



Updating the Convention on Certain Conventional Weapons

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Introduction

How can the international community deal with the enormous problems rapid technological change creates for international security? In recent years UN Member States have made important steps forward through new agreements like the *Arms Trade Treaty* of 2013 and the *Treaty Prohibiting Nuclear Weapons* of 2017.

Old agreements also are essential part of the fabric of global security. *The Convention on Certain Conventional Weapons* (CCW) of 1980 is a bulwark against the most inhumane conventional technologies. But it needs continuous updating to stay relevant, especially in the face of technologies like improvised explosive devices (IEDs), lethal autonomous weapons systems (LAWS), and artificial intelligence (AI) weapons. Global anxiety about such weapons is rising, as are demands for action.¹

For the international community arms control and disarmament traditionally means weapons of mass destruction (WMD), the nuclear, chemical and biological weapons most destabilizing to international order and most dangerous overall. But this does not conceal the dangers of conventional weapons.

Conventional technologies—weapons based on chemical explosives and their delivery systems—are responsible for most of the world’s suffering from armed violence. In November 2019, the most recent month before this issue brief was written, 100 percent of all injuries in armed conflict was caused by conventional weapons.²

CCW



Controlling these technologies is highly controversial for the Member States of the UN.

¹ ‘Battle algorithm: Artificial intelligence is changing every aspect of war’, *The Economist*, 7 September 2019, <https://www.economist.com/science-and-technology/2019/09/07/artificial-intelligence-is-changing-every-aspect-of-war> ; and Thor Benson, ‘2020s predictions: Killer robots may roam the Earth’, *Inverse*, 6 January 2020,

<https://www.inverse.com/article/61284-killer-robots-police-military-developing>

² ‘Explosive violence in November 2019’, *Action on Armed Violence*, November 2019, <https://aoav.org.uk/2019/explosive-violence-in-november-2019/>



Under Article 51 of the UN Charter, Member States are entitled to the means of self-defense. But what should they do when conventional technologies go beyond the requirements of self-defense? This is clearest with conventional technologies agreed to be inhumane, violating basic standards of decency by killing and wounding indiscriminately, or leaving wounds that are difficult to treat.

That is the job of the Convention on Certain Conventional Weapons (CCW) of 1980. The CCW can be amended more easily than most international treaties—that is one of its great appeals for global action—but keeping it relevant and up to date is a major challenge for the UN’s 193 Member States. Many believe this is the best hope for regulating technologies like artificial intelligence.³

The Convention on Certain Conventional Weapons (CCW)

Negotiation of the Convention on Certain Conventional Weapons (CCW) was completed in Geneva on 10 October 1980. With enough ratifications, it went into effect in December 1983.⁴ The convention’s goal is to restrict or prohibit conventional weapons agreed to be inhumane, excessively injurious, or whose effects are indiscriminate against its victims, harming soldier and civilian alike. This CCW has been expanded through a series of protocols to covers, landmines, booby traps, incendiary weapons,

blinding laser weapons and addresses the removal of unexploded ordinances in post-war. Because it is designed to be amended with new protocols, the CCW is uniquely adaptable. It could be amended again to deal with the most dangerous technologies of the future.

Responding in large part to use of inhumane weapons during the War of Vietnam, the CCW is a unique international treaty. It is more of platform than a finished treaty, designed to be amended by the States Parties to deal with new technologies as they appear. This has happened relatedly in the past, and could happen again. Amendments take the form of *protocols*, each addressed to a specific technological problem. Currently there are five protocols of the CCW:

- **Protocol I** of 1980 prohibits weapons that create *non-detectable fragments*, shards that injure but do not show up on X-rays or other diagnostics, making wounds difficult to treat and causing unnecessary suffering. Examples include plastic bullets and darts, plastic grenades, etc.
- **Protocol II** of 1980 restricts *landmines and booby traps*. The Protocol regulates does not ban the use of landmines, but it prohibits non-self-destructing and non-self-deactivating mines when used outside of a fenced, marked and monitored area. It also prohibits targeting of mines against civilian populations and requires the removal of mines or traps once the conflict has ended.

