

A Diplomat's Guide to Autonomous Weapons Systems





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The Basics

What are autonomous weapons?

Autonomous weapons systems select and apply force to targets without human control.¹

Unlike unmanned military drones, where a human operator remotely decides to take a life, autonomous weapons use algorithms to make this decision independently.²

Autonomous weapons are pre-programmed to recognize and kill a specific "target profile" based on sensor data, such as facial recognition.³

While there are reports of autonomous weapons being deployed in recent conflicts,⁴ independently verified accounts are limited. Conversely, there are several known manufacturers of these weapons, including:

- Anduril (US)
- Norinco (China)
- STM (Turkey)
- Elbit Systems (Israel)
- Kalashnikov Group (Russia)

We maintain a database of autonomous weapons currently being developed and sold, and their manufacturers, on the website autonomousweaponswatch.org

Meanwhile, in Ukraine...

In July 2024, the New York Times reported that autonomous weapons are being actively developed and deployed in the ongoing Russo-Ukrainian War. The low-cost and widespread availability of components has allowed local startups to rapidly develop drones that autonomously track and attack targets.

Why are they problematic?

- Accountability gap: Autonomous weapons may kill more or different people than intended. Judges may therefore have difficulty assigning responsibility for war crimes.
- Global instability: Autonomous weapons are usually trained on classified data and may interact with enemy systems in unexpected ways.
 An unexpected movement by an enemy system can therefore cause "flash wars" (unintended escalation) without human override. Moreover, low production costs make them attractive to non-state armed groups as tools for genocides. They can also make it significantly easier to execute targeted killings of military or political leaders.
- Ethics: Key religious leaders, including the Pope, argue that machines should not be allowed to take life and death decisions. When polled, the vast majority of people reject this practice as unethical.
- Vulnerability to cyberattack: Autonomous weapons are uniquely susceptible to cyber-attacks, creating new ways for hackers to infiltrate and manipulate military operations.⁵
- Unpredictability: Autonomous weapons operate based on environmental stimuli, making their behaviour uncontrollable and unpredictable.⁶

What can be done?

In October 2023, the UN Secretary-General and ICRC President called upon states to negotiate a legally binding treaty on autonomous weapons by 2026.

A treaty would likely take the form of a "two tier approach":

- Prohibiting legally or ethically unacceptable systems, such as those which operate without meaningful human control or that target people.
- Regulating all other systems with time, spatial and geographical limits.

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Myths and Misconceptions

1. We must first agree on a definition before starting negotiations.

Not necessarily. Negotiations on the Cluster Munitions Convention were opened before a definition was agreed upon and the definition was left until the end of the negotiation process. The Biological Weapons Convention was signed despite disagreement on the definition of weapons-grade agents and toxins. Insisting on the agreement of a definition has become a red herring for some states who don't want to see action on a legally binding instrument.

2. Geopolitical tensions are too great to attempt negotiations.

Political tensions are an ever-present reality, but many seminal treaties have been negotiated during periods of intensive geopolitical competition. At the height of the Cold War, for example, states agreed on both the Nuclear Non-Proliferation Treaty and the Biological Weapons Convention.⁹ ¹⁰ Ongoing conflicts provide even more impetus to strengthen the protection of civilians.

3. The CCW is the appropriate forum.

The Convention on Certain Conventional Weapons (CCW) has 127 signatories, a cohort which excludes 66 UN member states. The CCW also limits discussion to the conduct of war between states (international humanitarian law). The forum thus largely ignores ethical concerns, human rights violations, and proliferation to non-state armed groups or the way in which these weapons can facilitate future genocides. Although there has been progress on developing common understandings, progress has long been blocked by certain states taking advantage of the CCW's consensus requirements.

The degree to which the CCW is <u>the</u>, as opposed to <u>an</u>, appropriate forum is therefore questionable at best.

