Israel, Russia, South Korea, Türkiye, the United Kingdom, and the United States are reported to be investing in autonomous weapons.[115] Countries within this bloc can be seen as responsible leaders by pushing for transparency, accountability, and operational measures. However, these initiatives will often be limited or include clauses which prevent any complete bans.

Countries Advocating for Some Regulation and Frameworks

This bloc includes countries that support international regulations of LAWS but are not necessarily a complete ban. They recognize the benefits of technology in defense and some have advanced militaries. Furthermore, these are often middle powers who often advocate for compromise in them to reach a diplomatic solution. This approach is emphasized due to their belief that a poor agreement is a better

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114 Qerim Qerimi, "Controlling Lethal Autonomous Weapons Systems: A Typology of the Position of States," *Science Direct*, September 2023, https://www.sciencedirect.com/science/article/pii/S026736492300064X?fr=RR-2&ref=pdf_download&rr=962de5c3baccd0ca.
115 Tejas Bharadwaj and Charukeshi Bhatt, "Understanding the Global Debate on Lethal Autonomous Weapons Systems: an Indian Perspective," Carnegie Endowment for International Peace, August 30, 2024, https://carnegieendowment.org/research/2024/08/understanding-the-global-debate-on-lethal-autonomous-weapons-systems-an-indian-perspective?lang=en.

alternative than zero consensus. Aiming to both reinforce IHL while recognizing the potential strategic advantages of LAWS. Moreover, they emphasize the need for an international definition of LAWS and technical standards to ensure that autonomy does not cause unintended harm. They also value international definitions to help reinforce current gaps in IHL.[116] What sets them apart is their idea that calling for a complete ban is unlikely to gain appeal among major powers. Instead, they aim to shape the future of LAWS use through preemptive regulation while maintaining flexibility. For instance, they also have called for a "dualist" approach to balance moral considerations with practical realities. It aims to regulate some LAWS usage while outlawing others. LAWS can target material military assets, such as attack machines, vehicles, or installations. However, the focus is on those that specifically target humans and involve unpredictable systems. This approach mostly divides weapon systems into those that can be commanded by humans and those that cannot. This is sometimes referred to as a "two-tier approach" and seems to have broad support across several states, like Canada, the Netherlands, South Korea, Australia, France, Germany, and

Luxembourg.[117] The bloc is urged to work towards internationally recognized operational standards that uphold meaningful human control and provide a better framework.

Countries Advocating for a Complete Ban

This bloc includes countries that oppose the development of LAWS and call for a preemptive global ban. Banning LAWS means prohibiting weapons systems that lack MHC. Since 2013, 30 countries have called for a ban on LAWS.[118] This ban is largely due to ethical concerns and the desire for human oversight of the use of force. Serbia and Kiribati are examples of prohibitionist states that support a legally binding instrument that would completely ban LAWS. The need for MHC is always emphasized as the most important safeguard by these countries.[119] Among the states that make up this bloc are Austria, Mexico, Brazil, Chile, Costa Rica, and Pakistan. These countries have frequently requested a legally binding document that forbids LAWS in working papers they have submitted to the CCW. Their worries stem from concerns related to IHL and how LAWS may undermine

these principles. In fact, a General Assembly resolution on LAWS passed in December 2024, with 166 votes in favor, three against (Russia, North Korea, and Belarus), and 15 abstentions. Most of these countries have been influenced by NGOs such as Human Rights Watch and the Campaign to Stop Killer Robots, which have framed the discussion around morality.[120] There are also many states that fear the consequences of rogue LAWS. These countries frequently support international agreements that prohibit chemical or biological weapons as well. However, this group is largely composed of countries who lack the capacity for the production of LAWS making them more vulnerable to them and also less likely to gain from their development.

Countries Affected by LAWS

This bloc includes countries that do not have the resources or technology to develop LAWS. However, they are unique because they are currently affected by the potential or current deployment of LAWS against them. These states can have little recourse against the use of these technologies. Many of their concerns stem from civilian

116   Taylor Jones, "The Political Landscape: How Nations Are Responding to Autonomous Weapons in War - Autonomous Weapons Systems," Autonomous Weapons Systems, May 13, 2025, https://autonomousweapons.org/global-perspectives-on-regulation/.
117   Cody Vance, Benjamin Perrin, and Masoud Zamani, "The Future of Warfare: National Positions on the Governance of Lethal Autonomous Weapons Systems," *Lieber Institute West Point*, February 11, 2025, https://lieber.westpoint.edu/future-warfare-national-positions-governance-lethal-autonomous-weapons-systems/.
118   Mary Wareham, "Stopping Killer Robots," *Human Rights Watch*, March 28, 2023, https://www.hrw.org/report/2020/08/10/stopping-killer-robots/country-positions-banning-fully-autonomous-weapons-and.
119   Vance, Perrin, and Zamani, "The Future of Warfare: National Positions on the Governance of Lethal Autonomous Weapons Systems."
120   "UN: Start Talks on Treaty to Ban 'Killer Robots,'" *Human Rights Watch*, May 23, 2025, https://www.hrw.org/news/2025/05/21/un-start-talks-treaty-ban-killer-robots.

safety and threats to their own sovereignty.[121] These states also tend to worry about being used as test sites for LAWS or the proliferation of LAWS by NSAs. Nigeria, Yemen, Somalia, Sudan, Afghanistan, and some Pacific Island countries are a few examples. These states frequently draw attention to the ways that technologies like drones deployed in their territory have resulted in abuses of sovereignty and innocent casualties. Current conflicts in Ukraine, Israel, and Libya suggest that weapons with some autonomous capabilities have already been in use. Despite not being in direct danger from LAWS, countries like Mali, the Philippines, and the Democratic Republic of Congo, which have been weakened by conflict, are susceptible to their use as well.

COMMITTEE MISSION

DISEC is the First Committee of the United Nations General Assembly. Therefore, it holds a vital responsibility in maintaining international peace and security. The committee works to encourage disarmament and work to resolve issues that threaten global peace. All issues of global security and disarmament that fall under the UN Charter are discussed here.[122] DISEC lacks the power to negotiate treaties or enforce legally binding resolutions like the Security Council or Conference on Disarmament. Regardless, it remains vital in providing a forum for these discussions to happen. Often, the points presented within DISEC are used as the foundation for binding agreements. For LAWS, where accountability frameworks are mostly lacking and international definitions are still unclear. As governments start to compete for increasingly dangerous LAWS, DISEC needs to serve as a forum for inclusive and progressive discussion. In recent years, this issue has been the subject of intense debates in forums such as the Convention on Conventional Weapons (CCW). To prevent the indiscriminate and potentially hazardous use of LAWS, member states have sought accords to set restrictions and rules. In these attempts, the possibility of establishing a complete restriction or ban on LAWS has also been explored.[123]

DISEC's mandate is a body that sets agendas and makes recommendations. Delegates are encouraged to research and think critically. To do this, they should take into account the current ethical frameworks and principles. Moreover, for delegates to propose solutions, security, and current legal challenges must be addressed. Overall, LAWS are not merely a problem for the future, they are already in use and their influence is rapidly expanding. Because of this, it is not only relevant but also essential that delegates in DISEC propose and discuss creative solutions to this issue.

121   Bharadwaj and Bhatt, "Understanding the Global Debate on Lethal Autonomous Weapons Systems: An Indian Perspective."
122   United Nations, "UN General Assembly - First Committee - Disarmament and International Security," accessed July 30, 2025, https://www.un.org/en/ga/first/.
123   Alejandro Doncel, "Question of: Lethal Autonomous Weapon Systems and Artificial Intelligence in Warfare," *MUN Bilbao*, accessed August 1, 2025, https://mun-bilbao.com/wp-content/uploads/2024/01/DISECLethal-Autonomous-Weapon-SystemAI.pdf

Small Drone Warfare

In recent years, the usage of small drones in warfare has expanded greatly. This has raised questions about the legal, ethical, and moral uses of this technology. Unmanned Aerial Vehicles (UAVs) are a powerful and versatile tool in combat. Low in cost and easy to use, UAVs can conduct many different types of missions. For instance, UAVs are used during wars for spying. This is done through cameras, sensors, and microphones for surveillance and reconnaissance.[1] Other UAVs can be fitted with explosives and act as bomb-dropping machines.[2]

Two recent developments in small drone warfare have had large impacts on UAV applications. First-Person Viewpoint, or FPV UAVs, have changed the way pilots fly and receive information from drones. FPV drones can strike targets with greater accuracy and minimize collateral damage.[3] Secondly, the recent usage of artificial intelligence (AI) in UAVs created UAV systems which can make decisions without human input. These weapons are classified as Lethal Autonomous Weapons Systems (LAWS). LAWS also raises ethical questions on the decision-making abilities of these weapons.

The diverse uses for UAVs have led to many militaries integrating UAV systems into their systems. Conflicts such as the Russia-Ukraine War and the Nagorno-Karabakh border conflict have all been impacted by the increased use of UAVs. As this technology continues to spread its impact on military, humanitarian, and economic sectors grows as well. Thus proper guidelines must be put in place to prevent the misuse of UAVs. Misuse may arise due to the low cost of UAV technology. This has made it extremely accessible for non-state actors (NSAs) such as terrorist organizations. In 2025, the number of countries who experienced terrorist attacks increased from 58 to 66 attacks.[4] As terrorist attacks increase and UAVs become more available, countries must be prepared to prevent and address their use to protect the lives of their citizens.

TOPIC BACKGROUND

History of Small Drone Warfare

Throughout history, armed conflict and the threat of war has informed the bulk of foreign policy decisions. As a result, the technology used in warfare continues to evolve into more intelligent and powerful weapons. UAVs were first developed by Allied forces during World War I. While pilot tests were successful, these technologies were never deployed in combat.[5] It was not until the Vietnam War that UAVs were added into military operations at a large scale. During this time, the United States began utilizing remotely piloted aircraft for reconnaissance.[6] American forces fitted UAVs with cameras and flew them over China and North Vietnam to gather intelligence while preserving the lives of pilots and airmen.[7] Furthermore, the United States used UAVs as decoys to confuse opponents, launch weapons, and distribute propaganda. While UAVs provided some assistance, they were also prone to a variety of problems. Limitations such as its high cost and

1 Oleksandra Molloy, "How Are Drones Changing Modern Warfare?," Australian Army Research Center, August 1, 2024, https://researchcentre.army.gov.au/library/land-power-forum/how-are-drones-changing-modern-warfare.
2 Deveraux, "Loitering Munitions in Ukraine and Beyond".
3 Crowley, "The Role of FPV Drones in Tactical Military Applications".
4 "Global Terrorism Index 2025," Institute for Economics and Peace, March 2025, https://reliefweb.int/report/world/global-terrorism-index-2025.
5 "A Brief History of Drones," Imperial War Museums, https://www.iwm.org.uk/history/a-brief-history-of-drones
6 "History of Drone Warfare," Bureau of Investigative Journalism, https://www.thebureauinvestigates.com/explainers/history-of-drone-warfare.
7 "History of Drone Warfare".

unreliability made UAVs appear to be a waste of time and resources.[8] As a result, many militaries chose not to invest in UAV technology.

