



THESSISMUN



Study Guide

1st Committee of the UN General Assembly



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1. Welcoming Letter

Dear Participants,

We are truly honored and excited to welcome you to this year's ThessISMUN, particularly to the United Nations First Committee of the General Assembly, also known as the Disarmament and International Security Committee (DISEC). Your participation reflects your passion for diplomacy and eagerness to tackle some of the most pressing challenges facing the global community today. It is of utmost importance and also honor for us to serve as the Board of this year's simulation of DISEC, a committee that plays a crucial role in the international security agenda.

This year, we will focus on a critically vital topic: Weaponization and Militarization of Artificial Intelligence. AI has revolutionized the way we approach technology, innovation and problem-solving. However, its rapid militarization and weaponization pose profound security, geopolitical and ethical challenges. Your role, as delegates, will be to assess the risks posed by AI in warfare, explore its implications for international security and stability and propose comprehensive solutions to address this topic. It is a matter that requires multidimensional analysis, as it is interwoven with our globalized security.

To support your preparation, we have strived to create this Study Guide that provides essential background information, key discussion points and much-needed data regarding the topic at hand. Through this Study Guide, we hope that you will be ready for an exciting experience with heated and vivid debates.

Finally, we want to ask all of you to not only carefully read this guide, but also the Rules of Procedure (RoP), as you cannot play the game if you don't know the rules. It goes without saying that we are very much looking forward to meeting each and every one of you in person; it is at these conferences where amazing memories are forged and strong friendships are built. As your chairing team, we cannot wait for it to start!



Kind regards,

The Board of the 1st Committee of the General Assembly

Sotirios Anastasopoulos, *Chairperson*

Anna-Maria Papadopoulou, *Vice-Chair*



2. The 1st Committee of the General Assembly

The 1st Committee of the General Assembly (Disarmament and International Security Committee) was established in 1993 and constitutes one of the main Committees of the GA. The role of the Committee is circumscribed in Article 11, Chapter IV of the United Nations Charter¹.

“The General Assembly may consider the general principles of cooperation in the maintenance of international peace and security, including the principles governing disarmament and the regulation of armaments and may make recommendations with regard to such principles to the Members or to the Security Council or to both”. As per this article, the mandate of the 1st Committee of the General Assembly is highlighted as, “to promote the establishment and maintenance of international peace and security with the least diversion for armaments of the world's human and economic resources.”

The body’s pivotal responsibilities are interconnected with issues of disarmament, global challenges and threats to peace, all of which greatly affect the international community. The Committee seeks out solutions to the challenges in the international security regime. Any arising disarmament and international security matter falls within the ambit of the Charter relating to the powers and functions of the 1st Committee.

It implements the following principles when drafting its documents or in session:

- The general principles of cooperation in the maintenance of international peace and security.
- Principles governing disarmament and the regulation of armaments.

¹ United Nations, “UN General Assembly - First Committee - Disarmament and International Security,” Un.org, 2020, <https://www.un.org/en/ga/first/>.



- And, last but not least, the promotion of cooperative arrangements and measures aimed at strengthening stability through lower levels of armaments.

The Committee works closely together with the United Nations Disarmament Commission and the Geneva-based Conference on Disarmament. Moreover, it is the only Main Committee of the General Assembly entitled to verbatim records coverage.

3. Introduction to the Topic

Artificial Intelligence (AI) has emerged as a groundbreaking technology that is capable of transforming global security dynamics. Its capabilities in data analysis, autonomous decision-making and operational efficiency have led to its integration into military strategies globally. While the aforementioned advancements have revolutionized traditional military practices and offer many opportunities, they simultaneously introduce complex challenges. The weaponization and militarization of AI have sparked growing concerns about accountability, ethical dilemmas and the destabilization of global peace.

The usage of AI in military applications is multifaceted including autonomous drones, surveillance systems and cybersecurity tools. These technologies promise strategic advantages, like improved targeting accuracy, rapid decision-making processes and the ability to reduce human exposure minimizing casualties. However, these capabilities raise vital questions regarding control, oversight and misuse. Fully autonomous weapons, often termed “lethal autonomous weapons systems” (LAWS), challenge the fundamental principles of international humanitarian law and ethics. Delegating life and death decisions to machines and AI without human intervention introduces risks of malfunctions, bias and escalations.

A key challenge lies in the lack of robust international regulation to govern the use and proliferation of AI-driven military technologies. Even though discussions are taking place under existing frameworks like the Convention on Certain Conventional Weapons (CCW), consensus



remains elusive. The fast pace of AI innovations often outstrips the ability of policymakers to respond accordingly and in a timely manner, creating a regulatory gap. Competing national interests, coupled with the global race for technological superiority further complicate efforts to establish common standards.

The geopolitical implications of the militarization of AI are equally important. As nations invest in developing AI for defence, the global arms race continues, increasing mistrust and making conflicts more likely to occur. Furthermore, the accessibility of AI technologies to non-state actors and smaller nations raises concerns about their potential use in asymmetrical warfare and cyberattacks. This proliferation poses threats to fragile nations and intensifies existing security matters.

From an ethical viewpoint, the usage of AI in military operations often leads to unintended consequences. AI powered targeting systems for instance, risk violating privacy rights and disproportionately impacting civilian populations. The lack of transparency in AI algorithms also poses accountability challenges since it is unclear who will be held accountable in cases of any wrongdoing and misuse.

In general, the weaponization and militarization of AI are issues that are of urgent nature. DISEC, has a vital role in guiding the international community toward comprehensive solutions. The focus must extend beyond preventing misuse to ensure that AI is developed and deployed responsibly, with mechanisms to mitigate risks and uphold international law.

4. Definitions

- a. *Artificial Intelligence (AI)*: Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision



making, creativity and autonomy². Artificial intelligence is a field of science concerned with building computers and machines that can reason, learn, and act in such a way that would normally require human intelligence or that involves data whose scale exceeds what humans can analyze. AI is a broad field that encompasses many different disciplines, including computer science, data analytics and statistics, hardware and software engineering, linguistics, neuroscience, and even philosophy and psychology³.

- b. *Unmanned Aerial Vehicles (UAVs)*: UAVs are aircraft that are guided autonomously, by remote control, or by both means and that carry some combination of sensors, electronic receivers and transmitters, and offensive ordnance. They are used for strategic and operational reconnaissance and for battlefield surveillance, and they can also intervene on the battlefield—either indirectly, by designating targets for precision-guided munitions dropped or fired from manned systems, or directly, by dropping or firing these munitions themselves⁴.
- c. *Big Data*: Big data refers to extremely large and diverse collections of structured, unstructured, and semi-structured data that continues to grow exponentially over time. These datasets are so huge and complex in volume, velocity, and variety, that traditional data management systems cannot store, process, and analyze them. The amount and availability of data is growing rapidly, spurred on by digital technology advancements, such as connectivity, mobility, the Internet of Things (IoT), and artificial intelligence (AI). As data continues to expand and proliferate, new big data tools are emerging to help companies collect, process, and analyze data at the speed needed to gain the most value from it. Big data describes large and diverse datasets that are huge in volume and also

² Cole Stryker and Eda Kavlakoglu, “What Is Artificial Intelligence (AI)?,” IBM.com, August 9, 2024, <https://www.ibm.com/think/topics/artificial-intelligence>.

³ “What Is Artificial Intelligence (AI)?,” Google Cloud, n.d., <https://cloud.google.com/learn/what-is-artificial-intelligence?hl=en>.