4. Autonomous weapons will lead to fewer civilian deaths.

Due to the speed and scale at which autonomous weapons systems can be deployed, the risk of mass destruction is high. The systems' autonomy means that a single individual can cause mass destruction. In its wargame models, American thinktank RAND found that "the speed of autonomous systems did lead to inadvertent escalation". ¹¹

5. Autonomous weapons do not currently abide by international humanitarian law, but in the future they might.

Autonomous weapons will likely become increasingly sophisticated. On the one hand, this may aid compliance with international humanitarian law after a potentially lengthy transition period of illegal and indiscriminate attacks. On the other hand, as systems become better at distinguishing between humans they will also become better tools for the perpetuation of genocide and targeted killings.

History of Diplomatic Talks

Journey to a treaty

May 2024	Austria hosts the first global conference on autonomous weapons, affirming a "strong commitment to work with urgency" towards an international legal instrument.	Feb 2023	Costa Rica hosts the Latin American and the Caribbean conference, which produces the Belén Communiqué calling for urgent international regulations.
Apr 2024	Sierra Leone hosts the ECOWAS conference, resulting in the Freetown Communiqué which recognises the need to strengthen existing laws with a new legally binding instrument.	Dec 2022	The sixth review conference of the CCW fails to reach agreement on binding controls for lethal autonomous weapons. States initiate regional meetings outside CCW.
Dec 2023	At the Manila Meeting, the Philippines calls on Indo-Pacific voices to address autonomous weapons systems.	Oct 2022	The UN Human Rights Council adopts a resolution on the human rights implications of new and emerging technologies in the military domain.
Nov 2023	The first-ever UN General Assembly resolution on autonomous weapons is adopted, with 164 states in favour, 5 against, and 8 abstentions. ^a	Nov 2019	11 'Guiding Principles' are adopted by CCW states.
Oct 2023	UN Secretary General and ICRC President jointly call for States to negotiate a treaty by 2026.	May 2014	CCW discussions begin with the Meeting of Experts on Lethal Autonomous Weapons Systems.
Sep 2023	CARICOM states sign the CARICOM Declaration calling for the "urgent pursuit" of a legally binding instrument.	Nov 2013	States agree on a new mandate to open discussions on lethal autonomous weapons proposed by French Ambassador Jean-Hugues Simon-Michel at a CCW meeting.
Apr 2023	At the Luxembourg Autonomous Weapons Systems Conference, international experts emphasise the need for meaningful human control.	Apr 2013	UN Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, Christof Heyns, submits a report on 'Lethal autonomous robotics' to the Human Rights Council,
Mar 2023	At the 28th Ibero-American Summit, countries endorse a special communiqué addressing the social and humanitarian effects of autonomous weapons.		recommending the establishment of national moratoriums and a high level panel on the subject.

a The five states who voted against resolution L.56 were Belarus, India, Mali, Niger, and the Russian Federation.

Political Landscape

State support for starting negotiations

The overwhelming majority of states (119) support the negotiation of a legally binding instrument. There are 59 further states whose position is undeclared. A few notable positions are highlighted below.



Africa

- The African Group Supports supports launching negotiations on a legally-binding instrument "at the earliest" and has stated it is "inhumane, abhorrent, repugnant, and against public conscience for humans to give up control to machines."
- In a 2021 joint statement at the CCW, Nigeria Supports and ten other states called for a legally binding instrument to prohibit autonomous weapons, with the aim of upholding human dignity and preventing international instability.¹³
- Sierra Leone Supports hosted a regional conference in April 2024 which affirmed West-African support for negotiations of a legally-binding instrument.¹⁴
- Egypt Supports was the third country in the world to call for a ban on autonomous weapons¹⁵ and has called the development of a legally binding instrument "urgent". 16
- South Africa Supports has warned against settling for an instrument which "is
 of a political nature only" without the prospect of reaching the level of a
 legally binding instrument.¹⁷