However, conflict in the Middle East changed this perspective completely. On October 6, 1973, Egypt and Syria joined forces to invade Israel on two fronts in the Yom Kippur War. The effort caught Israeli forces by surprise. As a result, Israel sustained costly casualties and equipment losses.[9] The war ended on October 26, and eventually ceasefire agreements were reached with Egypt in November, and Syria in May of 1974. During the war, Israel's air forces sustained major losses and were unprepared for missile attacks.[10] This encouraged the Israeli Aircraft Industries (IAI) to change its air force strategy and invest heavily in UAV technology. In 1978, the IAI introduced its first UAV: Scout. Mounted with a 360-degree camera, Scout provided real-time visual surveillance to the Israeli military.[11] Furthermore, its four-meter wingspan and fiberglass body made it extremely difficult to shoot down due to its small size and low radar signature.[12]

The IAI's innovation in UAV technologies proved its worth at the beginning of the 1982 Lebanon War. On June 9, 1982, the Israeli government launched an incursion into Southern Lebanon. This attack aimed to destroy Syrian surface-to-air missile batteries that were being stored in Lebanon's Bekaa Valley.[13] During the attack, a fleet of Israeli Scout vehicles flew above Syrian surface-to-air missiles to trigger their radar functions. Once activated, the UAVs sent the data to another Scout, which transmitted the information to electronic countermeasure aircraft.[14] With this information, planes were able to track the location of the batteries and destroy them using.[15] Using this strategy, Israeli forces were able to hit 15 out of 19 anti-aircraft systems in 110 minutes while sustaining minimal damage.[16] The success of the Scout UAV caused many other countries to restructure their aircraft technology, expanding small drone production. Some of the earliest investors include the United States, France, Germany, and Canada.[17]

In 1999, many of these early adopters worked together as a part of the North Atlantic Treaty Organization (NATO) to bombard Yugoslavia for 78 days during the Kosovo War.[18] These UAVs gathered information to determine Yugoslavian defense strategies.[19] The information was used to plan paths for missile strikes.[20] UAVs largely successful in their role during the Kosovo war solidified their use in modern militaries. Since the Kosovo War, UAVs have been deployed in countless conflicts. A notable example is the United States's use of UAVs in Afghanistan. During the conflict in Afghanistan, the United States launched 1,400 weapons from UAVs in a five-year period.[21] These UAVs provided intelligence for American military forces and delivered explosives from afar. However, the United States's usage of UAVs in Afghanistan has been widely criticized for the large number of civilian casualties. This

8　"History of Drone Warfare".
9　The Editors of Encyclopaedia Britannica, "Yom Kippur War," *Encyclopaedia Britannica,* May 14, 2025, https://www.britannica.com/event/Arab-Israeli-wars.
10　S. Tsach, J. Chemla, et al., "History of UAV Development in IAI and Beyond," *International Congress on the Aeronautical Sciences,* (2004), https://www.icas.org/icas_archive/ICAS2004/PAPERS/519.PDF.
11　"Scout: Israel," NOVA, https://www.pbs.org/wgbh/nova/spiesfly/uavs_13.html.
12　NOVA"Scout: Israel".
13　Uri Milstein, "Operation Mole Cricket 19: 34 years later, the IAF's most decisive victory remains the standard," *Jerusalem Post,* July 18, 2016, https://www.jpost.com/magazine/operation-mole-cricket-19-456909.
14　"Bekaa Valley Turkey Shoot," *Sierra Hotel Aeronautics,* June 9, 2024, https://sierrahotel.net/blogs/news/bekaa-valley-turkey-shoot?srsltid=AfmBOoqMOuAh7qSlLR-GjbcYE-3-pVrvD1Pi_GIC7DnltwO8a0qxKN_K.
15　Haim Yogev, Ronen A. Cohen, et al., "Revolution in military affairs - The operation mole cricket 19 as a case study for the technological race during the cold war," *International Area Studies Review,* Volume 25 (2022), https://journals.sagepub.com/doi/pdf/10.1177/22338659221075806.
16　"Mole Cricket 19: The greatest aerial battle in 50 years," *NemesisHD,* February 8, 2023, https://nemesishd.com/mole-cricket-19-syria-israel-air-force-battle/.
17　Grady Bolding, "The First Drone War," Medium, April 19, 2023, https://medium.com/lessons-from-history/the-first-drone-war-f5957838370b.
18　Bolding, "The First Drone War".
19　Bolding, "The First Drone War".
20　Bolding, "The First Drone War".
21　"Written Evidence from Drone Wars UK," Parliament UK, January 2, 2014, https://publications.parliament.uk/pa/cm201314/cmselect/cmdfence/197/197vw06.htm.

calls into question the accuracy of the drone strikes, as some sources claim they caused over 1,000 civilian deaths.[22]

Today, over 90 countries and NSAs have access to militarized UAVs.[23] UAVs have become integral to air force capabilities and play crucial roles in every ongoing conflict in the world. Additionally, emerging technologies for UAVs are constantly improving their abilities. While some guidelines have been agreed to, no binding resolution on UAV technology has been reached. Thus, UAVs and their deployment remain the decision of each individual actor with little oversight from the international community.

Loitering munition (Credit: Armyinform)

Autonomous UAVs

The increasing use of AI has led to many new possibilities. One way AI has impacted military operations is its usage in UAVs. UAVs with AI can operate on their own. This means they can find and attack targets without human control. This poses a large and important ethical question for states to consider.

The development of AI weapons began in the United States in the late 1980s. The US created two early AI missiles: the Tomahawk and the Harpoon. The Tomahawk cruise missile is a long-range, subsonic cruise missile launched from ships and submarines, designed for precision land-attack missions using advanced guidance systems like GPS. It was able to target Soviet ships without human involvement. It was retired shortly after the signing of a Russian arms treaty as an arms reduction effort and a policy shift away from deploying nuclear cruise missiles at sea.[24] On the other hand, the Harpoon anti-ship missile is able to identify and guide itself to enemy vessels, and is still in use by the US Navy.[25]

Military advancements in AI have since expanded. The United States is currently using AI UAVs to track and hit mobile targets in challenging environments.[26] In the Collaborative Operations in Denied Environments (CODE) program, UAVs work together to gather data and recommend actions which are approved or denied by a single supervisor.[27] This allows the UAVs to, "improvise and adjust as they pursue their preset mission" so that they can hunt their targets more efficiently than humans.[28] CODE is specifically designed for operating in environments with contested

22 Jeffry A Sluka, "Death From Above," Military Review, April 2013, https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20130430_art013.pdf.
23 "Global Perspectives –Proliferated Drones," Center for a New American Security, https://drones.cnas.org/reports/global-perspectives/.
24 John Markoff, "Fearing Bombs That Can Pick Whom to Kill," New York Times, November 11, 2014, https://www.nytimes.com/2014/11/12/science/weapons-directed-by-robots-not-humans-raise-ethical-questions.html?module=inline.
25 Markoff, ""Fearing Bombs That Can Pick Whom to Kill".
26 "CODE: Collaborative Operations in Denied Environment," Defense Advanced Research Projects Agency, https://www.darpa.mil/research/programs/collaborative-operations-in-denied-environment.
27 "CODE: Collaborative Operations in Denied Environment".
28 Kelsey D. Atherton, "Are Killer Robots the Future of War? Parsing the Facts on Autonomous Weapons," New York Times, November 15, 2018, https://www.nytimes.com/2018/11/15/magazine/autonomous-robots-weapons.html.

electromagnetic spectrums. These are areas where the electromagnetic field is disrupted on purpose. Doing this can limit communication on radios, GPS systems, and cell phones.[29] By using this technology, AI UAVs could bypass these defensive systems. For many militaries, this development shows just how valuable AI tools will continue to be in the near future.

UAVs are not limited to being used as simple fighter drones. For example, loitering munitions are UAVs with attached explosives that can fly independently until they are signaled to crash into their targets.[30] This AI development means that human operators are not needed for these missions. This allows the drones to operate without supervision for hours, even days on end. They receive their name, and conduct independent flights they perform in the "loitering area" before they identify and strike their targets.[31] One example of a loitering munition is the Harpy. Developed by IAI, the Harpy can fly for up to nine hours in a 200 kilometer range.[32] This UAV is

pre-programmed with a radiated signature. So, when detected, it will trigger the Harpy to dive into the target and destroy it.[33] These functions give the Harpy high accuracy, making it a valuable weapons system. The Harpy is currently being used by the law enforcement and militaries of Israel, Azerbaijan, India, China, Taiwan, Türkiye, Chile, and the Republic of Korea.[34]

To accomplish these feats UAVs employ a number of programs. The most important software is computer vision algorithms. These algorithms train AI models on databases of images and videos so UAVs can interpret data gathered from cameras.[35] This process is essential for UAV autonomy because it trains the machines to recognize objects and people. When used in military operations, computer vision algorithms must be extremely detailed so that UAVs can tell civilians apart from real threats. UAVs also use vision algorithms to perform many other tasks. Threat assessment software allows military UAVs to assess risks in conflict

zones. When UAVs detect changes in patterns in behavior, they can act on them by alerting security officials or following specific protocols.[36] When used for this purpose, UAVs can help maintain the safety of soldiers by reducing potential danger in conflict territories.