⁴ John Taylor and John Guilmartin, “Military Aircraft - Unmanned Aerial Vehicles (UAVs) | Britannica,” in *Encyclopædia Britannica*, 2019, <https://www.britannica.com/technology/military-aircraft/Unmanned-aerial-vehicles-UAVs>.



rapidly grow in size over time. Big data is used in machine learning, predictive modeling, and other advanced analytics to solve business problems and make informed decisions⁵.

- d. *Machine Learning*: Machine learning (ML) is a branch of artificial intelligence (AI) focused on enabling computers and machines to imitate the way that humans learn, to perform tasks autonomously, and to improve their performance and accuracy through experience and exposure to more data⁶.
- e. *Deepfakes*: Deepfakes are videos, pictures or audio clips made with artificial intelligence to look real. They can be used for fun, or even for scientific research, but sometimes they're used to impersonate people like politicians or world leaders, in order to deliberately mislead people⁷.

5. Historical Background

a. Early Developments in AI and Automation

The early signs of AI and automation go back in the mid-20th century as part of an ambitious attempt to mimic human cognition and reasoning in machines. World War II marked a turning point in technological innovation, laying the foundation for the development of AI and automation in warfare. Particularly, the work of Alan Turing on the Enigma machine and the development of the Colossus computer, the first programmable electronic digital machine. The war demonstrated the importance of technological superiority in modern warfare, setting a precedent for the arms race that followed⁸.

⁵ “Big Data Defined: Examples and Benefits,” Google Cloud, n.d., <https://cloud.google.com/learn/what-is-big-data?hl=en>.

⁶ IBM, “Machine Learning,” Ibm.com, September 22, 2021, <https://www.ibm.com/think/topics/machine-learning>.

⁷ BBC, “Deepfake Technology: What Is It, How Does It Work, and What Can It Be Used For?,” *BBC Newsround*, May 15, 2024, sec. Newsround, <https://www.bbc.co.uk/newsround/69009887>.

⁸ “Artificial Intelligence’s Early History and Future,” www.ai-bees.io, n.d., <https://www.ai-bees.io/post/artificial-intelligences-early-history-and-future>.



There have been many examples of AI-like machinery and relative research, most notably Alan Turing’s work, particularly in his paper “Computing Machinery and Intelligence”. Additionally, John McCarthy proposed holding an “artificial intelligence” workshop laying the ground for AI as a scientific discipline⁹. Furthermore, Norbert Wiener, founder of the science of cybernetics, worked on automated anti-aircraft systems by introducing the concept of feedback loops, which later became a basic principle for automation and AI technologies¹⁰. Early developments were mostly theoretical, focusing on concepts like logic, algorithms and reasoning. Automation, on the other hand, found practical use in manufacturing industries with technologies such as programmable machines and robotic systems revolutionizing production lines. The application of AI and automation to military use initially emerged in limited capacities. During this period, simple automated systems were employed for tasks like radar tracking, missile guidance and warning systems¹¹.

b. Cold War and the Arms Race

The Cold War era initiated some of the developments mentioned above. In general, this period influenced the trajectory of military technology, including the early militarization of automation and precursors to AI. The main characteristic of this era is the rivalry between the United States and the Soviet Union which extended to ideological and geopolitical matters and fuelled an unprecedented arms race, with technological innovation being the tip of the spear. First steps toward integrating artificial intelligence into military systems occurred during the Cold War. Early expert systems designed for strategic planning and solving major problems were conceived during

⁹ “The History of Artificial Intelligence,” CompTIA’s Future of Tech, n.d., <https://www.futureoftech.org/artificial-intelligence/5-history-of-ai/>.

¹⁰ “From Cybernetics to AI: The Pioneering Work of Norbert Wiener - Max Planck Neuroscience,” Max Planck Neuroscience -, April 25, 2024, <https://maxplanckneuroscience.org/from-cybernetics-to-ai-the-pioneering-work-of-norbert-wiener/>.

¹¹ “A History of Automation the Rise of Robots and Ai | ThinkAutomation,” www.thinkautomation.com, n.d., <https://www.thinkautomation.com/bots-and-ai/a-history-of-automation-the-rise-of-robots-and-ai>.



this time. Although these systems were quite limited, they were designed to further build the ai future of military applications in decision making.

Both automation and computational technologies played a crucial part in military strategies during the Cold War. Created by the U.S. in the 1950s, the Semi-Automatic Ground Environment (SAGE) system¹² demonstrated the first attempt to use radar and computing technologies for air defense¹³. SAGE was able to detect incoming aircraft, analyze the threats they posed, and coordinate intercepts through what were then state-of-the-art interconnected computers. Meanwhile, the establishment of the U.S. Department of Defence's Advanced Research Projects Agency (ARPA), later renamed DARPA¹⁴, in 1958 came as a response to the Soviet launch of Sputnik. Worth mentioning is the proposed Strategic Defense Initiative by U.S. President Ronald Reagan, often referred to as "Star Wars"¹⁵ which was never realized, nonetheless it demonstrated how Cold War defense strategies highlighted the integration of new technologies to gain the upper hand in warfare.

The Soviets, initially set to work on creating their atomic bomb to match the U.S. in firepower following the Manhattan Programme, which led the U.S. to announce their development of the hydrogen bomb. Eventually, the stakes of another war became very high. The escalating weaponization of AI parallels the nuclear arms race of the Cold War, with nuclear weapons being replaced with automated weapons systems¹⁶.

¹² "SAGE | IBM," www.ibm.com, n.d., <https://www.ibm.com/history/sage>.

¹³ OpenSystems Media, "Artificial Intelligence Timeline - Military Embedded Systems," militaryembedded.com, January 24, 2019, <https://militaryembedded.com/ai/machine-learning/artificial-intelligence-timeline>.

¹⁴ "Innovation Timeline | DARPA," Darpa.mil, 2024, <https://www.darpa.mil/about/innovation-timeline>.

¹⁵ The Editors of Encyclopedia Britannica, "Strategic Defense Initiative | Description, History, & Facts," in *Encyclopædia Britannica*, March 27, 2019, <https://www.britannica.com/topic/Strategic-Defense-Initiative>.

¹⁶ JFK Library, "The Cold War," Jfklibrary.org (John F. Kennedy Presidential Library and Museum, 2020), <https://www.jfklibrary.org/learn/about-jfk/jfk-in-history/the-cold-war>.



Missile guidance systems also improved due to developments made in automation. Intercontinental Ballistic Missiles (ICBMs)¹⁷ put into practice for deterrence strategies during the Cold War depended highly on automated navigation and control systems that ensured effective and reliable shots. The same technologies were similarly developed in the Soviet Union, which elevated the competition in the technological arms race.

Additionally, the head-to-head race between the U.S. and the Soviets got even more heated in the field of space, satellites and landing on the moon. Following the success of the Apollo 11 mission, U.S. researchers managed to develop guided missile systems, allowing them to pose threats at an international range, meanwhile inspiring the development of drones¹⁸. Notable examples of semi-autonomous missiles and early drone systems are the U.S.-originated SM-64 Navaho¹⁹ missile system as well as the Soviet-originated S-75 Dvina²⁰ missile system. Consequently, computer research also increased. These developments paved the way for the automation of military tasks.

The Cold War era demonstrated that technology can always modify warfare and the belief that technological superiority formed and strengthened national security. The lessons learned from the Cold War arms race now directly influence the subsequent developments of AI and even automation since sophistication continued in the decades following.

c. Rise of Autonomous Weapons and AI-Enhanced Systems (2000s – Present)

The dawn of the 21st century marked a new period for the development and deployment of autonomous weapons and AI-enhanced systems. Advancements in computing systems, sensor

¹⁷ The Editors of Encyclopaedia Britannica, “ICBM | Missile | Britannica,” in *Encyclopædia Britannica*, 2019, <https://www.britannica.com/technology/ICBM>.

