**Impact of Modern and Emerging Technologies in the Military Field on Human Rights**

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**Introduction**

New technologies related to the manufacture of modern weapons systems have important implications for human rights, especially the right to life and extrajudicial killing, and therefore there is no reason not to include considerations related to human rights law and international humanitarian law in the design and operation of this new technology. Since considerations related to human rights cannot be addressed separately and in isolation from each other, international institutions have called on the international community to urgently address the legal, political, ethical and moral repercussions related to the development of weapons systems with modern technologies, especially those that are autonomous and autonomous. It also appealed to international institutions to establish a legal framework for the autonomous weapons system and to conduct a legal review of the weapons.

Developers in countries' militaries and the defense industry are working to develop a completely autonomous capability based on technological advances in the field of artificial intelligence to enable unmanned aerial vehicles to make and implement complex decisions that include identifying human targets and being able to kill them. Therefore, it is currently difficult to reject the emerging technology completely, and it is logical not to be led into the absolute rejection of its products, but rather to place it within the framework of the law by preparing autonomous weapons to respect the controls for applying the rules of the use of force, achieving the requirements of legitimate defense and respecting human rights, and to also take into account the principles of distinction and proportionality, taking precautions during the attack, and not causing harm. The pain is unjustified, in addition to respecting the spirit of international law represented in all international agreements regulating the use of weapons. Therefore, it has become necessary to impose an ethical framework for the development of autonomous weapons that ensures that they remain within the framework of the law and under the control of their human developers.

Within the framework of Maat for Peace, Development and Human Rights’ interest in issues that raise problems related to human rights, Maat presents this intervention to contribute to the study prepared by the Advisory Committee on Human Rights pursuant to Resolution 51/22 regarding the repercussions of modern and emerging technology in the military field on human rights.

**First: International legal frameworks such as international human rights law and international humanitarian law that currently apply to the design, development, deployment and use of new and emerging military technologies in the military field (NTMD).**

Man began to regulate means of combat in the year 1868 with the Petersburg Declaration in order to prohibit the use of certain shells in times of war. This declaration prohibited the use of a type of explosive shells weighing less than 400 grams. This declaration not only regulated the use of munitions, but also created two very important legal rules: not to cause damage beyond what is necessary to weaken the enemy and not to use weapons that cause excessive and unjustified pain. This phrase regulated the means and methods of war, leading to the Hague Conventions of 1899, which regulated several means and methods.

Therefore, modern weapons and modern technologies in the military field, especially autonomous weapons, enjoy complete independence in terms of acquiring targets and making the decision to engage the target. What is more dangerous than the autonomy of these weapons is the machine’s ability to adapt and learn to situations through artificial intelligence and other technological complexities, which makes the machine itself learn and adapt to the surrounding environment. In addition, there is automatic control. Once the machine detects the target, control does not return to the human to stop the attack. Therefore, it is not known who made the decision, who monitored, who carried out the targeting, and who gave the order. Consequently, responsibility is lost in these episodes, where the machine or “virtual soldier” is the only responsible party. This prompted it to be called a deadly weapon. Lethality is the deprivation of absolute humanity and thus deprivation of the goal and means of international humanitarian law, which is humanity[[1]](#footnote-1).

This creates an imbalance with the application of Article 36 of Additional Protocol I to the Geneva Conventions (1977), which deals with “new weapons” and stipulates that “In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.” That is, this article obligates states to be in the process of determining whether this behavior, this weapon, or this method violates international humanitarian law. This is the first problem in the matter.

It is clear that Article 36 of Protocol I obliges States to examine the compatibility between international law and new weapons that they intend to use. However, legal reviews cannot be discussed without addressing Article 36 of Additional Protocol I. As it constitute an important base, and its effectiveness can only be guaranteed by defining more specific standards related to lethal autonomous weapons systems as standards can constitute an important tool for transparency, there have been calls to establish specific standards for lethal autonomous weapons systems and a new standard framework[[2]](#footnote-2).

Article 36 of Additional Protocol I to the 1977 Geneva Conventions also coined the phrase “meaningful human control” to describe new weapons systems. Experts have identified guidelines for delegates at the 2016 CCW Meeting of Experts on Lethal Autonomous Weapons Systems - such as predictable, reliable and transparent technology, accurate user information, a capacity for timely human action and intervention, human control during attacks[[3]](#footnote-3).