Additionally, artificial intelligence has begun outperforming humans in many current military tasks.[37] Researchers recently ran a study to see if humans could beat AI when determining whether ships were in open waters or United States's territory.[38] They found that when both groups were given limited information, the humans tended to overestimate their abilities, leading to wrong answers.[39] The AI, however, lowered its confidence in its answers, leading to more accurate results.[40]

Another way AI can outperform humans in military operations is persistent surveillance, which is the ability to cover large areas and maintain uninterrupted surveillance for extended periods.[41] UAVs cover more ground area than ever possible

29 C. Todd Lopez, "As in Other Domains, US's Use of Electromagnetic Spectrum is Contested," *US Department of Defense,* May 20, 2020, https://www.defense.gov/News/News-Stories/Article/Article/2193532/as-in-other-domains-us-use-of-electromagnetic-spectrum-is-contested/.
30 Michael K. Lima, "Munitions Modernization: The Family of Drone Munitions," *US Army,* October 17, 2024, https://www.army.mil/article/280364/munitions_modernization_the_family_of_drone_munitions.
31 "Israel Aerospace Systems HARPY Loitering Munition," *Automated Decision Research,* https://automatedresearch.org/weapon/israel-aerospace-systems-harpy-loitering-munition/.
32 Automated Decision Research, "Israel Aerospace Systems HARPY Loitering Munition".
33 Automated Decision Research, "Israel Aerospace Systems HARPY Loitering Munition".
34 Vladimir Shcherbakov, "The Deadly 'Harpy' and its Relatives," *VPK News,* April 17, 2023, https://vpk.name/en/707377_the-deadly-harpy-and-its-relatives.html.
35 Shweta Surender, "AI in Military Drones: Game Changing Capabilities," *Markets and Markets,* September 24, 2024, https://www.marketsandmarkets.com/blog/AD/ai-in-military-drones-game-changing-capabilities.
36 Fadhila Tlili, Samiha Ayed, et al., "Advancing UAV security with artificial intelligence: A comprehensive survey of techniques and future directions," *Science Direct,* Volume 27 (2024), https://www.sciencedirect.com/science/article/abs/pii/S2542660524002221#preview-section-snippets.
37 Patrick Tucker, "Artificial Intelligence Outperforms Human Intel Analysts In a Key Area," *Defense One,* April 29, 2020, https://www.defenseone.com/technology/2020/04/artificial-intelligence-outperforms-human-intel-analysts-one-key-area/165022/.
38 Patrick Tucker, ""Artificial Intelligence Outperforms Human Intel Analysts In a Key Area".
39 Patrick Tucker, ""Artificial Intelligence Outperforms Human Intel Analysts In a Key Area".
40 Patrick Tucker, ""Artificial Intelligence Outperforms Human Intel Analysts In a Key Area".
41 Surender, "AI in Military Drones: Game Changing Capabilities".

by humans. UAVs are also able to communicate information faster to both each other and to ground control stations.[42] This can reduce the workload and risks to military personnel.

Because of these technological advancements, UAVs may be able to fully replace humans in these tasks in the future. But a more likely solution is that UAVs learn to work alongside operators to perform these functions. UAVs can transmit information in real time to ground control stations. This allows humans to make decisions based on the data presented.[43] While artificial intelligence can improve these technologies, increasing AI in military UAVs ultimately results in less human input in these technologies. Military projects like CODE and the Harpy allow for military operations to be more flexible and cost-effective. However, letting UAVs make decisions independently raises concerns about the safety and ethicality of these weapons.

UAVs for Intelligence, Surveillance, Reconnaissance and Tactical Strikes

In conflict zones, UAVs are most commonly used for two purposes: gathering intel and

Orlan-10 UAV (Credit: Ministry of Defence of the Russian Federation)

carrying out tactical strikes. Using UAVs to perform these functions can improve military operations by completing tasks at faster rates, lower costs, and with minimized risks. One of the most important uses of UAVs in warfare is to complete the process of Intelligence, Surveillance, and Reconnaissance (ISR). In the ISR process, surveillance and reconnaissance are used to collect information for intelligence.[44] NATO defines surveillance as, "the persistent monitoring of a target."[45] This takes place over long periods of continuous observation. On the other hand, reconnaissance involves gathering specific information over

a short period of time to answer a fixed military question.[46] Since surveillance involves large data sets, the information collected can become outdated or contradictory. Thus, reconnaissance missions can be used to retrieve up to date data and confirm or deny previous information.[47] Lastly, intelligence is formed by combining surveillance and reconnaissance. It is defined as the gathering and interpreting of this information for decision-making.[48] Intelligence is crucial to military operations because it allows for missions to be planned or altered to avoid dangerous outcomes.

42 Surender, "AI in Military Drones: Game Changing Capabilities".
43 Surender, "AI in Military Drones: Game Changing Capabilities".
44 "How Is Reconnaissance Different Than Intel Or Surveillance?," Greenwood Aerospace, December 23, 2023, https://www.governmentprocurement.com/news/how-is-reconnaissance-different-than-intel-or-surveillance.
45 "Joint Intelligence, Surveillance, and Reconnaissance," NATO, June 19, 2025, https://www.nato.int/cps/en/natohq/topics_111830.htm.
46 NATO, "Joint Intelligence, Surveillance, and Reconnaissance".
47 Greenwood Aerospace, "How Is Reconnaissance Different Than Intel Or Surveillance?".
48 "Decoding Military Surveillance Drones: The Ultimate Guide," Elistair, https://elistair.com/military-surveillance-drones/.

Small UAVs have made serious improvements to the ISR process. In particular, FPVs have revolutionized this process. FPV drones are a type of UAV that let the pilot see visuals as if they were on-board the vehicle.[49] This is different from traditional "bird's eye view" or overhead shots, and gives pilots greater situational awareness and accuracy.[50] FPV drones are also cheap to purchase, ranging from USD 200 to USD 1,000.[51] The low cost makes FPV drones widely available to militaries, and allows for large quantities of FPV drones to be purchased and used at a time. The cameras used for imaging and radio frequency identification give UAVs advanced environmental awareness in these conflict zones.[52] This allows them to track enemy positions, intercept communications, and adapt to changing environments while providing live feedback to human operators.[53] Additionally, the small size and quiet nature of UAVs make them difficult for enemies to locate and track, providing better intelligence.[54]

The Orlan-10 is one example of an intelligence-gathering UAV. It is a medium range UAV developed and released by the Russian Federation in 2011 for surveillance and reconnaissance.[55] Armed with a variety of sensors and cameras, it is commonly deployed in border areas for spying missions.[56] Alongside the Russian Federation, it is currently deployed in the militaries of Armenia, Kazakhstan, and Uzbekistan.[57] However, the most notable use of the Orlan-10 is for military operations in Ukraine. These UAVs can trace the locations of Ukrainian troops, allowing Russian forces to respond just three minutes after each sighting.[58] Without the Orlan-10, the response time could take up to twenty minutes, significantly delaying the impact of the attack.[59]

Another example of an intelligence-gathering UAV is the Black Hornet Drone. The Black Hornet was developed by a private Norwegian company in 2016 and has won awards for its surveillance capabilities.[60] Weighing 1.16 ounces, it has a flight time of twenty-five minutes and can provide high resolution thermal and visual imaging. It is also extremely quiet, able to operate 10 feet away from a person without being heard.[61] It highlights how quickly UAV technology continues to develop and how countries value these tools. Some countries currently using the Black Hornet include Australia, France, Germany, Norway, the United States, and the United Kingdom.[62] This widespread use of the Black Hornet also demonstrates the universal appeal of UAVs for modern military operations.

UAVs are being deployed for tactical strikes and combat missions. The two main methods of this are either by loitering munitions, or drone-dropping munitions. Loitering munitions are UAVs designed to crash into their targets in a kamikaze fashion

49 Mariano Zafra, Max Hunder, et al., "How Drone Combat in Ukraine is Changing Warfare," Reuters, March 25, 2024, https://www.reuters.com/graphics/UKRAINE-CRISIS/DRONES/dwpkeyjwkpm/.
50 Taylor Crowley, "The Role of FPV Drones in Tactical Military Applications," NSIN, last updated April 17, 2025, https://www.nsin.us/fpv-drone-military/.
51 Gregory C Allen et al., "The Russia-Ukraine Drone War: Innovation on the Front Lines and Beyond," Center for Strategic and International Studies, May 28, 2025, https://www.csis.org/analysis/russia-ukraine-drone-war-innovation-frontlines-and-beyond.
52 Elistair, "Decoding Military Surveillance Drones: The Ultimate Guide".
53 Taylor Crowley, "The Role of FPV Drones in Tactical Military Applications".
54 Taylor Crowley, "The Role of FPV Drones in Tactical Military Applications".
55 "The Orlan-10 Uncrewed Aerial Vehicle," Airforce Technology, March 24, 2023, https://www.airforce-technology.com/projects/orlan-10-unmanned-aerial-vehicle-uav/?cf-view.
56 "NATO Raises Security Level to Protect AWACS Against Potential Threat from Russian Orlan-10 Drones," Global Defense News Army Recognition Group, August 26, 2024, https://armyrecognition.com/news/aerospace-news/2024/nato-raises-security-level-to-protect-awacs-against-potential-threat-from-russian-orlan-10-drones.
57 Airforce Technology "The Orlan-10 Uncrewed Aerial Vehicle".
58 Sakshi Tiwari, "Delivery Of Russia's Deadly Orlan-10 & Orlan-30 UAVs Have Increased By A Whopping 53 Times Since SMO: RuMoD," Eurasian Times, July 12, 2023, https://www.eurasiantimes.com/deliveries-of-russias-deadly-orlan-10-orlan-30-drones/.
59 Tiwari "Delivery Of Russia's Deadly Orlan-10 & Orlan-30 UAVs Have Increased By A Whopping 53 Times Since SMO: RuMoD".
60 Michael Ouellette, "The Incredible Engineering of the Black Hornet Nano Drone," Engineering.com, July 24, 2023, https://www.engineering.com/the-incredible-engineering-of-the-black-hornet-nano-drone/.
61 Ouellette,"The Incredible Engineering of the Black Hornet Nano Drone" .
62 Ouellette,"The Incredible Engineering of the Black Hornet Nano Drone".

to destroy them.[63] They can be operated by human controllers or use AI to act autonomously. While small UAVs are relatively inexpensive, loitering munitions can only be used once, but offer a precise method of attack. Drone-dropping munitions can be used more than once. Drone-dropping munitions deliver explosives such as grenades or Molotov cocktails by dropping them onto the target.[64] However, the cost-effectiveness of loitering munitions makes them an optimal weapon in asymmetric warfare. Asymmetric warfare refers to conflict that occurs between a clearly stronger military and an inferior force.[65] This inequality forces the weaker party to use unconventional war strategies because they cannot use the same attack style as the stronger party.[66] While not quite as precise as loitering munitions, drone-dropping still allows for explosives deliveries that can significantly damage opposing forces.