³ Neil C. Renic, ‘Death of efforts to regulate autonomous weapons has been greatly exaggerated’, *Bulletin of the Atomic Scientists*, 18 December 2019, <https://thebulletin.org/2019/12/death-of-efforts-to-regulate-autonomous-weapons-has-been-greatly-exaggerated/>

⁴ The original Convention: *Convention on Prohibitions or Restrictions on the Use of Certain Conventional*

Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, United Nations Office for Disarmament Affairs [https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/51609D467F95DD5EC12571DE00602AED/\\$file/CONVENTION.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/51609D467F95DD5EC12571DE00602AED/$file/CONVENTION.pdf)



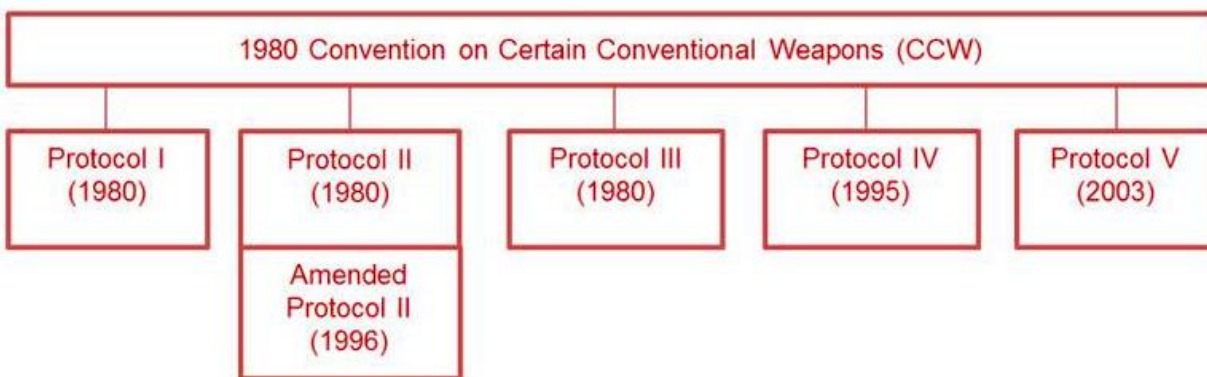
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Protocol II was amended in 1996 (extending its scope of application), and entered in force on December 3, 1998. The amendment extended the restrictions on landmine use to internal conflicts; established reliability standards for remotely delivered mines; and prohibited the use of non-detectable fragments in anti-personnel landmines (APL). The failure to agree to a total ban on landmines led to the *Ottawa Treaty* of 1997, which completely banned anti-personnel landmines (APLs).

- **Protocol III** of 1980 restricts use of *incendiary weapons* like phosphorus grenades and napalm bombs. Under no circumstances can States Parties make civilians or civilian property the object of attack by any weapon or munition whose primary function is to create flame or excessive heat.

- **Protocol IV** of 1995 prohibits use of *blinding laser weapons*, any weapon whose primary function is to cause permanent blindness. States Parties also agreed not to transfer blinding laser technology to any state or non-state actor. It is important to note that the protocol does not restrict weapons systems where blinding is a collateral or incidental effect, although the parties agree to take all precautions to avoid such effects.
- **Protocol V** of 2003 addresses *explosive remnants of war*. It requires the removal of unexploded ordnances (UXO) at the cessation of hostilities. These include unexploded munitions like unexploded bomblets from cluster bombs, landmines, maritime mines, and abandoned explosive weapons like artillery shells.