About **the Convention on Certain Conventional Weapons, known as the Inhumane Weapons Convention**, it did not consider a specific weapon to be excessively harmful and have indiscriminate effects, but rather created general principles. So, the prohibitions of this agreement apply to any weapon that violates the principles on which the agreement was based? Hence, the Inhumane Weapons Convention was considered a document to implement the Protocol regarding methods and means of war and the protection of civilians against the effects of hostilities, based on the agreement’s inclusion of four paragraphs that represent restrictions on weapons in general, which are: the general principle related to protecting the civilian population from the effects of hostilities.

1. The general principle that the right of parties to an armed conflict to choose ways and means of combat is not absolute
2. Prohibiting resorting to the use of weapons, missiles, and war equipment of the kind that cause excessive and unjustified pain.
3. Prohibiting the use of methods and means of combat that cause widespread, long-term and severe damage to the environment

These preamble principles are therefore general principles applicable to any weapon of any kind, even if it is unconventional. Hence, there is a necessity to devise the application of the rules of protection granted by international humanitarian law to autonomous weapons, in a way that cannot be said to be weapons that are not restricted.

**Second: What are the fundamental human rights challenges posed by NTMD including artificial intelligence (AI), autonomous decision systems (ADS), augmented decision support systems, autonomous weapons systems (AWS), human augmentation technologies, and dual use of technologies?**

New technologies in the military, especially fully autonomous weapons, raise serious ethical and legal concerns because they can select and engage their targets without real human control. There are considerable doubts that fully autonomous weapons will be able to replicate human rule and comply with legal requirements to distinguish between civilian and military targets. Other potential threats include increased arms races and the unchecked use of these weapons by armed forces without proper compliance with legal regulations.

**A number of challenges have emerged related to the violations that may be committed by these weapons independent of any human intervention, including: -**

* **Arranging criminal responsibility and accountability**

The current legal system for determining international criminal liability is inadequate when it comes to the use of fully autonomous weapons systems. Even if such machines were granted a virtual legal identity and made responsible for their actions, this would not be obedient given the specificity of accountability when committing war crimes. Two elements must be present. They are criminal act (Actus reus) and criminal intent (Mens rea). In other words, the direct responsibility or responsibility that falls on the person who pulls the trigger and fires will not be achieved unless three conditions are met, which are: -

* I: Relating to the criminal intent of the robot.
* II: Modifying the personal scope of international criminal tribunals and legalizing them.
* III: Punishing the perpetrator of the crime or the robot who lacks feeling, awareness, and remorse for the actions.

Indirect responsibility, also known as the responsibility of a military commander, involves holding them accountable for the actions of those under their command due to their position of leadership and actual control. However, enforcing this responsibility can be challenging as it requires meeting four conditions: the occurrence of the crime with all its elements, including the moral aspect; actual knowledge of the crime happening, which includes being aware of what is about to occur; taking steps to prevent it; and determining how to punish the robot involved. This may not be possible in completely autonomous systems, especially since they exclude actual control and the physical ability to prevent criminal behavior by canceling the attack.

Civil liability, specifically about manufacturers and programmers, presents challenges in its application as victims must provide evidence demonstrating errors, damages, and the causal link between robot operation and programming. They must also establish negligence in fulfilling risk management responsibilities, whether it relates to expected or unexpected accidents. However, various technical and procedural obstacles further complicate these cases. The limitations of enforcing civil liability are compounded by governments that own such technology granting immunity to their military personnel and contractors from civil lawsuits. For instance, American law prohibited heirs of Flight 655 victims from suing the government due to the fighters' political immunity.

For this purpose, non-governmental organizations in particular call for meaningful human control over arms systems, which means taking the necessary measures that will ensure carrying out tasks in accordance with the commander’s intent, maintaining reliability, transparency, predictability of the desired result, and the ability to intervene within the critical functions of selecting ad sharing targets in the appropriate time, understanding the paths, and respecting the legal restrictions, which ultimately allows the commander to be held responsible for any violation that may occur.[[4]](#footnote-4)

The autonomy of lethal autonomous arms systems makes it impossible to hold anyone accountable for unlawful killings. If a robot acts autonomously, then tracing accountability to another agent seems morally objectionable and legally impractical, however, it would also be unjust not to punish unlawful killing. This dilemma is the so-called “responsibility gap”, where no one can be held responsible for unlawful killings, and unlawful acts of war remain unchecked,[[5]](#footnote-5) especially in light of the difficulty that victims will face in suing the user or the manufacturer because their lawsuits are likely to be expensive, time-consuming, and depend on the assistance of experts who can deal with the complex legal and technical issues due to the use of fully autonomous arms. The legal barriers to civil accountability are therefore more imposing than the practical ones, as the complexity of an autonomous robot's software would make it difficult to prove that it suffers from a manufacturing defect, i.e. a defect in production that prevents it from working as designed.