Tactical UAVs have been deployed in a number of conflicts in recent years. For example, the 2020 Nagorno-Karabakh War. While both Azerbaijan and Armenia used UAVs in their militaries, Azerbaijan's advanced weapons systems outmatched those of Armenia. Azerbaijan used a combination of loitering munitions and long range UAVs to destroy 40 percent of Armenia's artillery and almost half of its air force in the early days of the conflict.[67] Armenian forces were unable to recover from damages inflicted by the UAVs, ultimately leading to its defeat in the conflict.

Drones have also been deployed by Houthi forces in Yemen. It is reported that the Houthi forces have eight types of UAVs, four for surveillance, and four which are weaponized.[68] The Qasef-1

> The widespread adoption of UAVs for military endeavors poses a serious threat to international security and stability.

is a loitering munition that has been in use by the Houthis since 2016.[69] On January 10, 2019, the Houthis triggered a Qasef-1 explosion above a Yemeni air base during a parade, killing six.[70] These attacks are unpredictable and dangerous, posing a threat to both military personnel and civilians. Additionally, their continued use by NSAs may create difficulties for regulating them fully.

The rise of UAVs in modern warfare demonstrates both their effectiveness and their risks. While they have revolutionized intelligence gathering and tactical strikes by making operations faster, cheaper, and more precise, their widespread use raises serious concerns. Drones are increasingly being used not only by powerful militaries but also by non-state actors, rebel groups, and insurgents. This makes conflicts more unpredictable and harder to control. Because UAVs are relatively cheap, easy to operate, and hard to detect, they can give smaller groups a dangerous advantage, fueling asymmetric warfare. Their use in attacks against military forces and even civilians shows how drone warfare blurs the line of legality. As these technologies continue to spread, the lack of global regulation increases the risk of destabilization, prolonged conflicts and humanitarian crises. Ultimately, while UAVs provide military advantages, their rapid and unregulated adoption poses a growing threat to international peace and security.

63 Brennan Deveraux, "Loitering Munitions in Ukraine and Beyond," War on the Rocks, April 22, 2022, https://warontherocks.com/2022/04/loitering-munitions-in-ukraine-and-beyond/.
64 Michael K. Lima, "Munitions Modernization: The Family of Drone Munitions".
65 "Asymmetrical Warfare," Britannica Encyclopaedia, https://www.britannica.com/topic/asymmetrical-warfare
66 Britannica Encyclopaedia "Asymmetrical Warfare" .
67 Amit Dogra, "From Surveillance to Supremacy: Drones in Contemporary Conflicts," Modern Diplomacy, June 15, 2025, https://moderndiplomacy.eu/2025/06/15/from-surveillance-to-supremacy-drones-in-contemporary-conflicts/.
68 "Evolution of UAVs employed by Houthi forces in Yemen," Conflict Armament Research, 2020, https://storymaps.arcgis.com/stories/46283842630243379f0504ece90a821f.
69 "Qasef-1," OE Data Integration Network, last modified April 8, 2025, https://odin.tradoc.army.mil/WEG/Asset/b99cad2fd974a48bfdc5f164eed31cad.
70 Conflict Armament Research, "Evolution of UAVs employed by Houthi forces in Yemen".

Using UAVs for Humanitarian Purposes

UAVs are often linked to military use and surveillance. However, these same technologies are now being applied in humanitarian and medical fields to save lives and improve access to care. From delivering urgent medicine in remote villages to helping doctors quickly test for diseases like HIV. UAVs are proving to be more than just tools of war. Their ability to travel quickly, cover difficult terrain, and gather information makes them an important resource for humanitarian work worldwide.

One way UAVs can be used for humanitarian efforts is through improving access to healthcare. For example, giving access to fast and reliable medical testing. Its deployment in combatting human immunodeficiency virus (HIV) testing is one example of this. HIV is a virus that destroys immune cells in infected individuals.[71]

If left untreated, HIV will destroy the immune system until the patient develops acquired immunodeficiency syndrome (AIDS).[72] With AIDS, patients are prone to infections that can cause severe damage due to their compromised immunity.[73] Without treatment, AIDs patients have a life expectancy of only about three years.[74]

One of the countries most affected by HIV is Malawi. Malawi has one of the highest rates of HIV in the world.[75] A 2022 study found that 7.1 percent of adults in Malawi are HIV positive, with 16,000 new infections occurring that year.[76] One way HIV is transmitted is from mother to baby, meaning infants could be exposed during birth.[77] Additionally, infants have weakened immune systems, which means early HIV diagnoses can be life-saving.[78] However, Malawi's lack of infrastructure can cause HIV test results to take up to eight weeks to return.[79] The previous system relied on motorbikes to deliver

blood samples on dirt roads.[80] Additionally, there are only eight laboratories in the country that can perform the HIV blood test, which are difficult to access from remote locations.[81] This puts thousands of infants' lives at risk of transmission and delayed care every year.[82] As a result, in 2016 Mawali partnered with the United Nations Children's Fund (UNICEF) to fund a UAV testing program.[83] They worked alongside Matternet, a California-based private company, to design the UAVs.[84] This initiative uses small UAVs to reduce waiting periods for HIV testing by piloting UAVs directly to laboratories.[85] This significantly improved the rate of response and patient outcomes.

Similar HIV testing programs are being used in Kenya and have been successful. Researchers found that 100 percent of UAV-transported samples were delivered within a three day goal, compared to 3 percent of samples delivered under the traditional system.[86] Along with being used for infant HIV

71 "HIV and Aids, the Basics," National Institute of Health, last reviewed May 28, 2025, https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-and-aids-basics.
72 "About HIV," Center for Disease Control, January 14, 2025, https://www.cdc.gov/hiv/about/index.html.
73 National Institute of Health "HIV and Aids, the Basics".
74 Center for Disease Control, "About HIV".
75 "Drone Testing for HIV Early Infant Diagnosis," UNICEF, March 14, 2016, https://www.unicef.org/innovation/stories/drone-testing-hiv-early-infant-diagnosis.
76 "At a Glance: HIV in Malawi," Be in the Know, last updated April 25, 2024, https://www.beintheknow.org/understanding-hiv-epidemic/data/glance-hiv-malawi.
77 "Perinatal (Mother to Child) HIV Transmission," Department of Health, last updated October 20, 2022, https://www.health.state.mn.us/diseases/hiv/prevention/perinatal.html.
78 UNICEF, "Drone Testing for HIV Early Infant Diagnosis".
79 "Malawi Tests First UAV Flights for HIV Early Infant Diagnosis," UNICEF USA, March 14, 2016, https://www.unicefusa.org/press/malawi-tests-first-uav-flights-hiv-early-infant-diagnosis.
80 Karen Allen, "Using Drones to Save Lives in Malawi," BBC News, March 15, 2014, https://www.bbc.com/news/world-africa-35810153.
81 Allen, "Using Drones to Save Lives in Malawi".
82 CGTN Africa "Malawi Uses Drones to Speed Up HIV Diagnosis,".
83 "Malawi Uses Drones to Speed Up HIV Diagnosis," CGTN Africa, March 16, 2016.
84 Allen, "Using Drones to Save Lives in Malawi".
85 "Drones," UNICEF, https://www.unicef.org/innovation/drones.
86 Caleb Parker, Emily Evens, et al., "Adding unmanned aerial vehicles to HIV supply chains in remote settings: modeling feasibility and cost in Turkana, Kenya," Journal of Global Health Reports, October 6, 2021, https://www.joghr.org/article/28349-adding-unmanned-aerial-vehicles-to-hiv-supply-chains-in-remote-settings-modeling-feasibility-and-cost-in-turkana-kenya?auth_token=l71fGb_ICGKPPiidgFbu.

testing, it is also being used to map inaccessible areas, provide internet during emergencies, and deliver medical supplies.[87]

UAVs are also being deployed in other medical fields such as vaccine delivery. This is especially promising for countries with unreliable infrastructure. For example, the Republic of Vanuatu is a country made up of 83 small islands, the majority of which are only accessible by boat.[88] Because of these challenges, only one in every five Ni-Vanuatu children are vaccinated.[89] In 2018, UNICEF partnered with Vanuatu to pilot a UAV 40 kilometers and transport the first UAV-delivered vaccines in history. The vaccines were safely delivered, and were administered by a registered nurse. The recipients were five children and five pregnant women who lived in Cook's Bay, a remote village without access to a healthcare facility or electricity.[90] Efforts like these show how UAVs can be used to improve medical care for people living in remote areas.

UAVs also provide humanitarian assistance in the form of emergency management. Following an earthquake, UAVs can be deployed for imaging of the surrounding area to help create the most effective

UAV transporting blood for humanitarian aid (Credit: U.S. Army TSAE)

plan for first responders.[91] UAVs can identify collapsed buildings, road blockages, and fire hazards to reroute emergency services based on this information.[92] This allows emergency responders to view the damage in real time and carefully decide the best possible next steps to address the situation. For instance, on January 1, 2024, Japan's Noto Peninsula suffered a 7.6 magnitude earthquake.[93] The earthquake caused over 500 deaths and destroyed over 150,000 homes.[94] During the commotion,

three civilians found shelter inside an elementary school, but were unable to alert authorities to their location.[95] While first responders were unable to reach them, the Japan UAS Industrial Development Association was able to send a UAV delivery of medicine and supplies to the school.[96] By using UAVs to deliver supplies, victims of the earthquake were able to receive urgent items that would not be possible to get otherwise.