¹⁸ MAIEI, “The Evolution of War: How AI Has Changed Military Weaponry and Technology,” Montreal AI Ethics Institute, May 22, 2022, <https://montrealetics.ai/the-evolution-of-war-how-ai-has-changed-military-weaponry-and-technology/>.

¹⁹ “SM-64 Navaho United States Nuclear Forces,” Fas.org, 2024, <https://nuke.fas.org/guide/usa/icbm/sm-64.htm>.

²⁰ “S-75,” www.astronautix.com, n.d., <http://www.astronautix.com/s/s-75.html>.



technologies and machine learning algorithms enabled the practical application of AI in military operations, marking a new era of warfare.

The international community began to take notice of AI and its impact on modern warfare at the start of the 2010s with a series of documents issued by the U.S. Department of Defense including policy directives on autonomy in weapons systems and a report by Human Rights Watch and the Harvard Law School's International Human Rights Clinic (2012 HRW-IHRC report) calling for a ban on automated weapons. The 2010s also saw the rise of Lethal Autonomous Weapons Systems (LAWS) which received severe criticism for their ability to select and engage targets without human intervention.

Unmanned Aerial Vehicles (UAVs), commonly known as drones have become one of the most impactful developments of AI in warfare. Notably, systems like the U.S MQ-1 Predator and MQ-9 Reaper drones have revolutionized surveillance and strike capabilities remotely. The aforementioned drones are able to perform reconnaissance missions, track targets and accomplish precision strikes, overall minimizing risks to human operators.

Given how quickly money is being spent on drone and AI development, technological developments may ultimately allow drones to make judgments in real time during a conflict without the need for human input. Since drone responses will only involve retaliatory violence, this could potentially eliminate peaceful negotiation in conflict. Drone technology has already moved from its use by NATO to detect concealed Serbian key positions during the Kosovo War in 1999 to its employment by the United States in the immediate aftermath of the September 11 terrorist attacks. The U.S. military used and equipped drones with deadly payloads more frequently



after an ISR drone successfully discovered Osama Bin Laden; between 2010 and 2020, 14,000 drone attacks were conducted in Afghanistan alone²¹.

The three countries with the biggest drone usage are still the US, UK, and Israel, and their arsenals are still expanding. For more than ten years, the US and the UK have employed weaponized drones, such as the Predator and the Reaper, which are manufactured by General Atomics, a California-based corporation. Drone Wars claims that over the four years of the Syrian conflict, from 2014 to 2018, the UK used Reaper drones on strategic missions more than 2,400 times, or twice a day. According to Pentagon projections, 70 percent of the U.S. Air Force will be remotely flown by 2035. Israel has been creating its own weaponized drones in the meantime, and it has used them to transport explosives, carry out surveillance, and more in Gaza.

Furthermore, militaries all over the world are quickly adopting drone technology. Nowadays, almost all NATO members are able to utilize drones in combat. Both Pakistan and Turkey have established drone manufacturing projects in the past five years. China presently provides its Wing Loong and CH-series drones to a number of countries, including Saudi Arabia, Nigeria, Iraq, Egypt, and the United Arab Emirates. Drones are even being used by non-state groups. While Hamas has been employing drones against Israel since October 2023, Hezbollah has violated Israeli airspace with Iranian-built spy drones.

States and tech firms are increasingly concentrating on the creation and application of weapons that can perform autonomous tasks during hostilities. In 2017, 126 CEOs and founders of robotics and AI businesses signed an open letter from the Future Life Institute to the UN, which "implored" states to stop an arms race for autonomous weapons systems (AWS). Nevertheless, there is no worldwide legal regulatory structure to handle these issues regarding AI use, especially when it

²¹ Oleksandra Molloy, "How Are Drones Changing Modern Warfare? | Australian Army Research Centre (AARC)," Army.gov.au, July 31, 2024, <https://researchcentre.army.gov.au/library/land-power-forum/how-are-drones-changing-modern-warfare>.



comes to conflict. The International Covenant on Civil and Political Rights' Article 26 provides the only legal framework for AI, and it only connects the use of AI to the right to privacy²².

AI use in warfare is spreading rapidly. There have been reports that Ukraine has equipped its long-range drones with AI. Also, Israel has used the “Lavender” AI system in Gaza to identify Hamas targets. Accordingly, the current Israeli-Hamas conflict has been dubbed as the first “AI war”. However, there is no evidence of an AWS being used in the conflict yet²³.

Taking into account the above, the rise of autonomous weapons and the usage of AI in military operations has sparked debates worldwide over regulation and control. As powerful global actors continue to invest in research and development, the risk of AI-driven arms race looms large.

d. The Role of Big Data and Machine Learning in Modern Warfare (2010s – Present)

Big Data and machine learning have revolutionized military applications of AI, providing unprecedented capabilities for data analysis, decision-making and operational efficiency. Big data is essentially a paradigm change in data management that calls for creative methods to unlock the potential value concealed in enormous and intricate data stores. Big data in combat refers to a variety of sources, including social media feeds, sensor data, satellite imaging, and communication intercepts. For military organizations, the sheer amount, speed, and diversity of data produced in contemporary battles offer both benefits and obstacles. Armed forces can obtain a competitive advantage on the battlefield by utilizing advanced analytics techniques like artificial intelligence (AI) and machine learning (ML) to extract actionable insights from large datasets²⁴.

²² Kristian Humble, “AI & the Future of Conflict | GJIA,” Georgetown Journal of International Affairs, July 12, 2024, <https://gjia.georgetown.edu/2024/07/12/war-artificial-intelligence-and-the-future-of-conflict/>.

²³ Human Rights Watch, “Questions and Answers: Israeli Military’s Use of Digital Tools in Gaza,” Human Rights Watch, September 10, 2024, <https://www.hrw.org/news/2024/09/10/questions-and-answers-israeli-militarys-use-digital-tools-gaza>.

²⁴ “Data Science in the Military: An Overview | Institute of Data,” December 12, 2023, <https://www.institutedata.com/blog/data-science-in-the-military/>.



Information superiority has already begun to be valued over weaponry in the current course of combat. This shift emphasizes how crucial it is to integrate a variety of components into military operations, including command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). The ability to efficiently collect, analyze, and securely disseminate critical information to military units is at the core of this development²⁵.

By 2040, technological advancements, particularly the combination of more affordable sensor technologies and advanced big data analytics, suggest a potential paradigm shift in the real-time recognition and interpretation of data. Many international military organizations see this potential and are currently formulating plans to take advantage of information's strength in bolstering their military capabilities and tactics. These projects look on emerging technology, especially artificial intelligence, to enable long-term surveillance and refine decision-making processes.

AI and ML algorithms are used to analyze vast amounts of data collected from various sources, including satellite imagery, social media feeds, and electronic communications, to predict enemy movements, identify potential threats, and assess the effectiveness of military strategies. For example, predictive analytics can help military commanders anticipate insurgent attacks or identify patterns of behavior associated with terrorist organizations. Additionally, AI and ML technologies have revolutionized the capabilities of unmanned aerial vehicles (UAVs) or drones. These aircraft can autonomously navigate terrain, identify and track targets, and make real-time decisions based on sensor data. UAVs equipped with AI algorithms are used for surveillance, reconnaissance, and precision targeting in a wide range of military operations, from counterterrorism missions to border security.

