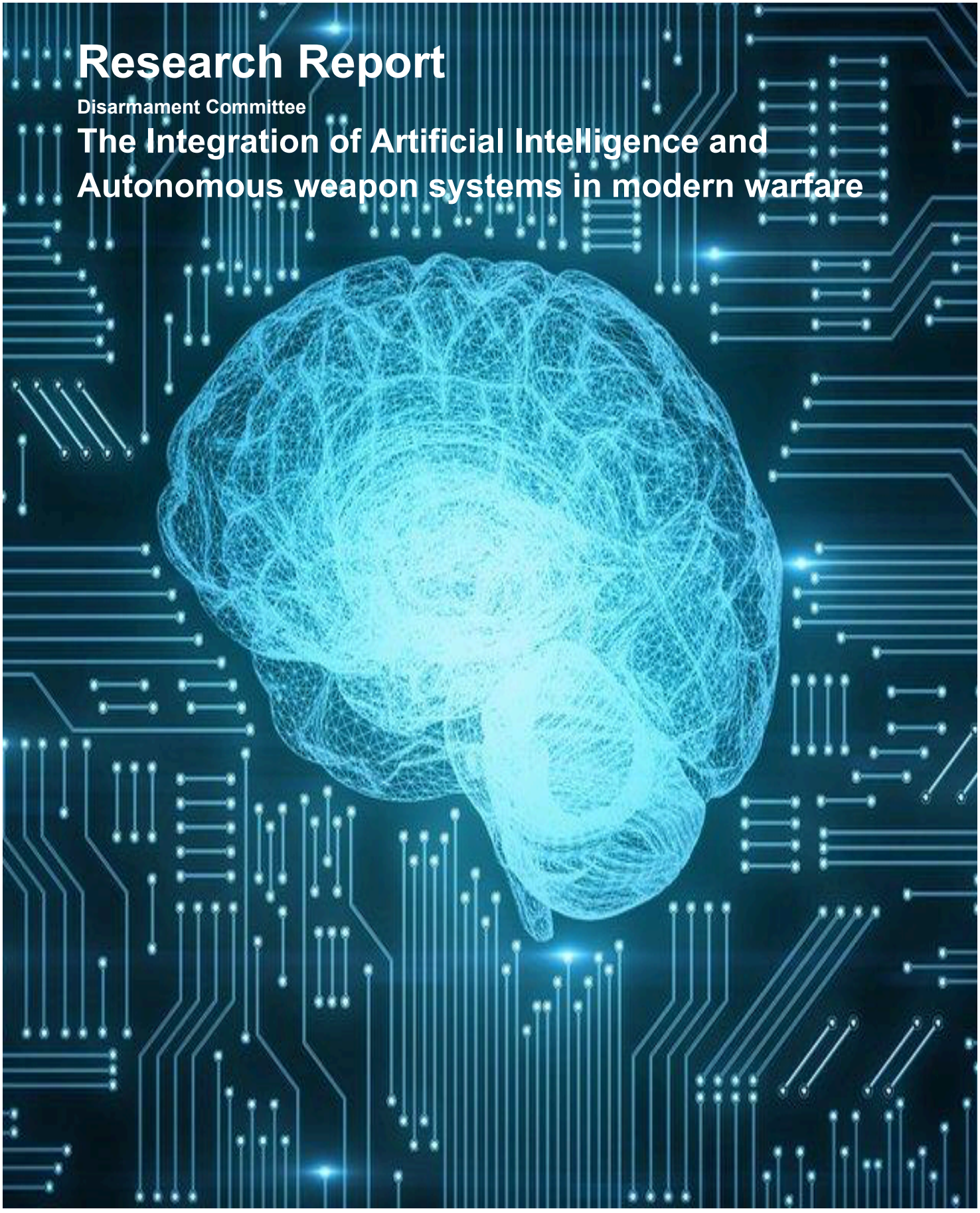
Research Report

Disarmament Committee

The Integration of Artificial Intelligence and Autonomous weapon systems in modern warfare



Forum	Disarmament
Issue	The integration of Artificial Intelligence and Autonomous Weapon Systems in modern warfare.
Student officer	Aitan H
Position	Chair

Introduction:

The Disarmament and International Security Committee (DISEC) is the first committee of the United Nations General Assembly. This committee addresses and deals with issues that are related to disarmament challenges to global security as well as threats to international peace.