* **Conflict with Many Principles of International Law, Such as:**
* **Principle of Distinction:** According to international humanitarian law, every individual participating in an armed attack is obligated to follow the principle of distinction. In particular, civilians must never be targeted, and it is unlawful not to take feasible precautions to protect civilians who may be injured or killed accidentally as a result of a military attack, as failure to comply with these legal requirements constitutes a violation of the law of war and members of the armed forces are individually criminally liable for failure to properly follow the principle of distinction.
* **Principle of Proportionality:** In accordance with international humanitarian law, commanders must refrain from launching attacks that cause loss of civilian life, injury to civilians, or damage to civilian objects, or cause a combination of such loss and damage that would exceed the tangible and direct military advantage expected to result from that attack (Additional Protocol I, Article 51), the most humanitarian aspect of this decision is the balance between tangible military advantage and potential collateral damage. For the belief that international humanitarian law requires the best humanitarian decision, the humanitarian aspect of that decision is very important, even if the results of some proportionality decisions have been severely criticized.

**Third: Gaps That Could Cause Human Rights Violations and Potential Risks Related to the Use of NTMD and Autonomous Arms?**

Recent technological developments increase the ability of these systems to distinguish between some categories of military targets and civilian targets. However, these developments have also produced arms and combat systems whose degree of discrimination they will be able to achieve in the future cannot be predicted, and the central challenge for these systems will remain how to ensure that they can be used in a way that allows discrimination between military targets and civilian objects as required under international humanitarian law. These technological developments include autonomous or fully autonomous arms.

These systems are fundamentally problematic and pose profound ethical, legal, and political challenges. Given the tremendous technological progress in the fields of robotic arms systems, miniaturization and artificial intelligence, the historical framework for adopting the appropriate legal and operational framework to regulate this issue is diminishing very quickly. With regard to lethal arms, they constitute a source of serious concern because the development and abolition of the use of arms that do not require human intervention raises many risks and loopholes that have led to the division of opinions between supporters of completely banning them and others who are opposed to this ban. Therefore, it is urgent to consider very seriously the threat posed by this new category of arms.[[6]](#footnote-6)

**Opposition of the ban believe** that fully autonomous or autonomous arms, also known as killer robots, would be able to identify and engage targets without meaningful human oversight. These fully autonomous arms will be able to meet the standards of international humanitarian law, including the rules of distinction, proportionality and military necessity. The advanced sensors and artificial intelligence used by these systems means that they are more likely to outperform a human soldier in aiming at military targets correctly and avoiding unintentional civilian casualties. They also believe that autonomous arms systems will not be affected by negative human emotions such as fear, anger, and the desire for revenge. The autonomous arm would also have no positive human emotions such as compassion, nor any judgment or experience that would require, as humans do, a sound appreciation of any real surrender attempt or an assessment of any concrete, direct, and expected military advantage from a particular attack. Moreover, the deployment of these arms will demonstrate a paradigm shift and a major qualitative change in the conduct of combat operations. Finally, the question remains whether the dictates of public conscience can allow machines to make life-and-death decisions and apply lethal force without human control.[[7]](#footnote-7)

**Those who support banning these arms** believe that the use of these arms creates many loopholes and risks, as allowing machines to make life-or-death decisions is an assault on human dignity, and is likely to lead to devastating violations of the laws of war and human rights. The existence of fully autonomous arms would also make it possible for them to be acquired by repressive regimes or non-state armed groups that might ignore restrictions or bypass any programming designed to regulate robot behavior. They can use arms in deliberate or indiscriminate attacks against their own people or civilians in other countries with horrific consequences.

Absolute, legally binding ban on fully autonomous arms would provide several distinct advantages over formal or informal restrictions, this ban would maximize the protection of civilians in conflict because it would be more comprehensive than the organization. The ban will be more effective because it will prohibit the presence of arms and its implementation is easier, and may have a strong stigmatizing effect, creating a new, widely recognized norm that affects even those who have not joined the treaty. Finally, the ban would avoid other problems related to autonomous arms, such as moral objections and the possibility of an arms race.

**Fourth: Maat’s Contributions in Modern Technology in the military Field and Autonomous Arms**

**Maat for Peace, Development and Human Rights** has a precedent in modern technology in the military field and autonomous arms, as Maat participated in the meeting of the High Contracting Parties to the Convention on Conventional Weapons (CCW), which was held from November 14 to 16, 2022, and presented an oral intervention that indicated that autonomous arms systems pose a range of ethical, legal, and security challenges, and that these machines dehumanize armed violence and threaten human dignity.