Logistics and supply chain management, in military operations, can be optimized using AI and ML algorithms. Predictive analytics help military planners anticipate equipment and personnel

²⁵ Yijie Weng and Jianhao Wu, "Big Data and Machine Learning in Defence," *International Journal of Computer Science and Information Technology* 16, no. 2 (April 29, 2024): 25–35, <https://doi.org/10.5121/ijcsit.2024.16203>.



requirements, identify efficient transportation routes, and minimize the risk of supply chain disruptions. AI-powered autonomous vehicles and drones are also being explored for the delivery of supplies to troops in remote or dangerous locations.

Big data has the potential to transform the battlefield, but there are a number of opportunities and problems associated with its successful integration into defense intelligence analysis. To overcome these obstacles and achieve the significant transformation of all-source intelligence analysis, strategic vision, skilled leadership, and prudent resource allocation are essential. Defense intelligence organizations may increase their impact on military planning, execution, and strategic decision-making on the battlefield by utilizing big data. The full potential of big data will be unlocked upon the realization of these crucial findings, signaling a paradigm shift in the field of defense intelligence and the modern battlefield²⁶.

6. Legal Framework

a. **Convention on Certain Conventional Weapons (CCW):** The Convention on Certain Conventional Weapons (CCW) is a key international humanitarian law instrument that regulates or bans weapons causing excessive harm or indiscriminate effects. Adopted in 1980 and in force since 1983, it provides flexibility to address evolving warfare technologies. The Convention outlines general provisions, membership rules, and the ability to negotiate new protocols and contains specific prohibitions and restrictions on certain weapons. Under Article 8(2)(a), new protocols can be proposed. Currently, Lethal Autonomous Weapons Systems (LAWS) are under discussion, with a Group of Governmental Experts (GGE) examining challenges since 2017²⁷.

²⁶ OpenSystems Media, “Harnessing Big Data: How Advanced Analytics and AI Are Changing the Battlefield - Military Embedded Systems,” Militaryembedded.com, 2024, <https://militaryembedded.com/ai/big-data/harnessing-big-data-how-advanced-analytics-and-ai-are-changing-the-battlefield>.

²⁷ United Nations, “The Convention on Certain Conventional Weapons – UNODA,” United Nations, n.d., <https://disarmament.unoda.org/the-convention-on-certain-conventional-weapons/>.



b. **UNGA Resolution 73/27:** This resolution addresses the growing concerns over the use of information and communication technologies (ICTs) in ways that could undermine international security. It emphasizes the need for Member States to promote the peaceful use of ICTs and to prevent their exploitation for purposes inconsistent with international peace and security. The resolution also established an Open-Ended Working Group (OEWG) to further discuss developments in ICTs in the context of international security, encouraging all Member States to participate actively in these discussions²⁸.

c. **UNIDIR Report on Military AI (2023):** Within the United Nations, the application of artificial intelligence (AI) in the military domain has, to-date, primarily discussed in the context of the United Nations Group of Governmental Experts (GGE) on emerging technologies in the area of lethal autonomous weapons systems (LAWS). However, the application of AI within the military domain extends beyond the issue of LAWS. In the midst of discussions and debates around the opportunities and risks of AI for military purposes, as well as the governance and responsible use of these technologies, the United Nations Institute for Disarmament Research (UNIDIR)'s new report aims to increase understanding of the role of AI in the execution of military tasks beyond applications relating to the use of force and the narrow tasks of target selection and target engagement within the targeting process. The report provides an overview of current and near-future AI capabilities relevant to aiding with 18 military tasks. The paper also presents a discussion on the strengths and limitations regarding the application of AI to these military tasks²⁹.

d. **UNESCO's Recommendation on the Ethics of AI:** The protection of human rights and dignity is the cornerstone of the Recommendation, based on the advancement of fundamental principles such as transparency and fairness, always remembering the importance of human oversight of AI

²⁸ UN General Assembly (73rd Sess.: 2018-2019), "Developments in the Field of Information and Telecommunications in the Context of International Security :: Resolution /: Adopted by the General Assembly," *Digitallibrary.un.org*, December 11, 2018, <https://digitallibrary.un.org/record/1655670?v=pdf>.

²⁹ Sarah Grand-Clément, "Artificial Intelligence beyond Weapons: Application and Impact of AI in the Military Domain," *Unidir.org*, November 10, 2023, <https://unidir.org/publication/artificial-intelligence-beyond-weapons-application-and-impact-of-ai-in-the-military-domain/>.



systems. However, what makes the Recommendation exceptionally applicable are its extensive Policy Action Areas, which allow policymakers to translate the core values and principles into action with respect to data governance, environment and ecosystems, gender, education and research, and health and social wellbeing, among many other spheres³⁰.

e. **Interim Report: Governing AI for Humanity (2023):** The motivation for establishing the high-level advisory body was the rapid development and uptake of AI applications. The report notes that AI applications could potentially become a game changer, assisting humanity in reaching the SDGs, monitoring and helping design policies to mitigate and adapt to climate change, discovering new medicines, and many more. At the same time, the report notes, AI poses risks cybering security, privacy, and cultural diversity. Furthermore, AI applications are just as effective at aiding destructive as benign forces. The distributional effects of AI applications are also a concern. The objective of the advisory body's work is thus to come up with recommendations on global governance of AI. The report discusses the opportunities and enablers of AI, and the risks of unfettered AI applications doing harm either accidentally or willfully in the hands of groups and individuals aiming at destruction³¹.

f. **United Nations General Assembly Resolution 78/241³²:** On 22 December 2023, the United Nations General Assembly adopted Resolution 78/241 on Lethal autonomous weapon systems with 152 votes in favor, addressing the rapid technological development linked to the military domain, and more specifically the use of artificial intelligence and the integration of autonomy in weapon systems. Based on the provision of the UN Charter, international humanitarian law and international human rights law, all applicable in the process of regulating autonomous weapon

³⁰ UNESCO, "Recommendation on the Ethics of Artificial Intelligence | UNESCO," www.unesco.org, May 16, 2023, <https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence>.

³¹ "Governing AI for Humanity," 2023, https://www.un.org/sites/un2.un.org/files/un_ai_advisory_body_governing_ai_for_humanity_interim_report.pdf.

³² "Resolution 78/241. Lethal autonomous weapons systems," December 28, 2023, <https://documents.un.org/doc/undoc/gen/n23/431/11/pdf/n2343111.pdf>.



systems, the GA expressed its concern on the potential consequences of these weapon systems in the international community and the need for further actions to be taken in this field. It requested the UN Secretary General to submit a report including the views, inter alia, of Member and Observer States and regional and international organizations on the pressing matter of autonomous weapon systems and the related challenges raised. This report³³ was submitted on 1 July 2024. It summarized the views requested according to paragraphs 2 and 3 of the Resolution, consisting of definitions, deliberations by states, and observations made by the UN Secretary General emphasizing the humanitarian, legal, ethical, security and technological considerations as well as potential benefits of the use of autonomous weapon systems.