In essence, the aim is to ensure that the world is safe from perilous and deadly weapons which could pose an immense threat to the innocent civilians who are not involved in this warfare. For this reason, this convention intends to guarantee this safety through completely eliminating those weapons of mass destruction. This is done by prohibiting the development, stockpiling, production, re-emergence, transfer and use of chemical weapons.

Nowadays, the major problem that is being concerned is the rapid growth of AI and integration in military applications, producing weapons that function autonomously. Provided that it incredibly strengthens & increases efficiency to many areas of the military field and reduces human input, it also has its downsides such as potential threats with the lack of human accountability and control. For instance, lethal autonomous weapons are a clear example of powerful tools with zero human engagement yet contain various ethical issues as it makes life-death decisions during a war.
Taking this into account, delegates are encouraged to thoroughly research and be well informed in respect to their countries status and contribution in this topic. Following, acknowledge the potential benefits and serious risks associated with AWS and integration of AI in modern warfare. Finally, consider the need for regulation and

international cooperation, by coming up with resolutions to ensure that these new technologies employed in warfare remain under responsible control and aligned with humanitarian values of the UN.

Key Terms:

Term	Definition
Autonomous Weapon Systems (AWS)	Weapons that, once activated, can select and engage targets without further human intervention.
Artificial Intelligence (AI)	The simulation of human intelligence processes by machines, especially computer systems, including learning, reasoning, and self-correction.
Lethal Autonomous Weapons Systems (LAWS)	A subset of AWS designed to apply lethal force without human oversight.
International Humanitarian Law (IHL)	A set of rules that seek to limit the effects of armed conflict, protecting those not participating in hostilities and restricting the means and methods of warfare

General Overview:

Firstly, regarding the degrees of human control, AWS comes in three levels: Human-on-the-loop, in which machines function independently yet permit human operators to step in and stop operations as required; Human-in-the-loop systems carry out preprogrammed activities under the direct supervision and selection of humans; Fully autonomous, human-out-of-the-loop systems may choose and engage targets without human assistance once they are initiated.

From 2023 to 2030, the global artificial intelligence in the military field is projected to increase at a compound annual growth rate (CAGR) of 12.8%, from its 2022 valuation of USD 7,448.4 million, according to the Grand View Research website. There is a lot of discussion about the possible effects of AI on international security and military ethics as a result of its quick development in military applications. For example, the ability of AI to choose and hit targets without human intervention is exemplified by Autonomous Weapon Systems (AWS), which is advancing and revolutionising military operations.

Although these systems promise advancements in precision and operational efficiency yet raise serious questions about accountability, human oversight, and whether they can

truly follow international humanitarian principles like distinction between combatants and civilians. How can we guarantee these machines won't malfunction and make deadly errors in the chaos of warfare? It is arguable that humans will make more errors in comparison, however, the idea of an emotionless and merciless machine making life-death decisions is too much power to be held over humans. Moreover, taking into account the limited transparency and secrecy around AI research & development in the military, justified by the need to protect national security and safeguard sensitive capabilities means the world isn't fully aware of the potential dangers these technologies pose in unpredictable ways.

Going in further detail, the core issues and implications are:

- **Autonomy and Accountability:** These are AI driven systems, capable of selecting and engaging targets with minimal human input, which raises ethical concerns, such as compliance to international humanitarian law and accountability for unlawful actions.