The full title of the treaty is the *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects*. As of April 2017, there were 125 States Party, including all five



Permanent Members of the UN Security Council (the P5; China, France, Russian Federation, the United Kingdom and United States).⁵

Uniting all parts of the Convention and its Protocols is the desire to protect military troops from inhumane injuries and prevent noncombatants from accidentally being wounded or killed by certain types of arms. When it entered into force in December 1983, the Convention applied to incendiary weapons, mines and booby-traps, and weapons designed to injure through very small fragments. Since then, treaty states-parties—numbering 120 total as of August 2017—have added provisions to ban blinding laser weapons and address lingering dangers posed by unexploded munitions leftover after combat ends.⁶

The CCW is more complicated than most arms control agreements, because it is an umbrella for several independent treaties (the Protocols). Each Protocol brings a different combination of Member States in favor and opposed. This peculiar characteristic of the CCW, its unique structure, results in its flexibility; the memberships of the framework convention (the CCW itself) and the five Protocols do not overlap exactly.

This also permits it to adapt to the political and technological changes in the use of the force. The original Treaty was applicable only in instances of international armed conflict, which involved only States. In light of the growing incidence of

internal conflicts (civil or ethnic wars, insurgencies or rebellions), in 2001 the CCW Members adopted an amendment to broaden its scope to include ‘non-international’ (or internal, domestic) armed conflict. This gives the already unique treaty even greater potential to deal with technological and political change.⁷

Current Situation

Weapons systems are constant evolving with new technology and this leaves the CCW in constant need of revision. Among the emerging weapons technologies that are most often described as candidates for action by the UN through new Protocols the CCW are:

- improvised explosive devices (IEDs)
- lethal autonomous weapons systems (LAWS)
- artificial intelligence (AI) weapons

Improvised explosive devices (IEDs) take many forms. Some are like land mines or bobby traps, activated by the victim when they trigger a trip-wire or electronic sensor. Other rely on an operator to detonate. They can be stationary underground, loaded into a truck or car, or even carried by a suicide bomber. Then can big enough to kills people nearby, or large enough to destroy passing vehicles and even buildings. What all IEDs share is their improvised nature, assembled

⁵ *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects*, United Nations Office for Disarmament Affairs,

<http://disarmament.un.org/treaties/t/ccwc>

⁶ Jeff Abramson, ‘Convention on Certain Conventional Weapons (CCW) At a Glance’, *Arms Control Association* September 2017,

<https://www.armscontrol.org/factsheets/CCW>

⁷ The Amended Art. I of the Convention entered into force in May 2004. *The Convention on Certain Conventional Weapons*, Government of Italy: Ministry of Foreign Affairs and International Cooperation, 2018,

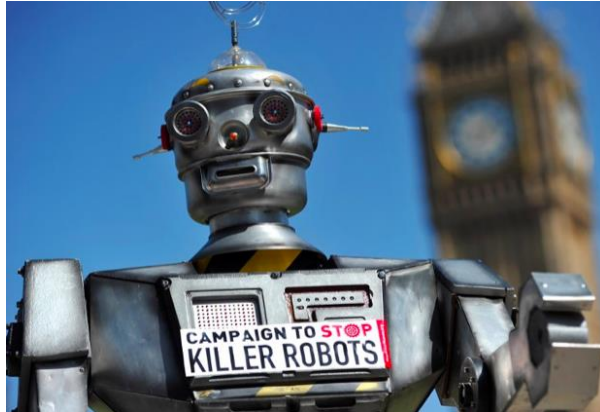
<https://italiarappginevra.esteri.it/rappginevra/en/il-disarmo/trattati-e-convenzioni/armi-conv-effetti-indiscriminati.html>



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from parts instead of manufactured in a commercial factory. They are best known as weapons of terrorist and insurgent groups.



Lethal autonomous weapons systems (LAWS) do not exist yet, but are expected to become widespread as advances in computing power and design spread. They are autonomous, meaning they do not require human control to act destructively. This makes them different from all weapons currently available, which are operated by military personnel, or set to act automatically in specific circumstances. The system might receive a data profile of an individual target and carries out its mission, killing that individuals based on recognition software and evaluation of possible collateral destruction nearby.