7. Main Discussion of the Topic

7.1 Military Applications of AI

Many states worldwide progressively develop sophisticated military systems powered by Artificial Intelligence and revise their strategies to further facilitate the integration of these AI technologies in their military arsenal. The use of AI-driven weapons and tools in battlefields, during conflicts and attacks becomes more and more prominent, with many concerns on ethics, legality and security troubling the international community. Autonomy in AI-driven weapons and the absence of human control transforms human-machine interaction during conflicts, posing obstacles in the application of international humanitarian law. Many concerns have arisen regarding potential system errors and the unsupervised use of these weapons that can cause unintentional civilian casualties, escalate conflicts, and threaten peace and international security, as well as the proliferation of such weapons by non-state actors, such as terrorist groups.³⁴

³³ “Lethal autonomous weapons systems Report of the Secretary-General,” July 1, 2024, <https://documents.un.org/doc/undoc/gen/n24/154/32/pdf/n2415432.pdf>.

³⁴ “Understanding the Global Debate on Lethal Autonomous Weapons Systems: an Indian Perspective.” Carnegie Endowment for International Peace, n.d. <https://carnegieendowment.org/research/2024/08/understanding-the-global-debate-on-lethal-autonomous-weapons-systems-an-indian-perspective?lang=en&cr=india>.



7.1.1 Lethal Autonomous Weapon Systems (LAWS) and AI

Lethal Autonomous Weapon Systems are autonomous military weapon systems able to detect, identify, track and engage with (i.e., intercept, use force against, neutralise, damage or destroy) targets without any manual control. While no commonly accepted definition of the LAWS exists, the lack of human intervention is critical to understand and evaluate the function and the consequences of their use. Advancements in technology have led to states increasingly developing and incorporating into their military arsenal autonomous weapons. However, military systems with different types of autonomous functions have existed for decades. Land mines are viewed as rudimentary autonomous weapons. Their indiscriminate cause of harm, difficult to be controlled, led to the Anti-Personnel Mine Ban Treaty in 1997.³⁵

Weapons with autonomous capabilities most commonly take the form of defensive systems. These systems (e.g., antipersonnel and antivehicle mines), once initiated, function independently via trigger mechanisms. Sentry guns and missile defense systems constitute modern systems with progressively advanced technology and integrated weapon systems, able to autonomously scan, detect, track and engage with targets of hostile missiles. Other examples are loitering munitions, also referred to as suicide, kamikaze, or exploding drones, which have an integrated warhead (munition) and wait (loiter) in a specific area until an operator on the ground or automated sensors on board locate a target, with which they engage. Advancements in their functionalities have allowed for heavier payloads, longer ranges, and integration of AI technologies.

Not all autonomous weapon systems use AI to carry out their missions. Artificial Intelligence is not a requirement for autonomous weapon systems to function, but its integration could further

³⁵ International Committee of the Red Cross, “What You Need to Know About Autonomous Weapons,” July 26, 2022, <https://www.icrc.org/en/document/what-you-need-know-about-autonomous-weapons>.



enable them. The use of AI in autonomous weapons could take the form of AI tools able to extract behavior from data and the formation of pre-defined tasks or sequences of actions based on predetermined. This enables the system to make decisions on its own or modify its behavior in response to the changing factors and surrounding conditions.³⁶ AI driven autonomous weapons are pre-programmed to kill a specific “target profile” and then deployed into an environment where its AI searches for that target using sensor data, such as facial recognition. When the weapon encounters someone or something the algorithm perceives to match its target profile, it fires and kills. The decision, thus, to attack is not made remotely by a human operator, but by algorithms alone.³⁷

7.1.2 AI-Enabled Terrorism

a) Use of AI in physical attacks

i. Autonomous vehicles

Across the years, there are many examples of vehicles, such as cars and vans, being used in terrorist attacks. These include deliberate ramming attacks, as in the Berlin Christmas market attack in 2016³⁸ and in Barcelona in 2017,³⁹ as well as car-bomb attacks, such as the Kabul ambulance bombing in 2018 that killed 103 people and injured many more.⁴⁰

³⁶ United Nations Office for Disarmament Affairs, “Lethal Autonomous Weapon Systems (LAWS),” United Nations, 2023, <https://disarmament.unoda.org/the-convention-on-certain-conventional-weapons/background-on-laws-in-the-ccw/>.

³⁷ “Front Page,” Ban Lethal Autonomous Weapons, November 12, 2017, <https://autonomousweapons.org/>.

³⁸ Jason Hanna. “Berlin Christmas market attack: The victims.” CNN, December 23, 2016, <https://edition.cnn.com/2016/12/23/europe/berlin-christmas-market-attack-victims/>.

³⁹ CNN Editorial Research. “Terrorist Attacks by Vehicle Fast Facts.” CNN, September 6, 2020, <https://edition.cnn.com/2017/05/03/world/terrorist-attacks-by-vehicle-fast-facts/index.html>.

⁴⁰ James Doubek and Amy Held, “At Least 103 Killed, 235 Wounded In Taliban Car Bombing In Kabul.” NPR, January 27, 2018, <https://www.npr.org/sections/thetwo-way/2018/01/27/581265342/dozens-killed-more-than-100-wounded-in-taliban-car-bombing-inkabul?t=1598955985489>.



A widely known application of AI is autonomous vehicles, also referred to as self-driving cars. AI is crucial for self-driving vehicles, in analyzing sensory data from the cameras and radars, in deciding upon and controlling the vehicle's movements according to the surroundings, the obstacles and the anticipated traffic without any human intervention, enabling their autonomous driving capabilities.⁴¹ Autonomous vehicles are viewed by many as the means of transportation of the future, being safer, more convenient and more efficient.

Considering the prolonged history and connection of terrorism and vehicles, increased autonomy in vehicles could prove to be accommodating for terrorist groups, allowing them to effectively execute an attack remotely, without the driver having to sacrifice himself or risk being apprehended.⁴² The use of self-driven vehicular bombs could potentially decrease the need for suicide bombers. Aside from that, self-driven vehicles could also be used to cause serious accidents by blocking the roads or causing carnage.⁴³

ii. Drones – Uncrewed aerial systems (UAS)

The term “vehicles” does not imply only wheeled motor vehicles but also includes, inter alia, flying vehicles, such as unmanned aerial systems, commonly referred to as drones. Drones are usually remote-controlled with a low degree of autonomy, but AI develops an opportunity for drones to become more or even fully autonomous. AI technology can be seen utilized in drones in the form of autonomous navigation, object detection and recognition, real-time decision-making and mission planning. Technical advancements and the application of AI allow for drones to perform

⁴¹ Nelu Clarisa. “Exploitation of Generative AI by Terrorist Groups.” International Centre for Counter-Terrorism - ICCT, June 10, 2024. <https://icct.nl/publication/exploitation-generative-ai-terrorist-groups>.

⁴² Jeffrey W. Lewis, “A Smart Bomb in Every Garage? Driverless Cars and the Future of Terrorist Attacks,” September 28, 2015, <https://www.start.umd.edu/news/smart-bomb-every-garage-driverless-cars-and-future-terrorist-attacks>.

⁴³ “Algorithms and Terrorism: The Malicious Use of Artificial Intelligence for Terrorist Purposes,” United Nations Counter-Terrorism Centre (UNCCT) and the United Nations Interregional Crime and Justice Research Institute (UNICRI), 2021, https://unicri.it/sites/default/files/2021-06/Malicious%20Use%20of%20AI%20-%20UNCCT-UNICRI%20Report_Web.pdf.



more complex missions autonomously and efficiently. Terrorist groups can benefit from this, considering they are cheaper and require minimal training. Uncrewed aerial systems (UAS) have been characterized as one of the primary terrorist threats by the United Nations Security Council Counter-Terrorism Committee.⁴⁴ In the past, drones have been used by terrorist groups for attacks against state military assets, diplomatic facilities and civilian centers.