Europe

- Austria Supports hosted the first global conference on autonomous weapons, with 144 states in attendance. Its Foreign Ministry declared that the "red line of allowing algorithms to decide over life and death must not be crossed."18
- In a letter to the Dutch Parliament Supports, the Foreign Ministry stated that it will pursue an international effort to ban autonomous weapons, such as through a CCW protocol.¹⁹
- Belgium supports has committed to "continue efforts within the CCW" to achieve consensus in support of a legally binding instrument.²⁰
- In its 2021 coalition agreement, Germany's Supports 'traffic light' coalition calls for actively pushing for the rejection of lethal autonomous weapons which are completely "beyond human control" through "strengthened" international control regimes.²¹
- The current Norwegian Supports government platform commits Norway to taking the necessary initiatives to regulate the development of autonomous weapons.²²
- At the 2023 CCW GGE on lethal autonomous weapons, France Undeclared expressed readiness to negotiate measures without defining the final instrument.²³

Latin America and the Caribbean

- In February 2023, over 30 Latin American and Caribbean states Supports
 adopted the Belén Communiqué which calls for the urgent negotiation of a
 legally binding instrument.
- In September 2023, the CARICOM declaration Supports committed the Community's fifteen member states to collaborate on negotiating an international legally binding instrument on autonomous weapons.
- In 2021, Brazil, Mexico, and Chile Supports issued a joint statement warning that, "without meaningful human control, the development, deployment, and use of autonomous weapons systems that can delegate decisions on duplication and execution of force to algorithms would ... violate the principle of human dignity."²⁴

North America

Canada Undeclared has not yet declared its position but a 2019 "mandate letter" from the Prime Minister to the Foreign Minister declared an intent to promote international efforts to ban the development and use of autonomous weapons.²⁵

Asia

- In 2023, Pakistan Supports stated, "there is a clear case for developing an international legal instrument envisaging prohibitions and regulations on the development, deployment and use' of autonomous weapons."
- In 2022, Türkiye Supports stated "that the development and use of autonomous weapons systems which does not have meaningful human control are undesirable and conflict with international humanitarian law. Humans (commanders & operators) have to be involved in the decision loop and bear the ultimate responsibility when dealing with the decision of life and death."27
- The Philippines Supports hosted the 2023 Manila Meeting which amplified concerns about autonomous weapons voiced by Indo-Pacific nations, including the risk of "armed escalation of existing conflict." In 2021, the Philippines called for a legally-binding instrument on autonomous weapons to be negotiated within the CCW.
- Sri Lanka's Supports Foreign Secretary spoke at Austria's international conference, reaffirming Sri Lanka's support for a legally binding instrument.³⁰
- At the 2024 Austrian conference, Malaysia Undeclared stated that the negative consequences of using autonomous weapons "far exceed" any "legitimate military objectives" and called on the international community to maintain focus on developing a legal framework to regulate this technology.³¹
- Indonesia Supports has stated, "We believe that machines should not kill people and therefore reject the automation of killing." Representing the Non-Aligned Movement, which comprises 125 states, Indonesia stated, that there is an "urgent need to pursue a legally binding instrument."
- China Supports has said that it supports "the negotiation of a legally binding instrument to prohibit fully autonomous weapons systems if and when conditions are ripe." It has also stated that the "treaty framework is the right vessel" to deal with issues posed by autonomous weapons.³⁴

Oceania

 In 2021, Aotearoa New Zealand Supports adopted a policy to "advocate for" a legally binding instrument while recognising that "a range of controls may be required" for different levels of autonomy.³⁵

State opposition to starting negotiations

A small group of states oppose the development of new international law: Australia, Estonia, India, Israel, Japan, Poland, South Korea, Russia, the United Kingdom, and the United States. A few notable positions are highlighted below.