- **Efficiency vs. Risks:** AWS offer operational advantages like speed, precision, and resilience, but the reliance on solely AI models makes them prone to errors in unpredictable scenarios. As seen from the following table, the disadvantages outweigh the advantages which is not a good sign in the long term:

Advantages	Disadvantages
Operational impacts: reduced tiredness and stress (humans have mental/emotional limitations), the capacity to work in hazardous situations, speed, agility, and maybe even greater accuracy (for instance, as compared to manual jobs).	**Sufficiency of technology**: whether AI technology can precisely recognise and target threats. Existing artificial intelligence systems are extremely fragile and have difficulty generalising or adapting to situations that deviate from a limited set of presumptions.
Impacts on casualties: removes fighters from the front lines of battle and lowers the danger. Would not attack in retribution, fear, or fury,make mistakes brought on by stress or exhaustion, and it would be more accurate, all of which might lower the number of civilian fatalities.	**Escalation and proliferation:** Conflicts may worsen if people are removed from the battlefield because they may become less reluctant to employ force. Autonomous systems accelerate speed and any unexpected activity might raise the likelihood of unintentional escalation and instability during a crisis.

	Accountability: If an autonomous system performs illegally or not as planned, it is unclear who, if anybody, is accountable for its activities.
	Cyber security: Systems that rely on computer software for support are susceptible to cyberattacks. Attackers could try to take over a system, interfere with daily operations, get private data, or alter training data.

The current landscape and challenge is that there is growing advocacy for a ban on fully autonomous weapons, but powerful nations with veto powers (e.g., the U.S., Russia, China) prioritise their military advantage and national security. Moreover, from the public opinion, a majority of global citizens oppose fully autonomous "killer robots," showing societal concerns about fully removing human oversight.

All things considered, given how quickly AI is developing and rising in every field, in this case, becoming vital in extending the use of physical battlefields into cyberwarfare and life-or-death decision-making, there is an increasing need to address these issues on a global scale. Given the United Nations' 2023 resolution on AWS suggesting a move towards possible regulatory frameworks, perhaps, international discussion is gaining up more momentum. Nevertheless these efforts might be outpaced by the speed of progress, which would complicate the dynamics of global security.

Timeline of Key Events:

DATE	EVENT
2023	• Latin American and Caribbean states adopt Belén Communiqué committing to work toward a new treaty on autonomous weapons systems.
2019	• The International Law Commission adopts draft principles on environmental protection in relation to armed conflict. • Treaty on the Prohibition of Nuclear Weapons adopted and opened for signature.

2016	• CCW's Fifth Review Conference establishes a Group of Governmental Experts on lethal autonomous weapons systems. • Artificial Intelligence (AI) researchers and roboticists issue an open letter calling for a ban on autonomous weapons.
2014	• Campaign to Stop Killer Robots publicly launched in London. • CCW states parties adopt mandate to discuss lethal autonomous weapons systems
2012	• Campaign to Stop Killer Robots formed in New York.

Major Parties Involved:

China

- **Stance:**

According to the statement by H.E. Ambassador SHEN Jian in 2023, China believes that all states should develop and apply AI technology in the military field in a prudent and responsible manner. Therefore, China supports tiered and categorised regulation to ensure that relevant weapon systems must be under human control.

Key Actions:

01. In **2016**, at the UN on **Certain Conventional Weapons** = China was the only one among the P5 countries to call for the *prohibition* and reinforcing the importance of a *binding protocol* to regulate these autonomous weapons.
02. In **2017**, China issued the new generation of **AI Development Plan** (AIDP), which became the fundamental base for China's development of autonomous weapons.

Israel

- **Stance:**

Israel agrees with the strategic advantages of integrating AI into military operations and is actively developing autonomous weapon systems (AWS). The Israeli Defense Forces (IDF) have utilised AI technologies to enhance operational efficiency, particularly in intelligence gathering and target identification. However, Israel has not publicly disclosed a comprehensive policy outlining the extent of human oversight in the deployment of these systems.

Key Actions:

01. In 2024, reports emerged that Israel employed an AI system named "Lavender" to identify and target Hamas operatives in Gaza.
02. Israel has been a significant exporter of autonomous systems, such as the Harpy drone, to various countries, including Chile, China, India, South Korea, and Turkey.

South Korea

- **Stance:** South Korea is investing in AI and autonomous technologies to increase its defence capabilities, particularly in response to regional threats. The nation emphasises the importance of maintaining human oversight over autonomous systems to ensure compliance with international humanitarian law.

Key Actions:

01. In 2024, South Korea announced plans to deploy a laser weapon system, Block-I, designed to neutralise North Korean drones.
02. In September 2024, South Korea hosted an international summit aimed at establishing responsible AI usage in the military.