Additionally, the integration of AI facial recognition tools in drones could allow for very specifically targeted attacks. Facial recognition technology enables the programming of the drone to detect, identify, and attack a pre-selected target by cross-referencing images collected by the drone with images uploaded into an embedded facial recognition database, with any human input.

The malicious use of drones by terrorist groups is considered an increasing threat, with facial recognition technologies rendering them more attractive given their potential capability to identify and attack targets in such an automated manner.⁴⁵

b) Generative AI in the use of terrorist groups

Generative AI is the latest tool in the arsenal of digital warfare. It is a type of artificial intelligence that uses machine learning to create new, original content, in the form of text, images, audio, video or simulations, based on large amounts of datasets and parameters, deriving its inspiration from the way the human brain works. Its main characteristic, which differentiates it from other types of AI, is its ability to develop new outputs instead of just predicting and categorising them. Generative AI programs are text-based chatbots or programs designed to simulate conversations with humans,

⁴⁴ Nelu Clarisa. “Exploitation of Generative AI by Terrorist Groups.” International Centre for Counter-Terrorism - ICCT, June 10, 2024. <https://icct.nl/publication/exploitation-generative-ai-terrorist-groups>.

⁴⁵ United Nations Counter-Terrorism Centre (UNCCT) and the United Nations Interregional Crime and Justice Research Institute (UNICRI), “Algorithms and Terrorism: The Malicious Use of Artificial Intelligence for Terrorist Purposes,” 2021, https://unicri.it/sites/default/files/2021-06/Malicious%20Use%20of%20AI%20-%20UNCCT-UNICRI%20Report_Web.pdf.



such as ChatGPT and Google Gemini, image or video generators, like Bing Image Creator or DALL-E 3, and voice generators, such as Microsoft VALL-E.

All these programs have led to an increase in the interest shown towards the use of generative AI, not just from state actors, the private sector and the general public, but also from terrorist organizations, which harness generative AI to create engaging content and persuasive propaganda material in order to enhance their recruitment and radicalization capabilities, posing a threat to global security. The increasing sophistication of AI models raises a growing concern that generative AI will play a notable role in the modus operandi of terrorist groups, which will take advantage of its capabilities and features to enhance their operational capacities.

i. Propaganda – Disinformation – Deep fakes

Historically, propaganda has been a cornerstone of terrorist groups since it is critical for recruitment, radicalization, and inciting violence. Propaganda manipulates truths, fosters ideologies, influences public opinion, and distorts narratives that appeal to specific audiences. While traditional forms of propaganda consisted of printed papers and broadcasts, technological advancements have transformed the way this content is created and disseminated, significantly amplifying its reach and impact.

Introducing generative AI in propaganda can generate a false reality through fake images, videos, or audio which are weaponized to create sophisticated and convincing propaganda materials that align with the organizations' values. These can all be indistinguishable from authentic human content, allowing the perpetrators to sow chaos and disorder through misinformation and disinformation. AI-generated propaganda material can be more efficient with its impact increasing sufficiently, being tailored to its targets. When merged with advancements in targeted advertising, generative AI forecasts a transformation in the speed, scale, and credibility of terrorism influence operations.



Through guides on the creation of AI images and the development of deepfakes and AI translators for propaganda content, terrorists could use generative AI to create hallucinations through diverse strategies, like psychological warfare or false flag operations to influence people's behavior.

One of the most concerning applications of generative AI in terrorism is the creation of deepfakes, which are synthetic media output, e.g., videos or audio recordings, from Generative AI tools, resembling certain persons, objects or events that appear genuine. Technology leverages deep learning algorithms which analyze and replicate the finer nuances of a person's facial expressions and voice, making the fake content alarmingly convincing. Coupled with the speed and reach of the Internet and social media platforms, these terrorist materials can reach a huge amount of people worldwide in a very short amount of time.

Additionally, considering the low-cost of these types of terrorist and radical content, producing large volumes of convincing propaganda material no longer requires extensive resources. While traditional methods require significant time, skill, and money, AI tools can create content quickly and cheaply, allowing even small terrorist groups to launch sophisticated disinformation campaigns. This democratization of propaganda tools means the barrier to entry for creating and spreading harmful content is lower than ever.⁴⁶

The current war in Gaza is an example where terrorists have used generative AI as different images have been leaked on the internet to instigate more violence and increase their propaganda of disinformation. Some pictures of injured babies or young people were fact-checked and appeared to be created through generative AI to instigate more chaos and disturbing content on the internet.

ii. Recruitment

⁴⁶ Lidia Bernd, "AI-Enabled Deception: The New Arena of Counterterrorism." Georgetown Security Studies Review, May 3, 2024. <https://georgetownsecuritystudiesreview.org/2024/05/03/ai-enabled-deception-the-new-arena-of-counterterrorism/>.



Moving from propaganda to interactive recruitment is just one step deeper in terrorist use of generative AI. A potential use of AI-based tools is in the data mining process to profile candidates and identify individuals susceptible to radicalization and potential recruits who meet the group's criteria. Subsequently, generative AI tools enable the personalization and precise dissemination of terrorist information or messaging for potential recruits, based on their searches and their digital footprint via chatbots. Concerns have been raised about these generative AI tools' capabilities in micro-profiling, micro-targeting, and automatically generating tailored texts for recruitment purposes.⁴⁷

In addition, during the recruitment process AI-powered chatbots can be used to draw the attention of the possible victims by interacting with them and offering responses to their input. Applying generative AI has the potential to increase terrorists' ability to create personal relationships with potential recruits by providing the recruiters with tailored information based on their interests and beliefs, thereby making the extremist group's messages seem more related to their interests.

7.2 Challenges and Controversies

For decades, autonomous weapons like mines, torpedoes, and missiles have operated without human control. However, AI-powered weapons introduce new threats, raising concerns about geopolitical stability and the ability of humans to maintain control. AI may redefine warfare and human-machine interactions, making it crucial for nations to assess its impact on military strategy and global security.⁴⁸

AI will revolutionize military operations by enhancing decision-making, intelligence analysis, and warfare tactics. It will transform training, enable precise strikes, and challenge human control as

⁴⁷ Asha Hemrajani, "The Use of AI in Terrorism," RSIS_NTU, August 26, 2024, <https://www.rsis.edu.sg/rsis-publication/rsis/the-use-of-ai-in-terrorism/>.

⁴⁸ Nelu Clarisa. "Exploitation of Generative AI by Terrorist Groups." International Centre for Counter-Terrorism - ICCT, June 10, 2024. <https://icct.nl/publication/exploitation-generative-ai-terrorist-groups>.



AI systems surpass cognitive capabilities. Intelligence management will rely on AI-driven data analysis, while warfare will shift toward information dominance, including propaganda and disinformation. Additionally, AI will accelerate conflict, with future attacks prioritizing cyber and space assets, potentially increasing the risk of preemptive nuclear strikes⁴⁹.

7.2.1 Ethical implications

The ethical implications of AI and machine learning (ML) in warfare are complex, particularly regarding the delegation of life-and-death decisions to machines⁵⁰. The two primary paradigms—counterterrorism and classic aero-land warfare—differ significantly in how AI is integrated into critical functions like target selection and force deployment. While some military applications of AI, such as co-pilots, language translation, and bomb disposal robots, are largely non-controversial, concerns arise over cybersecurity, data privacy, and the potential for AI systems to be exploited by malicious actors. As military operations increasingly rely on AI-driven networks and data analysis, protecting sensitive information and mitigating cyber threats becomes a critical challenge⁵¹.