This removes active human decision-making and leaves immediate decisions about deadly violence in the hands of artificial intelligence (AI). Current weapons systems require “meaningful human control” meaning that a human must make the final decision on what damage the weapon inflicts to its target. Autonomous weapons systems may remove that element thus allowing for an AI system to make the decision to end a human life. This is a growing issue as many companies have been developing autonomous weapons systems

⁸ Bonnie Docherty, ‘Banning ‘Killer Robots’: The Legal Obligations of the Martens Clause’, *Arms*

that are capable of causing physical death and sever physical damage.

For five years, deliberations in the General Assembly have examined the problem of so called ‘killer robots’ or LAWS, but inconclusively. Some states have highlighted a host of problems with lethal autonomous weapons systems, including legal, moral, accountability, technical, and security concerns. Efforts toward imposing binding international restrictions on so-called killer robots was thwarted by a small group of countries, including Israel, Russia, South Korea, and the United States.⁸

Artificial intelligence weapons: AI would have the addition advantage of being able to learn from the environment, reevaluate a changing situation, and initiate new, previously unimagined attacks, all to achieve a general mission order.



Country and Bloc Positions

The issues at stake in the CCW create distinct coalitions that do not always match normal

Control Association, October 2018, <https://www.armscontrol.org/taxonomy/term/40>



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international divisions and alliances. For example, China and the European Union often find agreement on their skepticism toward LAWS, while Russia, South Korea and the United States are much interested in preserving their rights to develop such capabilities.

China: On 13 April 2018, China's delegation to United Nations Group of Governmental Experts on lethal autonomous weapons systems announced the "desire to negotiate and conclude" a new protocol for the Convention on Certain Conventional Weapons "to ban the use of fully autonomous lethal weapons systems." According to the Campaign to Stop Killer Robots, a non-governmental group active on the issue, the Chinese delegation wants controls, but 'stressed that [the ban] is limited to use only,' and does not ban development. The same day, the Chinese air force released details on an upcoming challenge intended to evaluate advances in fully autonomous swarms of drones, which will also explore new concepts for future intelligent-swarm combat.⁹

European Union: for the 28 member States of the European Union (EU), extending the CCW with a new protocol prohibit IEDs is the highest priority. European countries are divided on the readiness to start negotiations on autonomous weapons or artificial intelligence. While all agree the latter two areas need regulation, they believe

the state of technology is premature for effective regulation. Instead they agree IEDs are ready for banning, including verification procedures and requirements for dealing with violators.¹⁰ European states are willing to start a negotiating process to lead to eventually protocol on LAWS, but insists that no specific action be taken now. The group of Nordic countries urged that further consideration be given to the notion of "human control over new weapons" and affirmed that 'humans should always bear the ultimate responsibility when dealing with questions of life and death.'¹¹

Non-Aligned Movement (NAM): the 120 Member States of the UN's largest voting bloc are generally agreed that IEDs represent a serious problem, and a new protocol is possible. But controlling LAWS is a greater priority, because autonomous weapons threaten to undermine the effectiveness of their existing armed forces. Countries like Cuba, Ecuador and Pakistan have reiterated their long-standing call for a ban on lethal autonomous weapons systems.¹² States like Algeria, Egypt as well as China, along with organizations like the Campaign to Stop Killer Robots, Human Rights Watch, and Mines Action Canada see meaningful human control as incompatible with LAWS. They thus supported a prohibition on the development and use of LAWS.¹³

⁹ Elsa Kania, 'China's Strategic Ambiguity and Shifting Approach to Lethal Autonomous Weapons Systems', *Lawfare*, 17 April 2018, <https://www.lawfareblog.com/chinas-strategic-ambiguity-and-shifting-approach-lethal-autonomous-weapons-systems>

¹⁰ EU on IEDs: 'EU Statement 2018 Amended Protocol II Group of Experts Convention on Certain Conventional Weapons Geneva, 11 June 2018', *European Union External Action Service*, 11 June 2018, [https://eeas.europa.eu/headquarters/headquarters-](https://eeas.europa.eu/headquarters/headquarters-homepage/47891/2018-amended-protocol-ii-group-experts-convention-certain-conventional-weapons_en)