Another way UAVs can be used for humanitarian relief is

87 Africa News, "UNICEF Opens First Humanitarian Drone Testing Corridor in Malawi".
88 UNICEF "Drones".
89 "Child given world's first drone-delivered vaccine in Vanuatu - UNICEF," UNICEF, December 18, 2018, https://www.unicef.org/eap/press-releases/child-given-worlds-first-drone-delivered-vaccine-vanuatu-unicef.
90 UNICEF "Child given world's first drone-delivered vaccine in Vanuatu - UNICEF".
91 "How Drones Are Used in the Aftermath of Disasters," Amprius, https://amprius.com/about/news-and-events/drones-disasters/.
92 "Emergency Response," JOUAV Unmanned Aircraft Systems, https://www.jouav.com/industry/emergency-response
93 "Earthquake Lifts the Noto Peninsula," NASA, January 2, 2024, https://earthobservatory.nasa.gov/images/152350/earthquake-lifts-the-noto-peninsula.
94 "One Year On: The State of Recovery on the Noto Peninsula," Nippon, January 1, 2025, https://www.nippon.com/en/japan-data/h02234/.
95 Nippon, "One Year On: The State of Recovery on the Noto Peninsula".
96 Tomoko Otake, "Drones' potential put to test in Ishikawa quake relief," Japan Times, January 16, 2024, https://www.japantimes.co.jp/news/2024/01/16/japan/society/drones-disaster-relief/

by helping to locate landmines in post-conflict regions. Former conflict zones hold up to one million unexploded weapons, threatening civilians and making land unusable.[97] In these regions, 84 percent of remaining explosives kill civilians, with 37 percent of deaths being those of children.[98] Furthermore, remaining landmines limit agricultural and economic productivity. Mines planted in fields, forests, and water sources make these resources inaccessible.[99] This can lead to famine and stunt economic opportunity for civilians. It is projected that the crop yields for both Afghanistan and Cambodia could double if the regions' landmines were removed.[100] However, removing these mines is a slow and dangerous process. The United Nations reports that for every five thousand mines removed, three workers are killed or seriously injured.[101] UAVs may offer a safer and more efficient method of finding these mines. UAVs can identify the types of mines and map their locations.[102] This information helps to determine which areas are unsafe before mine-removal operations can begin.

One system developed by PhD students at Columbia University and Bingham University demonstrated that it can spot PFM-1 mines faster than humans and with up to 90 percent accuracy.[103] Another company, Fenix Insight is working to incorporate AI onto UAVs for mine-searching. This allows the AI to not only find, but predict where explosives may have fallen by cross referencing social media reports with open-source intelligence.[104] While these efforts are still in development, UAVs offer a promising future for safer landmine removal efforts.

UAVs are transforming the way humanitarian aid and emergency response are delivered. Whether providing faster HIV test results in Malawi, transporting vaccines to isolated islands in Vanuatu, or helping emergency responders after natural disasters, drones are opening new possibilities for saving lives. They are even being developed to safely detect and map landmines, potentially reducing civilian casualties and restoring land for farming. While challenges remain, UAVs show great promise as tools that can make the world safer and

more connected, especially for communities most in need.

UAV Usage by NSAs and Terrorist Organizations

UAVs can be used as destructive weapons, and their usage is not limited to national entities. Many NSAs, including various terrorist organizations now have access to UAVs. It is important to distinguish the two different forms of terrorism: foreign and domestic terrorism. The United States's Federal Bureau of Investigation (FBI) defines foreign terrorism as violent criminal attacks sponsored by countries or foreign terrorist entities.[105] It defines domestic terrorism as violent criminal attacks that attempt to persuade others to follow an ideological agenda.[106] Both foreign and domestic terrorists can use UAVs to carry out their plans. From 1994 to 2018, there have been over 14 attempted terrorist attacks using UAVs.[107]

The earliest attempt of terrorist attacks using UAVs occurred in 1994 when Aum Shinrikyo, a Japanese terrorist group, tried using mini-helicopters to release

97   Maxym Marusenko, "Drones and AI Are New Recruits in Battle Against Land Mines," Columbia University Magazine, Winter 23-24, https://magazine.columbia.edu/article/drones-and-ai-are-new-recruits-battle-against-land-mines.
98   "Landmine Monitor 2024," International Campaign to Ban Landmines, 2024 volume, https://backend.icblcmc.org/assets/reports/Landmine-Monitors/LMM2024/Downloads/Landmine-Monitor-2024-Final-Web.pdf.
99   "Facts about Landmines," MineSweepers, https://landminefree.org/facts-about-landmines/.
100 MineSweepers, "Facts about Landmines" .
101 Marusenko, "Drones and AI Are New Recruits in Battle Against Land Mines,".
102 Lara Jakes, "Not Only for Killing: Drones Are Now Detecting Land Mines in Ukraine," New York Times, August 24, 2024, https://www.nytimes.com/2024/08/24/world/europe/ukraine-land-mines-drones.html.
103 Marusenko, "Drones and AI Are New Recruits in Battle Against Land Mines,".
104 Jakes, "Not Only for Killing: Drones Are Now Detecting Land Mines in Ukraine" .
105 "Terrorism," FBI, https://www.fbi.gov/investigate/terrorism.
106 FBI, "Terrorism".
107 Thomas G. Pledger, "The Role of Drones in Future Terrorist Attacks," Land Warfare, February 2021, https://www.ausa.org/sites/default/files/publications/LWP-137-The-Role-of-Drones-in-Future-Terrorist-Attacks_0.pdf.

the chemical weapon sarin on civilians.[108] Members of the cult tried attaching spray nozzles onto remote controlled helicopters to release chemical weapons on civilians.[109] However, the UAVs were extremely difficult to operate and caught on fire multiple times in initial tests, leading to them being scrapped for the actual attack.[110] Since then, UAV understanding and technology has improved significantly. Over fifteen studies researching possible specialized applications of UAVs have been published.[111] Additionally, UAVs have become lighter, faster, and equipped with better optics.[112]

The proliferation of this technology has also led to NSAs, such as FARC, Hezbollah, al-Qaeda, and ISIS gaining access to UAVs.[113] According to the United Nations Human Rights Council, over 20 armed NSAs have obtained UAV technology.[114] These organizations have been using UAVs for multiple purposes such as intelligence-gathering,

chemical weapons attacks, and delivering explosives.[115] UAVs also offer certain advantages to NSAs because they are cheap to buy and easy to acquire, making them easily accessible.[116] Also, the ability to operate a UAV from a remote location allows supporters of terrorist organizations to remain anonymous.[117]

One example was their use by terrorists in the Middle East. On January 29, 2024, the Islamic Resistance in Iraq launched a drone attack which killed three US soldiers and injured over 40.[118] The

> *UAVs present risks to military security and may allow other NSAs to use them in future attacks.*

attack occurred at an American base in Jordan, where a loitering

munition drove into the military sleeping quarters.[119] Most bases have security measures to prevent these types of attacks, but the vehicle's low flight path made it difficult to identify.[120] Additionally, the United States uses a variety of UAVs which follow similar flight paths, which may have caused the enemy UAV to be mistaken for one of its own.[121]

Another use for UAVs by NSAs is for propaganda. Propaganda is the controlled spreading of information to influence public opinion.[122] Terrorist groups use propaganda to spread public unrest, and often extreme ideologies.[123] In 2017, ISIS released and distributed "Knights of Bureaucracy," a 30-minute long video containing recordings of fighter attacks and suicide bombings. These attacks are too dangerous to record from the ground, but UAVs allow for aerial recordings of the violence. Documenting these attacks gives terrorist organizations content which can be used to spread fear. The shock of the video caused ISIS

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108 Robert J. Bunker, "TERRORIST AND INSURGENT UNMANNED AERIAL VEHICLES: USE, POTENTIALS, AND MILITARY IMPLICATIONS," Strategic Studies Institute, US Army War College, 2015, http://www.jstor.org/stable/resrep11741.
109 "Chronology of Aum Shinrikyo CBW Activities," Monterey Institute of International Studies, 2001, https://www.nonproliferation.org/wp-content/uploads/2016/06/aum_chrn.pdf.
110 Monterey Institute of International Studies, "Chronology of Aum Shinrikyo CBW Activities".
111 F Nex, C Armenakis et al., "UAV in the advent of the twenties: Where we stand and what is next," Science Direct, 2022, https://www.sciencedirect.com/science/article/pii/S0924271621003282#ab005.
112 F Nex, C Armenakis et al., "UAV in the advent of the twenties: Where we stand and what is next".
113 Bunker, "TERRORIST AND INSURGENT UNMANNED AERIAL VEHICLES: USE, POTENTIALS, AND MILITARY IMPLICATIONS".
114 "A/HRC/44/38: Use of armed drones for targeted killings - Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions," United Nations, August 15, 2020, https://www.ohchr.org/en/documents/thematic-reports/ahrc4438-use-armed-drones-targeted-killings-report-special-rapporteur.
115 Thomas G. Pledger, "The Role of Drones in Future Terrorist Attacks".
116 Ryan Jokl Ball, "The Proliferation of Unmanned Aerial Vehicles: Terrorist Use, Capability, and Strategic Implications," Lawrence Livermore National Laboratory, October 17, 2017, https://www.osti.gov/servlets/purl/1410035.
117 Ball, "The Proliferation of Unmanned Aerial Vehicles: Terrorist Use, Capability, and Strategic Implications".
118 Joshua Keating, "America no longer has a monopoly on deadly drones," Vox News, January 29, 2024, https://www.vox.com/2024/1/29/24055046/jordan-drone-strike-troop-deaths-proliferation.
119 Joshua Keating, "America no longer has a monopoly on deadly drones".
120 Betrand, Oren Liebermann,"US identifies three soldiers killed in attack in Jordan".
121 Betrand, Oren Liebermann,"US identifies three soldiers killed in attack in Jordan".
122 Bruce Lannes Smith, "Propaganda," Britannica, June 12, 2025, https://www.britannica.com/topic/propaganda.
123 Ariel Victoria Lieberman, "Terrorism, the Internet, and Propaganda: A Deadly Combination," Journal of National Security Law and Policy, 2017 https://jnslp.com/wp-content/uploads/2017/04/Terrorism_the_Internet_and_Propaganda_FINAL.pdf.

to gain attention from various media segments and television programs, spreading its impact.[124]

When terrorist organizations have access to UAVs, they pose a greater threat to governments and civilians.[125] As a result, many international organizations and countries have developed strategies to make these technologies inaccessible for these groups. In 2017, the Security Council passed Resolution 2370 to condemn and prevent weapons trafficking of UAVs to terrorist organizations.[126] In Resolution 2617, the Security Council expressed concern for UAV terrorism for attacking government infrastructure.[127]

To address these concerns, the United Nations recommends a coordination and management meeting (CMM) framework. The CMM has two parts, one which works to prevent non-state actors from accessing UAV technology, and one that responds to terrorist groups with access to UAVs. The CMM is open-ended to provide countries with the freedom to modify it for their own legislature. Some recommendations it includes are local and nationwide UAV committees, national regulation on UAV usage, and information-sharing systems between governments.[128] Ultimately, progress in the regulation of UAVs remains limited and without further progress their use by dangerous NSAs is likely to grow.