- India Opposes has stated that a legally binding instrument would be premature³⁶ and that it does not wish to widen the "technology gap" between states³⁷. India has also begun investing in the development of autonomous weapons, including through the manufacturer Adani Defense and Aerospace.³⁸
- Israel Opposes believes that there are "operational advantages" to using autonomous weapons and believes existing international humanitarian law provides an adequate framework.³⁹ In parallel, Israel is actively developing, testing, producing, and using autonomous weapons systems.⁴⁰
- Russia Opposes has firmly rejected calls to negotiate a new international treaty on autonomous weapons, as well as any "moratorium on development" of such weapons.⁴² Reportedly, Russian manufacturer Kalashnikov has been developing autonomous weapons systems and Russia has employed such weapons in recent conflict.⁴³
- In 2021, the United States Opposes said that it believes international humanitarian law and the national efforts to implement it are sufficient to address the challenges of autonomous weapons. American companies, such as Anduril Industries, Inc., manufacture autonomous weapons. The US Department of Defense also launched the Replicator initiative, a programme focused on quickly deploying thousands of autonomous weapons systems across multiple military domains by August 2025.

Relevant Forums

Autonomous weapons are discussed in various international bodies. The most prominent ones are listed below, in order of when they first took up the issue.

United Nations Human Rights Council (HRC)

As early as 2013, the United Nations Special Rapporteur on Extrajudicial Killings called for national moratoriums in his report to the Human Rights Council. The Council is comprised of 47 seats which states occupy on a three-year rotation.

- In 2013, 30 states spoke out in the Council against autonomous weapons, many calling for a ban.
- In 2022, the Council passed a resolution on human rights issues related to emerging technologies in the military domain.
- In 2024, it produced a report recommending specific prohibitions on types of autonomous weapons which pose particular threats to human rights.

Convention on Certain Conventional Weapons (CCW)

As early as 2014, members of the CCW adopted a mandate to address lethal autonomous weapons. As a forum, the CCW has focused exclusively on issues of international humanitarian law.

- The main achievement of the CCW has been the adoption, in 2019, of 11
 Guiding Principles on lethal autonomous weapons systems.
- With its requirement for consensus, the CCW is often blocked from reaching agreement by states with vested interests (eg. Russia, United States).

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO began formally discussing artificial intelligence, including military applications, around 2019, as part of its broader efforts to address the ethical implications of emerging technologies.

- In 2021, all 193 member states adopted a comprehensive ethical framework for Al, including guidelines on the use of autonomous weapons.
- In particular, recommendation 26 notes: "in scenarios where decisions (...) may involve life and death decisions, final human determination should apply."

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Responsible AI in the Military Domain (REAIM)

REAIM emerged from a Dutch parliamentary resolution and has since expanded its scope to include discussions on other issues related to AI in the military (eg. surveillance).

- 60 countries participated in REAIM 2023, the culmination of which was a (non-binding) "call to action".
- However, the forum only facilitates discussions about autonomous weapons without a view to concrete restrictions, with the "call to action" not mentioning the development of legally-binding rules.⁴⁶
- The forum has also provided a platform for the United States to introduce its
 "Political Declaration", the commitments within which are considered to be
 among the weakest out of all the non-binding commitments proposed to date.⁴⁷

United Nations Security Council (UNSC)

In July 2023, under the chairmanship of the United Kingdom, the Security Council held its first session about the threats of AI to global peace.

- At the meeting, representatives of various Security Council members and invited experts called for the maintenance of human oversight over military applications of AI.
- The UN Secretary General briefed the council and welcomed proposals for the creation of a dedicated UN agency to monitor AI technology, including its military applications.

United Nations General Assembly (UNGA)

Recently, attention has shifted to the UN General Assembly as the most probable forum where a legally binding instrument could emerge.

- The UNGA is an inclusive forum with all UN member states able to participate.
- A General Assembly resolution on autonomous weapons was passed in 2023 with 164 states in favour. Another UN resolution is likely to be adopted in 2024.