The widespread adoption of AI in armed conflicts raises serious ethical dilemmas, particularly regarding accountability, responsibility, and adherence to International Humanitarian Law (IHL). AI's unpredictability, lack of transparency, and potential biases complicate efforts to ensure compliance with fundamental principles such as proportionality, distinction, and necessity. While ethical frameworks like the U.S. Department of Defense's AI principles and China's position on military AI regulation aim to promote responsible development, they fail to address AI's key

⁴⁹ Catherine Caruso, "The Risks of Artificial Intelligence in Weapons Design," Harvard.edu, August 7, 2024, <https://hms.harvard.edu/news/risks-artificial-intelligence-weapons-design>.

⁵⁰ "Ethics of Emerging Technologies on the Battlefield," orfonline.org, n.d., <https://www.orfonline.org/expert-speak/ethics-of-emerging-technologies-on-the-battlefield>.

⁵¹ Catherine Caruso, "The Risks of Artificial Intelligence in Weapons Design," Harvard.edu, August 7, 2024, <https://hms.harvard.edu/news/risks-artificial-intelligence-weapons-design>.



limitation—its inability to fully distinguish between combatants and civilians. Unlike AI, humans possess contextual reasoning skills that allow for more precise ethical decision-making in warfare⁵².

In conclusion, the rise of AI and ML in armed conflict presents both unprecedented opportunities and profound challenges. While these technologies have the potential to revolutionize military capabilities and reshape the nature of warfare, their deployment must be guided ethically in accordance with legal principles and in respect to human rights and IHL. As the world navigates this technological frontier, it is essential to strike a balance between innovation and responsibility to ensure a future where AI and ML contribute to peace and security rather than sow the seeds of chaos and destruction⁵³.

7.2.2 Technological implications

Artificial intelligence is poised to revolutionize military operations across domains, from autonomous weapons systems and decision-support tools to cyber warfare capabilities. These technologies promise enhanced precision, reduced human casualties and improved strategic decision-making. A prominent development of AI-based decision support systems in military decision-making processes. Likewise, autonomous weapon systems represent another significant development in AI-enabled warfare.

In general, AI offers several advantages in modern warfare, one key benefit being enhanced decision-making and strategic planning. AI decision support systems offer commanders the ability to process vast amounts of data in real time, enabling faster, more informed decisions. Another

⁵² C. Todd Lopez, “DOD Adopts 5 Principles of Artificial Intelligence Ethics,” U.S. Department of Defense, February 25, 2020, <https://www.defense.gov/News/News-Stories/Article/Article/2094085/dod-adopts-5-principles-of-artificial-intelligence-ethics/>.

⁵³ “Navigating the AI Battlefield: Opportunities and Ethical Frontiers,” [www.nrdc-ita.nato.int](https://www.nrdc-ita.nato.int/newsroom/insights/navigating-the-ai-battlefield-opportunities--challenges--and-ethical-frontiers-in-modern-warfare), 2024, <https://www.nrdc-ita.nato.int/newsroom/insights/navigating-the-ai-battlefield-opportunities--challenges--and-ethical-frontiers-in-modern-warfare>.



promising opportunity is the potential for enhanced precision in targeting. AI systems, including some forms of autonomous weapons, can process complex datasets to identify and differentiate between military and civilian targets effectively.

AI will likely aid military planning, particularly for intelligence and maneuvering. Algorithms enhanced with AI and trained on military datasets will vastly improve analytic quality. These algorithms will be able to rapidly conduct terrain analysis using existing geographic and bathymetric data to facilitate maneuver planning and to forecast enemy locations⁵⁴.

However, some technological implications exist, such as the Problem of Algorithmic Bias, which presents a critical concern in military AI systems, as it can skew decision-making processes. Biases in AI decision support systems and autonomous weapon systems emerge from multiple stages, including data curation, model development, and system use. In military contexts, these biases could lead to discriminatory outcomes, undermining the principle of non-discrimination embedded in International Humanitarian Law⁵⁵.

Additionally, as the battlefield is an unstructured and unpredictable environment, it is challenging to design software that can adapt to such constant changes and ensure ethical engagements in such scenarios. In addition, AWS relies on massive amounts of data to train algorithms. The data might be biased or unrepresentative, leading to unpredictable or harmful outcomes⁵⁶.

7.3 Case Studies

⁵⁴ “When AI Meets the Laws of War | IE Insights,” IE Insights, 2024, <https://www.ie.edu/insights/articles/when-ai-meets-the-laws-of-war/>.

⁵⁵ Mehmet Akif Uzer, “The Integration of AI in Modern Warfare: Ethical, Legal, and Practical Implications,” CYIS, September 24, 2024, <https://www.cyis.org/post/the-integration-of-ai-in-modern-warfare-ethical-legal-and-practical-implications>.

⁵⁶ Sara Goudarzi, “A New Military-Industrial Complex: How Tech Bros Are Hying AI’s Role in War,” Bulletin of the Atomic Scientists, October 7, 2024, <https://thebulletin.org/2024/10/a-new-military-industrial-complex-how-tech-bros-are-hying-ais-role-in-war/>.



a. Russo-Ukrainian War

Russia's full-scale war in Ukraine marks the first international conflict where both sides have actively deployed artificial intelligence (AI) for military purposes. AI has played a critical role in geospatial intelligence, unmanned systems, military training, and cyber warfare. While AI-driven drones and data analysis tools were already in use before the war, Ukraine has leveraged AI to counter disinformation and enhance battlefield awareness. Today, AI aids warfighters by processing vast amounts of data from weapons, soldiers, and surveillance systems, improving decision-making and operational effectiveness⁵⁷.

Ukraine appears to be benefiting more from AI integration, though it remains uncertain whether this advantage will translate into decisive battlefield gains. AI is essential for target recognition, geolocation, and analyzing open-source intelligence, giving Ukraine an edge in geospatial warfare. Drones have become crucial, enabling reconnaissance, artillery direction, and direct strikes, while AI-powered long-range drone attacks target Russian military sites. In response, Russia has escalated its use of electronic warfare tactics, deploying advanced jamming systems to disrupt Ukrainian drone communications and navigation. These countermeasures have inflicted significant damage, with drones responsible for the majority of Ukrainian battlefield casualties⁵⁸.

Recognizing Ukraine's AI-driven military advantage, Russia is ramping up drone production and AI investment. In October 2024, Russian Defense Minister Andrei Belousov highlighted the growing role of AI-powered drones, while President Vladimir Putin announced plans to manufacture 1.4 million units. This AI arms race is shaping future warfare strategies, forcing both nations to innovate rapidly. As NATO monitors these developments, the risk of AI-powered

⁵⁷ Samuel Bendett, "Roles and Implications of AI in the Russian-Ukrainian Conflict," Center for a New American Security, July 20, 2023, <https://www.cnas.org/publications/commentary/roles-and-implications-of-ai-in-the-russian-ukrainian-conflict>.

⁵⁸ "The Rush for AI-Enabled Drones on Ukrainian Battlefields," Default, 2024, <https://www.lawfaremedia.org/article/the-rush-for-ai-enabled-drones-on-ukrainian-battlefields>.



weaponry falling into the hands of violent non-state actors grows, raising concerns about AI proliferation and its impact on global security⁵⁹.

b. AI-enabled Cyber Attacks

AI-powered cyberattacks are an emerging cybersecurity threat, enabling attackers to automate and enhance traditional hacking techniques. These attacks leverage AI and machine learning to identify vulnerabilities, deploy malware, establish backdoors, and manipulate data. AI-driven cyber threats include phishing, ransomware, deepfakes, and adversarial machine learning, making them increasingly sophisticated and difficult to detect. Key features such as attack automation, real-time adaptation, and precise target identification allow adversaries to refine their strategies and exploit vulnerabilities with alarming efficiency.