CURRENT STATUS

Operation Spider Web

UAVs are powerful weapons that can help balance the field especially between forces of unequal strength. Because of this, UAVs have become increasingly important in shaping modern conflicts. A clear example of this is the ongoing war between Russia and Ukraine, where drones are being used heavily on both sides. The war began in 2014, when Russian forces took control of the Crimean Peninsula.[129] President Putin claims that the military operation was necessary to prevent the abuse of Russian speakers in the Donbas region.[130] Others believe the invasion was to prevent Ukraine from joining Western alliances such as NATO and the European Union.[131] From 2014 to 2021, the Russian Federation began to militarize. It started up large scale operations to move heavy weaponry and missiles toward Ukraine.[132]

On February 24, 2022, President Putin announced a full-scale invasion of Ukraine. Since then, the Russian Federation has taken over twenty percent of the country.[133] The Russian Federation's attack was initially predicted to be successful because of its military strength. But, Ukrainian forces have exceeded predicted outcomes by resisting the invasion.[134] One way Ukraine has offset the power imbalance is by using UAVs to map battlefields,

124 Ball, "The Proliferation of Unmanned Aerial Vehicles: Terrorist Use, Capability, and Strategic Implications".
125 Pledger, "The Role of Drones in Future Terrorist Attacks".
126 "Side event on Preventing and Countering Terrorist Use of Unmanned Aircraft Systems (UAS): Good Practices and Trends in the Acquisition, Weaponization, and Deployment of UAS," United Nations Office of Counter Terrorism, June 21, 2023, https://www.un.org/counterterrorism/sites/www.un.org.counterterrorism/files/230621_-_unoct_aros_side_event_-_dusg_opening_remarks_-as_delivered.pdf.
127 "Preventing Terrorists from Acquiring Weapons," United Nations, 2017 https://www.un.org/securitycouncil/ctc/sites/www.un.org.securitycouncil.ctc/files/files/documents/2022/Mar/technical_guidelines_to_facilitate_the_implementation_of_security_council_resolution_2370_2017_and_related_international_standards_and_good_practices_on_preventing_terrorists_from_acquiring_weapons.pdf.
128 United Nations "Preventing Terrorists from Acquiring Weapons".
129 Center for Preventative Action, "War in Ukraine," Global Conflict Tracker, May 27, 2025, https://www.cfr.org/global-conflict-tracker/conflict/conflict-ukraine.
130 "Why did Vladimir Putin invade Ukraine in 2022?" Britannica, https://www.britannica.com/question/Why-did-Vladimir-Putin-invade-Ukraine-in-2022.
131 Britannica, "Why did Vladimir Putin invade Ukraine in 2022?".
132 "War in Ukraine," Center for Preventative Action.
133 "War in Ukraine," Center for Preventative Action.
134 Seth Jones and Riley McCabe, "Russia's Battlefield Woes in Ukraine," Center for Strategic and International Studies, June 3, 2025, https://www.csis.org/analysis/russias-battlefield-woes-ukraine.

deploy explosives, and shoot down Russian planes.[135]

On June 1, 2025, Ukraine used UAVs to carry out one of its most successful military missions: Operation Spiderweb. The operation took 18 months of planning, and destroyed billions of dollars of Russian aircrafts. Ukrainian forces smuggled UAV systems into Russia by packing them into containers, with about 36 drones in each container.[136] Then, they loaded the containers onto trucks, which were driven to Russian military bases all across the country. Once positioned at the bases, the roofs of the containers were lifted, allowing the first-person viewpoint drones to deploy and begin the attack.[137] In total, Operation Spiderweb used 117 drones.[138] Each FPV UAV was piloted remotely from Ukraine with its own operator.[139] According to the Security Service of Ukraine, the operation damaged at least 41 Russian planes, and destroyed thirteen.[140]

Operation Spider Web proved the importance of UAV technologies,

as the swarms of FPV drones estimated to be USD 500 each were able to cause around seven billion dollars worth of damage.[141] Operation Spiderweb not only redefines the power dynamics of the Russia-Ukraine war, but also highlights the disproportionate impact UAV attacks have on opposing forces. Operation Spiderweb will have a large impact on the Russia-Ukraine border conflict. The attack destroyed about a third of the Russian airforce.[142] Because many Russian planes require maintenance updates before they can be flown, the attack may have reduced the working Russian airforce by up to 70 percent.[143] Furthermore, the mission proved that Ukrainian forces can launch attacks deep into Russian territory. In previous attacks, Ukrainian forces were unable to penetrate into East Russia, allowing the Russian Federation to focus on offensive attacks rather than defensive strategies.[144] Spiderweb changed this by attacking five Russian military bases, including those in Eastern Siberia.[145]

Another way Operation Spiderweb has impacted this conflict is by reducing the nuclear power of the Russian Federation. During the attack Russian Tu-95 and Tu-22M3 aircrafts were hit, which are the planes used to launch long range missiles and deliver nuclear bombs.[146] By destroying these planes, Ukraine has lessened the Russian Federation's ability to launch nuclear weapons, making it a less credible threat.

Alongside these effects, Operation Spiderweb redefined UAV usage for future conflicts. During the mission, Ukrainian soldiers manipulated multiple swarms of UAVs and individually piloted FPV drones for a coordinated attack. This effort will likely encourage further military exploration of UAV technology. While investment in these technologies could improve military performance, it is also a cause for concern.

The mission also demonstrated the efficacy of AI in UAV technology. During the mission, it is reported that Ukrainian pilots relied on AI autopilot software to

135 Vitaliy Nabukhotny, "Ukrainian innovations are redefining the role of drones in modern war," Atlantic Council, June 10, 2025, https://www.atlanticcouncil.org/blogs/ukrainealert/ukrainian-innovations-are-redefining-the-role-of-drones-in-modern-war/.

136 Artem Mazhulin, Oliver Holmes, et al, "Operation Spiderweb: a visual guide to Ukraine's destruction of Russian aircraft," The Guardian, June 2, 2025, https://www.theguardian.com/world/2025/jun/02/operation-spiderweb-visual-guide-ukraine-drone-attack-russian-aircraft.

137 Artem Mazhulin, Oliver Holmes, et al, "Operation Spiderweb: a visual guide to Ukraine's destruction of Russian aircraft".

138 Laura Gozzi & BBC Verify, "How Ukraine carried out daring 'Spider Web' attack on Russian bombers," BBC News, June 2, 2025, https://www.bbc.com/news/articles/cq69qnvj6nlo.

139 Laura Gozzi & BBC Verify, "How Ukraine carried out a daring 'Spider Web' attack on Russian bombers".

140 Artem Mazhulin, Oliver Holmes, et al, "Operation Spiderweb: a visual guide to Ukraine's destruction of Russian aircraft".

141 Sam Kiely, "Inside Operation Spiderweb: Ukraine's drone triumph is a blow against Russia that will spook friend and foe alike," Independent, June 4, 2025, https://www.the-independent.com/news/world/europe/ukraine-drone-attack-operation-spiderweb-russia-bombers-b2762437.html.

142 Harlan Ullman, "What the US can learn from Ukraine's remarkable Operation Spider Web," The Hill, June 9 2025, https://thehill.com/opinion/national-security/5337452-spider-web-ukrainian-drone-attack-russia/.

143 Ullman, "What the US can learn from Ukraine's remarkable Operation Spider Web".

144 "Significance and Implications of Ukraine's Operation Spiderweb," Strategic Studies Department at Trends Research & Advisory, June 3, 2025, https://trendsresearch.org/insight/significance-and-implications-of-ukraines-operation-spiderweb/?srsltid=AfmBOoqoHZEDS_Y4KXp7z7s0yxk1qpAy1LhY1fVmk0h8Ef7c8nm1xnnt.

145 Trends Research & Advisory, "Significance and Implications of Ukraine's Operation Spiderweb".

146 Trends Research & Advisory, "Significance and Implications of Ukraine's Operation Spiderweb".

manage the UAVs when the human pilots lost signal.[147] Specifically, a software called ArduPilot, which is an open source AI model also available to civilian drone enthusiasts.[148] While Ukraine has been praised for its resourcefulness in the war it also presents a matter of concern. The weaponization of these readily available programs gives many countries and NSAs access to these powerful combat tools. Any actor is able to develop sophisticated UAV systems which can be used for devastating attacks. Thus, understanding how these tools can be used is critical for creating regulations for them.

International organizations such as NATO have already begun research into the roles UAVs play in the Russia-Ukraine War.[149] On February 17, 2025, NATO opened the Joint Analysis Training and Education Center (JATEC) in Poland.[150] This center researches and builds upon military technologies used in the Russia-Ukraine War with an emphasis on UAVs.[151] JATEC aims to hopefully shed light on the combat abilities of UAVs and also the danger they pose to global security.

Operation Spiderweb showcases recent changes in UAV technology. It also highlights the threatening implications of coordinated UAV attacks. As the Russia-Ukraine War continues to unfold, the emphasis placed on UAV warfare will undoubtedly grow, creating uncertainty over the proliferation of these weapons.

Houthi Drones in the Suez Canal and Red Sea Regions

In recent years, the rise of small, low-cost drones has transformed modern warfare, especially in asymmetric conflicts. A leading example is the use of drones by the Houthis, an Iran-backed extremist group based in Yemen. The Houthis have used targeted drone attacks on military and commercial ships in the Red Sea. These attacks are costly as nearly 15 percent of the world's maritime trade passes through this route.[152] These attacks reflect how small drones are changing the balance of power in warfare and threatening international security.