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Declarations, Communiqués, Statements

How do they compare?

- The Austrian Chair's Summary at the global conference affirms its "strong commitment to work with urgency and with all interested stakeholders for an international legal instrument to regulate autonomous weapons."
- The ECOWAS conference's Freetown Communiqué called for the establishment of "new legally binding rules" which will strengthen existing governance mechanisms.
- UNGA Resolution 78/241 requests views on "ways to address" challenges and concerns that autonomous weapons "raise from humanitarian, legal, security, technological and ethical perspectives and on the role of humans in the use of force."
- The CARICOM Declaration calls for the "urgent pursuit of an international legally binding instrument, incorporating prohibitions and regulations on autonomous weapons systems."
- The 28th Ibero-American Summit's Special Communiqué calls for collaboration on the negotiation of a legally binding instrument.
- The Latin American and the Caribbean Conference's Belén Communiqué calls for the "urgent negotiation" of a legally binding instrument that establishes prohibitions and regulations regarding autonomy in weapons systems.



Vienna Conference on Autonomous Weapons Systems

ECOWAS Freetown Conference on Autonomous 2024, Austria



Weapons 2024, Sierra Leone







Latin American & the Caribbean Regional Conference on Autonomous Weapons 2023, Costa Rica

- The US Political Declaration at REAIM 2023 states that military use of Al "should be ethical, responsible, and enhance international security." However, the Declaration fails to recommend any prohibitions on autonomous weapons, such as those which cannot be used with human control.
- The REAIM 2023 Call to Action invites states to "develop national" frameworks, strategies and principles on responsible AI in the military domain," but it also fails to specify any limitations on development and use of autonomous weapons.
- The UNGA Joint Statement emphasizes the need for internationally agreed rules and limits - including a combination of prohibitions and regulations on autonomous weapons systems.

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Frequently Asked Questions

Answers to some common questions on the topic of autonomous weapons:

1. Shouldn't we give the Convention on Certain Conventional Weapons (CCW) the chance to fulfil its mandate?

States opposed to opening negotiations have repeatedly seized on new CCW mandates as a reason to keep talking. After the failed 2022 Review Conference, however, states have initiated both regional conferences and the 2023 General Assembly resolution to break the recurring stalemate. After all, the CCW has discussed autonomous weapons since 2014 and has not agreed on any new international law for the past 20 years.

2. Do autonomous weapons already exist?

Yes. As Nature reported this year, "autonomous weapons guided by artificial intelligence are already in use." Their use is often difficult to identify, but evidence points towards several examples of their appearance in recent conflicts. The manufacturing, buying, and selling, of autonomous weapons remains well-documented. An overview can be found on autonomousweaponswatch.org.

3. Will we ever reach agreement on this issue?

With 119 states in favour of a legally binding instrument, agreement on the issue of autonomous weapons has never been higher. Given this groundswell of support and the recent steps towards discussing the issue in the General Assembly, the question no longer seems to be if but rather when an agreement will be reached.

4. Would a treaty be ineffective if the countries using autonomous weapons don't join?

Treaties have an impact beyond the signatory countries. For example, the U.S., Russia and China have not ratified the 1997 Landmine Treaty but have nonetheless adopted policies to limit the use and production of antipersonnel mines.

Given the proliferation risk to non-state armed groups, a treaty can also have a positive and immediate impact on regional stability even if a global power does not yet sign on from the start. Unlike nuclear weapons, autonomous weapons are available to all and the prevention of regional proliferation is achievable by a treaty.

A new global norm could be enshrined in a treaty signed by the vast majority of nations and supplemented by informal agreement between, for example, the US and China to abide by core principles. Furthermore, some states (such as Germany and the Netherlands) which have been adjacent to, or have had some involvement in, the production and use of autonomous weapons have expressed support for the negotiation of legally binding rules.

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A clickable list of citations is available at futureoflife.org/aws-guide.

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