Turkiye

- **Stance**: Turkey is actively developing and deploying autonomous weapon systems, viewing them as essential components of its defence modernization efforts. The country has not explicitly outlined policies regarding human control over these systems but continues to advance its capabilities in this domain.

Key Actions:

01. Turkey has developed and exported various autonomous systems, including drones like the Bayraktar TB2, which have been utilised in multiple conflict zones.
02. The nation is investing in AI research to enhance the autonomy and effectiveness of its military platforms, aiming to become a leader in defence technologies.

UK

- **Stance**: The United Kingdom supports the development of AI and autonomous systems for defence purposes, emphasising the necessity of human oversight to ensure ethical deployment. The UK advocates for international discussions to establish norms and regulations governing the use of autonomous weapons.

Key Actions:

01. In 2024, the UK participated in a joint exercise with the US and Australia, deploying AI-enabled drones to identify enemy targets.

02. The UK is actively involved in international forums discussing the regulation of autonomous weapons, advocating for frameworks that balance innovation with ethical considerations.

US

- **Stance**: The United States is at the forefront of developing and deploying autonomous weapon systems, viewing them as pivotal to maintaining military superiority. They emphasise the importance of human judgement in the use of force and support the development of guidelines to ensure ethical AI deployment in military contexts.

Key Actions:

01. In 2023, the US Department of Defense released a policy outlining the responsible use of AI in defence, emphasising the need for human oversight and accountability.
02. The US is investing heavily in AI research and development, aiming to integrate autonomous systems across various military platforms to enhance operational capabilities.

Russia

- **Stance**: Russia is actively pursuing the development of autonomous weapon systems, viewing them as essential to its military modernization efforts. The country has expressed scepticism towards international regulations that may limit its ability to develop and deploy such technologies.

Key Actions:

01. Russia has developed and tested various autonomous systems, including unmanned ground vehicles and drones, to enhance its military capabilities.
02. In international forums, Russia has opposed binding agreements that would restrict the development of autonomous weapons, advocating for the continuation of discussions under existing frameworks like the Convention on Certain Conventional Weapons (CCW).

Previous Attempts to Resolve the Issue:

First, within the CCW framework, the UN has been discussing the concerns brought up by Lethal Autonomous Weapon Systems (LAWS) since 2013. After informal expert discussions in 2014, 2015, and 2016, a Group of Governmental Experts (GGE) was formed in 2016. In 2018, the GGE restated the guiding principles of LAWS, emphasising the need of maintaining human accountability in military systems.

Moreover, the U.S. policy on autonomous weapons is outlined in the 2012 US Department of Defence Directive 3000.09, which requires that these systems be built to enable commanders and operators to employ force with the proper amount of human discretion.

Additionally, with the release of the political declaration on responsible military use of AI and autonomy in February 2023, a U.S.-led attempt aims to establish global norms for the use of AI and autonomous systems in the military. The declaration, which builds on U.S. policy on autonomous weapons, was approved by 51 countries in January 2024.

A prohibition on autonomous weapons was also demanded in 2015 and 2017 in open letters signed by robotics and AI professionals, including well-known individuals like Elon Musk and Stephen Hawking, who warned of the dangers of an AI arms race.

Lastly, a group of non-governmental organisations called "Stop Killer Robots" started a campaign in 2013 to promote a preventative ban on completely autonomous weaponry.

Possible Solutions:

1. **International Regulation:** Establishing an AI rulebook for war, a legally enforceable agreement that establishes specific limits on the application of AI in combat. This agreement would set restrictions on AI behaviour and specify the areas and methods for using autonomous weapons, despite difficulty in achieving international consensus due to disparate national agendas.

2. **Transparency Measures**: One of the main issues with AWS is its secrecy, as many nations create these systems behind closed doors, it is simple for distrust to grow. Given that each nation has the right to privacy, countries will not be compelled to expose all of their tech secrets or provide detailed information on their AWS programs. Nonetheless, there should be minimum rules for sufficient information to be included in the worldwide database reports to avoid misconceptions and demonstrate to the rest of the world their dedication to responsible growth.

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