The Houthis are mainly composed of Zaidi Shia Muslims in Yemen.[153] Shia muslims comprise one of the two primary schools of Islam, making up around 15 percent of muslims worldwide.[154] In contrast to the Houthis, the Yemeni government is majority Sunni.[155] The Sunni-Shia divide began after the death of Muhammad in 632 AD over who should lead the Muslim community. Sunnis supported selecting a leader from Muhammad's companions, while Shias believed leadership should stay within his family, starting with his cousin Ali. Over time, this split grew into differences in religious rituals, leadership, and interpretation. While both groups share core beliefs like the Quran, their rivalry has been amplified by politics.[156]

As a Shia Muslim organization, the Houthis have opposing religious and political views from Yemen's Sunni dominated government.[157] They have been actively fighting against the Yemeni government since 2004.[158] Additionally, the Shia Houthis have been strongly supported by Iran which has a Shia majority government.[159] The Yemeni government is backed by Saudi Arabia, which is also Sunni, and has been leading a military campaign

147 Katja Bego, "Ukraine's Operation Spider's Web is a game-changer for modern drone warfare. NATO should pay attention," Chatham House, July 17, 2025, https://www.chathamhouse.org/2025/06/ukraines-operation-spiders-web-game-chalasting%20effecger-modern-drone-warfare-nato-should-pay-attention.
148 Bego, "Ukraine's Operation Spider's Web is a game-changer for modern drone warfare. NATO should pay attention".
149 Bego, "Ukraine's Operation Spider's Web is a game-changer for modern drone warfare. NATO should pay attention".
150 "New NATO-Ukraine Centre hosts resilience workshop to enhance cooperation and readiness," NATO, last updated April 14, 2025, https://www.nato.int/cps/en/natohq/news_234479.htm?selectedLocale=en.
151 Bego, "Ukraine's Operation Spider's Web is a game-changer for modern drone warfare. NATO should pay attention".
152 BBC "Who Are the Houthis and Why is the US Attacking Them?".
153 Cursino, "US launches wave of air strikes on Yemen's Houthis".
154 "The Sunni-Shia Divide," Council on Foreign Relations, April 27, 2023, https://www.cfr.org/article/sunni-shia-divide.
155 Center for Preventative Action, "Conflict in Yemen and the Red Sea," Global Conflict Tracker, March 26, 2025, https://www.cfr.org/global-conflict-tracker/conflict/war-yemen.
156 "The Sunni-Shia Divide," Council on Foreign Relations, accessed September 11, 2025, https://www.cfr.org/article/sunni-shia-divide/
157 "Who are Yemen's Houthis?," Wilson Center, July 7, 2022, https://www.wilsoncenter.org/article/who-are-yemens-houthis.
158 Wilson Center, "Who are Yemen's Houthis?".
159 Center for Preventative Action, "Conflict in Yemen and the Red Sea".

against the Houthi rebels since 2015.[160] Because of the political and military support the Houthis receive from Iran and the Yemeni government receives from Saudi Arabia, many consider the Yemen's Civil War to be a proxy war. This would mean the Yemen conflict is a war indirectly being fought by Iran and Saudi Arabia. At their core, the Houthi goals are to destroy Israel, expel Western countries from the Middle East, and spread Islam.[161]

The Houthis are classified by the United States as a Foreign Terrorist Organization. According to the Immigration and Nationality Act, this means that they are a non-domestic group that engages in acts of terror which threaten American security.[162] The Houthis claim to attack American ships because of the United States's alliance with Israel and its heavy involvement in the region.

The primary UAVs being used to target these ships are the Iranian manufactured Qasef-1 and Qasef-2 drones.[163] These UAVs are inexpensive and can fly for 50-60 miles carrying explosives that weigh up to 90 pounds. These UAVs can drop explosives onto ships from above, damaging the cargo and crew. Additionally, the Shahed-136 is a loitering munition

Houthi logo (Credit: Abdullah Sarhan)

commonly used by the Houthis to deliver kamikaze-like explosives.[164] Combined, these UAVs have been used to deter and destroy numerous cargo ships.

The canal attacks began under the Biden Administration in January of 2024 in response to American and British air strikes on Houthi sites in Yemen.[165] During the initial attacks, the Houthis sank two ships, seizing a third, and killing four crew members on board. The attacks on American ships continued into the Trump Administration, where the Houthis launched missiles at

American vessels.[166] These attacks have not only endangered the lives of American crewmembers, but also caused severe economic damage. President Trump claims that American ships have been terrorized for over a year, costing the American and global economies billions of dollars.[167]

In March of 2025, President Trump ordered another wave of air strikes on the Houthi targets, killing 31 and injuring over 100 others.[168] However, these efforts have not stopped the UAV attacks. When Iran was urged by the Trump

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160 Center for Preventative Action, "Conflict in Yemen and the Red Sea".

161 Nadwa Al-Dawsari, "The Ideological Underpinnings of the Houthis Red Sea Attacks," Middle East Institute, January 22, 2024, https://www.mei.edu/publications/ideological-underpinnings-houthis-red-sea-attacks

162 "Foreign Terrorist Organizations," US Department of State, https://www.state.gov/foreign-terrorist-organizations.

163 Simon Scarr, Adolfo Arranz, et al, "Red Sea Attacks," Reuters, February 2, 2024, https://www.reuters.com/graphics/ISRAEL-PALESTINIANS/SHIPPING-ARMS/lgvdnngeyvo/ .

164 Simon Scarr, Adolfo Arranz, et al, "Red Sea Attacks".

165 BBC "Who Are the Houthis and Why is the US Attacking Them?".

166 Malu Cursino, "US launches wave of air strikes on Yemen's Houthis," BBC, March 16, 2025, https://www.bbc.com/news/articles/c05mvr3j3yro.

167 BBC "Who Are the Houthis and Why is the US Attacking Them?".

168 Cursino, "US launches wave of air strikes on Yemen's Houthis".

Administration to end support for the Houthis, the Iranian government responded, "The United States government has no authority, or business, dictating Iranian foreign policy."[169] Iran's involvement with the Houthis is crucial to their success, as it provides intelligence support, weapons, and training.[170] This response signals how the cycle of drone warfare and economic disruption is likely to continue. Initially, the Houthis claimed they would only target ships connected to Israel in protest of the situation in Gaza.[171] However, the US Defense Agency reports that ships from 65 countries and 29 major firms have been impacted by the attacks.[172] Countries who have been severely affected by the piracy include the United States, Britain, Türkiye, Russia, China, and Qatar.[173]

The Red Sea is one of the most vital maritime corridors in the world. Nearly 30 percent of global cargo traffic occurs through the Suez Canal, which links the Mediterranean Sea to the Indian Ocean. On average, 50 ships sail through the canal per day, carrying between three and nine billion dollars worth of cargo.[174] This is because the Suez Canal is the fastest trade route connecting Asia to Europe.[175] Since the attacks began, trade through the canal has decreased by 66 percent.[176] Rerouting ships has created numerous delays in the supply chain, increasing global shipping costs.[177] One major sector impacted by this is global oil supplies. Roughly 9 percent of seaborne oil passes through the Suez Canal.[178] Due to the attacks, oil shipments through the canal decreased from 7.9 million barrels per day to 3.9 million.[179] As a result, oil prices are beginning to rise even further.[180] Natural gas prices have also increased by 25 percent.[181]

The rise of Houthi drone attacks highlights how inexpensive UAVs can create global disruptions far beyond their immediate battlefield. What began as a regional conflict has escalated into a proxy war fueled by Iran and Saudi Arabia, drawing in the US and its allies. The Houthis' abilities to strike vital shipping lanes in the Red Sea not only threatens military and commercial vessels, but also endangers international trade, energy security, and the stability of global markets. As long as Iran continues to provide support and the Houthis maintain access to low-cost drone technology, these attacks are likely to persist. This ongoing cycle underscores the urgent need for stronger international cooperation and renewed diplomatic efforts to prevent the conflict in Yemen from spiraling further into a global security crisis.

Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) are a set of 17 goals adopted by the United Nations in 2015.[182] These goals are a call to action for the United Nations and its member states to reduce poverty, protect the environment, and provide humanitarian relief to all civilians by 2030. These goals aim to reduce poverty, protect the environment, and ensure peace and

169　Abbas Araghchi, March 16, 2025, X.
170　Robinson, "Iran's Support of the Houthis: What to Know".
171　Norah O'Donnel, Aliza Chasan, et al, "Houthis get critical support from Iran for Red Sea attacks, U.S. Navy admiral says," CBS News, February 15, 2024, https://www.cbsnews.com/news/us-navy-admiral-talks-iranian-support-houthis-red-sea-60-minutes/
172　Agnes Helou, "65 countries affected by Houthi attacks in Red Sea, including Iran: US intelligence," Breaking Defense, June 13, 2024, https://breakingdefense.com/2024/06/65-countries-affected-by-houthi-attacks-in-red-sea-including-iran-defense-intelligence/.
173　Helou, "65 countries affected by Houthi attacks in Red Sea, including Iran: US intelligence".
174　New Zealand Foreign Affairs and Trade, "The Importance of the Suez Canal to Global Trade".
175　Simon Scarr, Adolfo Arranz, et al, "Red Sea Attacks".
176　Simon Scarr, Adolfo Arranz, et al, "Red Sea Attacks".
177　Brent Sadler and Nicole Robinson, "How Houthi Attacks Impact U.S. Consumers," The Heritage Foundation, May 15, 2024, https://www.heritage.org/middle-east/commentary/how-houthi-attacks-impact-us-consumers.
178　Racha Helwa and Perrihan Al-Riffai, "A lifeline under threat: Why the Suez Canal's security matters for the world," Atlantic Council, March 20, 2025, https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/a-lifeline-under-threat-why-the-suez-canals-security-matters-for-the-world/.
179　Racha Helwa and Perrihan Al-Riffai, "A lifeline under threat: Why the Suez Canal's security matters for the world".
180　Lora Jones, Jonathan Josephs & Faisal Islam, "Oil prices rise on US-UK strikes over Red Sea attacks," BBC, January 12, 2024, https://www.bbc.com/news/business-67947795.
181　Lora Jones, Jonathan Josephs & Faisal Islam, "Oil prices rise on US-UK strikes over Red Sea attacks".
182　"Sustainable Development Goals," United Nations, https://www.undp.org/sustainable-development-goals .

prosperity for all people. However, the growing use of UAVs poses a new challenge to achieving these goals. Drona attacks can disrupt trade, destroy infrastructure, and threaten civilian lives, undermining SDG goals 16: Peace, Justice, and Strong Institutions and 18: Decent Work and Economic Growth. As drone technology becomes more accessible to states and non-state actors, addressing its misuse has become a critical obstacle for achieving long-term peace and stability.