Maat also stressed that although lethal autonomous arms systems still appear to be in their beginning, time is running out to prevent their uncontrolled spread. Once one country uses these arms for its own military gain, others may have no choice but to follow suit., so it is important to decommission killer robots before taking over the battlefield. Therefore, the best hope for confronting this dilemma is to promote discussions in international negotiations that expose major military powers to the significant risks posed by lethal autonomous arms systems.

In July 2023, Maat also launched the **“Keep 'Em Safe” Gun Safety** Campaign, which aims, among other things, to mobilize the efforts of international disarmament mechanisms and organizations concerned with conventional arms to raise awareness of the danger of the illicit transfer of arms, including arms that rely on the most advanced technology and that could be used in serious and dangerous violations to human rights.

Today we face a new type of arms to which the existing legal texts do not apply. Therefore, we need to draft new texts because the international community is interested in regulating the use of this arm. Also, before we reach the point where lethal machines are visible or widespread on battlefields, we can develop a protocol attached to the Convention on Certain Conventional Weapons (CCW) to regulate the work of these robots, or these arms can be regulated in a manner consistent with the rules of international humanitarian law.

Hence, Maat emphasizes and recalls that the CCW is the appropriate international forum in this regard, which combines legal and military expertise and the involvement of the private sector and civil society. The CCW must remain responsive to rapid developments in arms technology and be able to address them appropriately and ensure that international legal frameworks remain appropriate.

**Finally, Maat presents several recommendations centered around the need to anticipate the accountability gap that may arise if fully autonomous arms are manufactured and deployed, and work on the following: -**

* Prohibit the development, production and use of fully autonomous arms through a legally binding international instrument.
* Adopt national laws and policies prohibiting the development, production, and use of fully autonomous weapons.
* Regulations must be established for arms use with some autonomy, especially for military attack drones, which cause a large number of civilian casualties. These types of arms are completely contrary to international humanitarian law.
* Progress on legally binding and multilaterally agreed initiatives to prevent the militarization of cyberspace, outer space and lethal autonomous arms such as attack drones.
* We call on producing countries to stop opposing the security and well-being of citizens all over the world on behalf of their own interests in the military-industrial complex.
* The international community, in its various regional and global forums, must continue to work more deeply on the implications of international humanitarian law, even as it stipulates the prohibition of these types of arms.
* Involving civil society organizations and allowing them to participate in efforts to stop arms development.
* The necessity of agreeing on not making any civilian target or any military target located within populated areas a target for an attack by autonomous arms, and prohibiting attacks with these arms from other than the air when the military target is clearly separated from the civilian population.
* Efforts to publicize the potentially catastrophic humanitarian consequences of autonomous arms must be supported and help ensure that full automation of these arms is prevented.

1. Ziad Rizkallah, On whom does the virtual soldier shoot, Al-Insani Magazine, March 30, 2020, link, <https://blogs.icrc.org/alinsani/2020/03/30/3667/> [↑](#footnote-ref-1)
2. - See Article 36 of the First Additional Protocol to the 1977 Geneva Conventions, link, <https://www.icrc.org/ar/doc/resources/documents/misc/5ntccf.htm> [↑](#footnote-ref-2)
3. Ariel Conn, The Problem of Defining Autonomous Weapons, Future Of Life, 30 November 2016,link, <https://futureoflife.org/2016/11/30/problem-defining-autonomous-weapons/> [↑](#footnote-ref-3)
4. When the Machine Wages War... Killer Robots and the Need for Meaningful Human Control, March 25, 2019, link, <https://blogs.icrc.org/alinsani/2019/03/25/2768/> [↑](#footnote-ref-4)
5. Matthew Anzarouth, Robots that Kill: The Case for Banning Lethal Autonomous Weapon Systems, Harvard Politics Review, 2 December 2021, link, <https://harvardpolitics.com/robots-that-kill-the-case-for-banning-lethal-autonomous-weapon-systems/> [↑](#footnote-ref-5)
6. High-level concerns about killer robots at UN, Stop Killer Robots, 2019, link, <https://bit.ly/46U9ouM> [↑](#footnote-ref-6)
7. Autonomous arms: States must confront key humanitarian and ethical challenges, International Committee of the Red Cross, link, [https://www.icrc.org/ar/doc/resources/documents/faq/q-and-a-autonomous. -weapons.htm](https://www.icrc.org/ar/doc/resources/documents/faq/q-and-a-autonomous.%20-weapons.htm) [↑](#footnote-ref-7)