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¹¹ Outreach at the UN in New York', Campaign to Stop Killer Robots, October 2017,

<https://www.stopkillerrobots.org/2017/10/unga72/>

¹² 'Outreach at the UN in New York', Campaign to Stop Killer Robots, October 2017,

<https://www.stopkillerrobots.org/2017/10/unga72/>

¹³ Hayley Evans, 'Lethal Autonomous Weapons Systems at the First and Second U.N. GGE Meetings', *Lawfare*, 9 April 2018,

<https://www.lawfareblog.com/lethal-autonomous-weapons-systems-first-and-second-un-gge-meetings>



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Russia: leads a bloc that prioritizes preservation of the sovereign right to research and development (R&D) and possible deployment of military artificial intelligence and LAWS. It is not opposed to a new protocol on IEDs, but does not see this as an immediate priority. Instead it wants assurances that current technologies—armored vehicles, missiles and such—continue to dominate battlefields. It also wants to preserve the right to field AI and LAWS.¹⁴ Russia has specifically warned against ‘attempts to impose preventive limitations or prohibitions on this type of prospective weapons and relevant technologies.’¹⁵

United States: The United States wants attention focused exclusively on IEDs, including anti-vehicle mines. China and Russia oppose restrictions on anti-vehicle IEDS, which they fear would weaken their defenses against armored vehicle attacks. The United States is insistent on banning all kinds of IEDs, not just anti-personnel types.¹⁶ The United States joins with Russia to preserve its right to develop AI based weapons, including LAWS, which it sees as a source of short-term advantage in global competition.¹⁷

Proposals for Action

The General Assembly has broad powers regarding the CCW. It can propose a new Protocol dealing with a specific technological problem like IEDs or LAWS. Alternatively, it can propose an international conference to negotiate specific terms. There are a few issues with the

CCW that need to be resolved by the United Nations currently. It also can prohibit certain kinds of reforms, if the Member States are so inclined.

Request negotiation of a new protocol to deal with specific technologies, setting basic terms, including the technologies to be prohibited, how the ban is to be verified, and enforced. Recommending an outright ban of LAWS, for example, is within the committee’s powers.

Clarify the terms of future protocols: The General Assembly can recommend the States Party to the CCW develop a common definition of ‘meaningful human control’ and its required role in weapons systems. Should limits or a ban only pertain to lethal autonomous weapons, or all autonomous weapons? These are questions on which the General Assembly can rule, or request further deliberation in a special conference.

Call for a new Conference of all States Party to the CCW to negotiate a whole new protocol on either IEDs or LAWS, or possibly both. Instead of specifying exactly what it to be done, what is to be banned, the resolution would stress terms of reference for the conference instead, including goals, deadlines, etc.

A legally-binding commitment to prohibit specific technologies: another approach is to just do it, establish a prohibitions on lethal autonomous weapons systems, potentially including a requirement for human control over the critical functions in lethal autonomous

¹⁴ Ibid.

¹⁵ Outreach at the UN in New York’, Campaign to Stop Killer Robots, October 2017, <https://www.stopkillerrobots.org/2017/10/unga72/>

¹⁶ ‘U.S. Statement as delivered by Katherine Baker’, Meeting of the Parties of Amended Protocol II of the Convention on Certain Conventional Weapons, 21 November 2017,

<https://geneva.usmission.gov/2017/11/24/amended-protocol-ii/>

¹⁷ Michael Klare, ‘U.S., Russia Impede Steps to Ban ‘Killer Robots’ *Arms Control Today*, 1 October 2018, <https://www.armscontrol.org/act/2018-10/news/us-russia-impede-steps-ban-‘killer-robots’>



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weapons systems. This would leave important details, possibly including definitions and verification procedure, to be worked out at a future conference.

A political (non-binding) declaration to outline important principles such as the necessity of

human control in the use of force and the importance of human accountability, and with elements of transparency and technology review.



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