A major example of AI-enhanced cyberattacks is the SolarWinds hack in 2020, one of the largest cybersecurity breaches in history. Attackers infiltrated SolarWinds Orion, a widely used IT monitoring system, by embedding malware in a software update. This supply chain attack provided unauthorized access to thousands of organizations, including U.S. government agencies and major corporations like Microsoft, Intel, and Cisco. The malware blended seamlessly with legitimate activity, making detection extremely difficult and allowing attackers to exfiltrate sensitive data over six months.

The U.S. government attributed the attack to Russia's Foreign Intelligence Service (SVR), though Russia denied involvement. Reports also suggested Chinese hackers exploited SolarWinds around the same time. The global scale of the breach underscored the risks of AI-powered cyber threats, demonstrating how sophisticated adversaries can compromise critical infrastructure. As AI

⁵⁹ Vitaliy Goncharuk, "Russia's War in Ukraine: Artificial Intelligence in Defence of Ukraine - ICDS," ICDS, September 27, 2024, <https://icds.ee/en/russias-war-in-ukraine-artificial-intelligence-in-defence-of-ukraine/>.



technology advances, cybersecurity defenses must evolve to counter increasingly intelligent and adaptive cyberattacks⁶⁰.

c. Situation in the Middle East – AI-powered military technologies and weapon systems

Both states and terrorist groups are increasingly using drones and artificial intelligence (AI) in warfare, raising concerns about automated killing on a massive scale. While global efforts focus on preventing nuclear proliferation in the Middle East, AI weaponization remains largely unregulated, posing security risks beyond the region. The lack of international oversight allows AI-driven military technology to evolve unchecked, potentially escalating conflicts and making targeted attacks more precise and lethal.

Non-state actors, including Boko Haram, Hamas, Hezbollah, Houthi rebels, and ISIL, have incorporated drones into their combat strategies. Since the early 2000s, drone strikes in Afghanistan and Yemen signaled a shift toward unmanned warfare. ISIL launched its first drone attack in 2016, later establishing the "Unmanned Aircraft of the Mujahedeen" to expand its drone capabilities. Other groups, such as Iranian-backed militias, have carried out drone-based attacks, including the 2019 strike on Saudi oil facilities. Drones have also been used for targeted assassinations, as seen in failed attempts on Venezuelan President Nicolás Maduro (2018) and Iraqi Prime Minister Mustafa Al-Kadhimi (2021). These examples highlight how both state and non-state actors are increasingly integrating AI-driven drone technology into their military arsenals.

AI warfare is advancing rapidly, as seen in Israel's use of AI-powered military systems in the Gaza Strip. During the May 2021 conflict, Israel's "Fire Weaver" system linked intelligence sensors to battlefield weapons, while AI tools like "Gospel" and "Lavender" automated target identification.

⁶⁰ Saheed Oladimeji and Sean Michael Kerner, "SolarWinds Hack Explained: Everything You Need to Know," Techtarger, November 3, 2023, <https://www.techtarger.com/whatis/feature/SolarWinds-hack-explained-Everything-you-need-to-know>.



Recent reports suggest that Project Lavender processes vast amounts of surveillance data to generate airstrike targets, raising ethical concerns about mass surveillance and indiscriminate attacks. The Israel Defense Forces (IDF) have denied claims that Lavender autonomously selects human targets, insisting it functions as a cross-referencing intelligence database. However, the controversy highlights broader concerns about transparency, accountability, and the ethical implications of AI-driven warfare.

8. Governmental Perspectives

Governments are competing for leadership in AI and its military applications, with some embracing it while others remain skeptical. AI is already a key factor in conflicts like the Russo-Ukrainian war and the Middle East.

The U.S. leads efforts to promote responsible military AI use. The Department of Defense (DoD) released its Artificial Intelligence Strategy in 2018, warning of security risks if AI adoption lags. The U.S. has spent 87% of federal AI funding on defense, with 800+ AI projects and a \$1.8 billion budget request for 2024. The Political Declaration on Responsible Military AI seeks global consensus on ethical AI deployment. Russia is also investing in AI for military use, balancing long-term automation goals with short-term reliance on human oversight, particularly in Ukraine. China, through its Next Generation AI Development Plan, aims to be the world's AI leader by 2030, integrating AI into its military strategy for unmanned combat, intelligence, and battlefield awareness.

The European Union stresses human control over AI in warfare, advocating a ban on lethal autonomous weapons (LAWS). In September 2024, 60 nations backed a “blueprint for action” on responsible military AI, but China refused to sign. The agreement emphasized preventing AI-



driven weapons of mass destruction and ensuring human oversight in nuclear weapons use. This divide reflects broader disagreements on AI regulation and military ethics ⁶¹.

9. Closing Remarks

AI's rapid advancement in military applications presents both opportunities and risks, with its weaponization emerging as a major global concern. The absence of a universal regulatory framework heightens the risk of misuse, escalating geopolitical tensions and security threats. As AI continues to evolve, its integration into warfare and law enforcement must be carefully managed to prevent unintended consequences. Addressing these challenges requires international cooperation, ethical oversight, and innovative regulatory approaches to ensure AI enhances security rather than destabilizing global peace.

⁶¹ Reuters, "Sixty Countries Endorse 'Blueprint' for AI Use in Military; China Opts Out," CNBC (CNBC, September 11, 2024), <https://www.cnbc.com/2024/09/11/sixty-countries-endorse-blueprint-for-ai-use-in-military-china-opts-out.html>.



10. Points to be addressed

1. Which definition of LAWS should be adopted?
2. Which are the consequences of the incorporation of AI-driven LAWS in the military arsenal of States? Which actions need to be taken in order for these to be averted?
3. In what way could the misuse of AI-driven vehicles in order to serve terrorist purposes be avoided or decreased?
4. How can the recruitment of drones and UAS from terrorist groups be regulated?
5. What is the role of AI tools regarding terrorist groups' information operations and recruitment processes? Can these tools be used to enhance counter-terrorism measures?
6. What ethical concerns are being raised from the use of autonomous systems in warfare, particularly regarding the delegation of life-and-death decisions to machines?
7. How will the further militarization of AI impact the global balance of power, specifically between technologically advanced nations and those with limited access to resources and what will the potential implications for international stability be?
8. How could the use of AI in warfare lead to unintended consequences like escalations through miscommunication, false positives in targeting and the breakdown of command structures?
9. Why does the proliferation of AI-enabled weapons pose threats of misuse by rogue states, terrorist organizations and other non-state actors and what international mechanisms can prevent their acquisition or use?
10. What is the role of existing international legal frameworks, such as the Geneva Conventions or the Convention on Certain Conventional Weapons (CCW), international humanitarian law as well as the principles of international law in addressing the unique challenges posed by AI militarization, and what gaps exist in their applicability to autonomous systems?



11. How can the international community address the growing concerns over the use of AI in warfare, particularly in the context of the Russo-Ukrainian war?
12. What is the role of AI-powered technologies in the Israel-Hamas war and how do these impact civilian populations live in the region?
13. How can the proliferation of AI technologies in ongoing conflicts lead to the militarization of AI in other regions and what steps can be taken to prevent the spread of such technologies to unstable or conflict-prone areas?
14. How can a balance be struck between the benefits and the disadvantages of AI in warfare?

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