Small drone warfare aligns itself most closely with SDG 16: Peace, Justice and Strong Institutions. Target 16.1 of the SDG aims to, "significantly reduce all forms of violence and related death rates everywhere" and 16.2 aims to end violence against children. Preventing all war is an unrealistic goal. However, certain weapons can provide a heightened or reduced risk of death to non-combatants. The regulation of small drones in warfare can provide guidelines to ensure the safety of civilians. One criticism of drone warfare is that remote operations can increase the risk of unintended casualties. Unlike manned missions, UAV-driven operations rely on human interpretations of transmitted surveillance, which can reduce the accuracy of information. This can lead to uninformed decision-making, which can have deadly consequences. Regulating the usage of UAVs is necessary to protect civilians and children in conflict zones around the world in accordance with SDG 16.[183]

Furthermore, target 16.a focuses on strengthening governing bodies to prevent violence and terrorism. Because UAV technologies are extremely powerful and easily accessible, many terrorist groups have worked to acquire these weapons. To minimize terrorism and maintain legitimate governance, it is crucial to determine the extent to which these technologies can remain readily available. Member states must also examine whether there are counterterrorism UAV policies or technologies that need to be put in place.[184]

SDG 8 calls for sustained economic growth, productive employment, and decent work for all. However the rise of small drone warfare threatens this goal by destabilizing trade routes, damaging infrastructure, and creating economic uncertainty. The attacks on commercial ships in the Red Sea have disrupted one of the world's busiest trade corridors, slowing down the flow of goods and raising global shipping costs. These disruptions harm local economies and global supply chains, affecting industries from energy to agriculture. Instead of fostering growth and opportunity, warfare has undermined SDG 8's vision of inclusive and sustainable economic progress.[185]

Bloc Analysis

The development of small drones has accelerated rapidly in recent years, creating conflict on the ethical implications of investing in this form of warfare. As a topic of debate, there are many aspects pertaining to small drone warfare that create conflicting opinions. Small drones can be used as a tool to execute precision strikes with minimal risk to soldiers. However, they also may lead to weaker oversight which can lead to civilian harm. The implementation of AI within small drones has unleashed countless possibilities for commercial and combatant applications. However, it has also created discussions surrounding the ethical concerns of AI decision making. Delegates must consider all possible stakeholders in small drone warfare. Country policies will shift over time and adapt to emerging technologies. Therefore, these blocs should be considered as guidelines as opposed to strict

183 "Goal 16," United Nations, accessed September 11, 2025, https://sdgs.un.org/goals/goal16#targets_and_indicators.
184 United Nations, "Goal 16."
185 "Goal 8," United Nations, accessed September 11, 2025, https://sdgs.un.org/goals/goal8.

rules. Additionally, many countries may occupy multiple blocs or have sympathies with them.

Countries Who Are Military Developers and Users of UAVs

Small drones are extremely efficient weapons because of their stealth and low costs. These UAVs can be used to perform surveillance, drop explosives, and carry out tasks commanded by operators, enhancing military performance.[186] Because of these advantages, there are many countries interested in investing in and developing UAVs for combat. Many of the countries looking into UAVs are currently involved in conflicts. For example, Israel and Ukraine have supported integrating high-tech UAV weapons to their militaries.[187] Some countries in this bloc include Israel, Ukraine, the United States, the United Kingdom, Türkiye, and South Korea. Additionally, counties in this bloc may be producers of the technology and equipment required for UAVs.

In this bloc, countries may take the strongest stance toward the proliferation of military UAVs. They may be supportive of investing in existing technologies

and discovering new applications for UAVs. They may also be the least supportive of legally binding treaties or bans on UAV. In 2023, the Joint Political Declaration on Armed and Strike-Enabled UAVs was released, which gained support from almost 50 other countries.[188] The document works to improve transparency by promoting responsible usage and following international human rights laws while still rejecting binding regulations. Countries in this bloc signed the declaration as it allowed to promote a responsible use of small drone warfare without restricting their own ability to develop, export, and deploy the technology.

Countries Supporting Some Regulation and Frameworks for UAVs

Some countries in this bloc may have been targets of UAV strikes, such as Somalia or Pakistan. These countries may have experienced severe damage due to these technologies, and recognize the importance of international standards on these weapons. Other countries in this bloc may include countries affected by NSAs who use UAVs. These countries wish to regulate the purchasing, piloting,

and weaponization of UAVs to preserve safety and control.

One of the most significant issues this bloc hopes to address is the misuse of UAVs by terrorist organizations. Countries in this bloc focus on preventing terrorist acquisition of UAVs and funding to purchase UAVs. In 2021, the United Nations Security Council passed Resolution 2617 which reaffirmed concern for UAV terrorism and focused on drafting policies to prevent attacks.[189] Countries who voted in favor of this resolution include Norway, Vietnam, Kenya, and Estonia.

Another issue this bloc aims to address is providing greater accountability for civilian deaths due to UAVs. Some efforts to address this have already been drafted. One example is the United Nations Human Rights Council Report A/HRC/25/59, which investigates the ways in which civilians are impacted by remotely piloted aircraft, and urges further investigation into related civilian deaths.[190] While these countries may be in favor of complete freedom for UAVs for humanitarian purposes, they believe global frameworks and international guidelines must be in place to protect civilians against the power of militarized UAVs.

186 Surender, "AI in Military Drones: Game Changing Capabilities".
187 John Yoo, "A Legal Framework for the Use of Drones in War," American Enterprise Institute, March 14, 2024, https://www.aei.org/articles/a-legal-framework-for-the-use-of-drones-in-war/.
188 Alicia Jensen, "U.S. Seeks Rules for Armed Drones Trade," US Arms Control Association, https://www.armscontrol.org/act/2016-10/news/us-seeks-rules-armed-drones-trade.
189 "Resolution 2617," United Nations, 2021, google.com/search?q=un+res+2617+votes&sca_esv=f39770ec4cba26fc&ei=aRJ_aMveF8yOur8P4fXP4Ak&ved=0ahUKEwiLt8K1z8-OAxVMh-4BHeH6E5wQ4dUDCBA&uact=5&oq=un+res+2617+votes&gs_lp=Egxnd3Mtd2l6LXNlcnAiEXVuIHJlcyAyNjE3IHHZvdGVzMgUQIRigATIFECEYoAEyBRAhGKABMgUQIRigAUjhCVA4WKEJcAF4AJABAJgBVKABjwOqAQE2uAEDyAEA-AEBmAIGoAL_AsICCBAAGLADGO8FwgILEAAYgAQYsAMYogTCAgsQABiwAxiiBBiJBcICBRAhGJ8FmAMAiAYBkAYYEkgcBNqAH5hOyBwE1uAf6AsIHBTAuNS4xyAco&sclient=gws-wiz-serp.
190 "Resolution A/HRC/25/59," UNHRC, https://docs.un.org/en/A/HRC/25/59.

Countries Advocating for Total Bans of Militarized UAVs

This bloc advocates strongly for the complete ban or severe regulation of militarized UAVs. The majority of counties in this bloc are not heavily involved in combat zones and are devoted to human rights and peacebuilding efforts. The regulation and banning of UAVs is a powerful step toward demilitarization and disarmament, which is a priority for this bloc.

One of the most important goals of this bloc is to develop a legally binding international document for the sale, flight, and weaponization of UAVs. This document should address the weaponization of UAVs and the implementation of AI in UAVs to create lethal autonomous weapons systems (LAWS). Furthermore, this bloc will prioritize transparency between countries, and strongly suggest or mandate an international registry or reporting system for UAV production and usage. In 2023, the United Nations General Assembly passed Resolution 78/241 which extended International Humanitarian Law to autonomous weapons.[191] This document also determined that while autonomous weapons may be able to determine what is legal in a situation, it can never determine what is ethical. The issue of how to determine ethical decision-making by machinery, or if it can be done at all, is one topic this bloc may discuss. Some countries which were strongly in favor of this document include Ireland, Austria, Costa Rica, and Mexico. This bloc is in favor of banning this technology because of the humanitarian and ethical concerns for decision-making.

COMMITTEE MISSION

At its core, the United Nations was founded to create a more peaceful and prosperous world. The Disarmament and International Security committee has been crucial to this mission. The DISEC committee is essential to ensuring security within and between country borders for all. Since the United Nations's creation, DISEC has adapted to maintain international security. DISEC pledges to promote cooperation between all United Nations countries for disarmament and arms control. Small drone warfare has emerged as one of the most pressing issues of modern times. Therefore, delegates in this committee should work together to propose solutions, solidify country policies, and collaborate on resolutions to create a safe and free world.

It is important to note that while DISEC can recommend action to the United Nations Security Council, it cannot directly enforce it. Delegates will find success by considering all stakeholders in this debate. They must not only consider the military applications impacted by weapons in conflict, but also the civilians and NSAs involved. While not all countries are actively involved in conflict, the future of warfare is uncertain. Delegates must consider the long-term implications of the guidelines they choose to set for the usage of UAVs. By considering all these factors, as well as the humanitarian uses of UAVs, delegates will be able to identify the risks of UAV usage and outline guidelines for their implementation to military and civilian organizations.

191 "First Committee Approves New Resolution on Lethal Autonomous Weapons, as Speaker Warns 'An Algorithm Must Not Be in Full Control of Decisions Involving Killing,'" United Nations, 2023, https://press.un.org/en/2023/gadis3731.doc.htm.

RESEARCH AND PREPARATION QUESTIONS

The following research and preparation questions are meant to help you begin your research on your country's policy. These questions should be carefully considered, as they embody some of the main critical thought and learning objectives surrounding your topic.

Topic A

1. How does your country define LAWS? Additionally, are there any countries with similar or different definitions from yours?

2. Does your country have hostile non-state actors, and do they have access to LAWS? If so, how can your country increase security restrictions on LAWS?

3. Has your country sought to increase or regulate the use of LAWS in active war zones?

4. What can be done to address the risks of unintended civilian casualties associated with LAWS?

5. How could information sharing contribute to the oversight of LAWS research and development?

6. In the past, what precautions has your country taken to address the ethical concerns of the development of LAWS?

7. How does your country plan to address emerging LAWS technologies?

8. How has/will your country navigate corrupt uses of these technologies? Is there a focus within and outside of one's own government?

Topic B

1. Does your country use UAVs? If so, how often does your country use them in conflict zones?

2. How have UAVs impacted civilians' relationships with the government? Has it led to more trust or distrust?

3. How has your country been involved in the use of drones for humanitarian efforts?

4. How has your country been affected by UAV terrorism? If so, what ways has your country been able to combat the acquisition of small drones by terrorist organizations?

5. How does one continue to encourage the advancement of UAVs and for what purpose?

6. With the weaponization of UAVs, how does your country plan on defending civilians from physical and psychological threats that may be worsened by UAVs?

IMPORTANT DOCUMENTS

Topic A

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