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UNCCW

**AGENDA: ADDRESSING THE CONCERN
OF LETHAL AUTONOMOUS WEAPONS
SYSTEMS.**

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LETTER FROM THE EXECUTIVE BOARD

By the powers vested in us by the organizing committee, we welcome you to the simulation of the UNCCW in Techfest World MUN 2020. We hope this committee gives you a healthy experience and proves to be a basis for your future endeavors. This study guide simply acts as a tool to give a direction to your preparation. You are expected to research and understand the depths of this agenda so as to make fruitful debate possible in committee.

We are looking forward to intense discussions and intelligent conclusions from the delegates of this simulation. Furthermore, you are expected to understand that all of you are diplomats and would be representing individual countries. It is important to maintain diplomatic courtesy and mutual respect for every soul present in the committee, be it a delegate or a member of the organizing committee. For obvious purposes, English will be the official language of communication during the course of committee sessions.

Feel free to approach us with any queries that you might be having. We wish you all the best for the conference.

Co-Chairperson: Aman Johri

Co-Chairperson: Tejashh Bagri

Rapporteur: Srivatsa Samaga

HISTORY, MANDATE AND FUNCTION

The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons¹ which may be deemed to be excessively injurious or to have indiscriminate effects as amended on 21 December 2001 (CCW) is usually referred to as the Convention on Certain Conventional Weapons, also known as the Inhumane Weapons Convention.

During the 1970s, new technologies were leading to weapons that were not necessarily compatible with international humanitarian law, which caused an increase in awareness and concern among the international community. The International Committee of the Red Cross, in response to these concerns, convened a Conference of Government Experts on Weapons that may cause unnecessary suffering or have indiscriminate effects from 24 September to 18 October 1974 in Lucerne, Switzerland wherein the issues addressed by the conference were:

- (i) discussion and analysis of proposed legal criteria,
- (ii) incendiary weapons,
- (iii) small-caliber projectiles,
- (iv) blast and fragmentation weapons,
- (v) delayed-action and treacherous weapons and
- (vi) other categories and new weapons.

¹ United Nations, Office for Disarmament Affairs, Convention on Certain Conventional Weapons, <https://unoda-web.s3-accelerate.amazonaws.com/wp-content/uploads/assets/publications/more/ccw/ccw-booklet.pdf>

These and other efforts led to the United Nations General Assembly Resolution 32/152 (19 December 1977), which called for the convening of a Conference “with a view to reaching agreements on prohibitions or restrictions of the use of specific conventional weapons, including those which may be deemed to be excessively injurious or to have indiscriminate effects, taking into account humanitarian and military considerations, and on the question of a system of periodic review of this matter for consideration of further proposals.” The Conference was convened in 1979 and resulted in the Convention on Certain Conventional Weapons (CCW) and its Protocols I, II and III being adopted on 10 October 1980. The CCW and Protocols I, II and III entered into force in December 1983.

Reflecting the basic humanitarian principles, the CCW aims to:

- protect civilians against the effect of hostilities;
- reinforce the principle that the right of the parties to an armed conflict to choose methods and means of warfare is not unlimited;
- prohibit weapons that make no distinction between civilians and combatants or cause unnecessary suffering or superfluous injury; and
- reaffirm the “Martens Clause”

A tragic reality of the world that we live in are armed conflicts. However, conventional weapons that are excessively injurious or whose effects are indiscriminate need not be part of this reality. The CCW is an important instrument of international humanitarian law in which, currently, there are 118 States Parties with the latest country to join being Iraq.

The purpose of the Convention is to ban or restrict the use of certain specific types of weapons that may cause unnecessary or unjust suffering to civilians or combatants indiscriminately. The structure of the CCW was adopted in a manner to ensure future flexibility. All prohibitions or restrictions on the use of specific weapons or weapons

systems are the object of the Protocols annexed to the Convention.

Facts and Protocols²:

1. The CCW seeks to regulate the conduct of non-state actors. This was an important decision as most armed conflicts are not international. The CCW is also one of the very few instruments of international humanitarian law.
2. The CCW which has led to the establishment of customary international law, focusses on the restrictions or prohibitions on the use of weapons considered to be inhumane.
3. Explosive Remnants of War (ERW) are the explosive devices that cause the greatest number of casualties. Therefore, Protocol V on ERW is one of the important instruments under the CCW.
4. The use of Improvised Explosive Devices (IEDs) has also drastically increased. States Parties to Amended Protocol II have been focussing on how to best address IEDs.

² United Nations, Office for Disarmament Affairs, The Convention on Certain Conventional Weapons, [https://www.unog.ch/80256EE600585943/\(httpPages\)/4F0DEF093B4860B4C1257180004B1B30?OpenDocument](https://www.unog.ch/80256EE600585943/(httpPages)/4F0DEF093B4860B4C1257180004B1B30?OpenDocument)

INTRODUCTION AND HISTORICAL BACKGROUND OF THE AGENDA

Lethal autonomous weapons (LAWS), the third revolution in warfare (after gunpowder and nuclear weapons), are weapon systems that can identify, select and engage a target without meaningful human control. Semi-autonomous weapons that are in use today rely on autonomy for certain parts of their system but they usually have a communication link to a human that approves or makes the final decisions. In contrast to these, a fully-autonomous system could be deployed without any established communication with a human and can independently respond to a changing environment and also decide how to achieve its pre-programmed goals. These have an increased range and are not subject to communication jamming, mostly. The ethical, political and legal debate underway has been around autonomy in the use of force and the decision to take a human life by these weapons systems.

LAWS may create a paradigm shift in how war is waged. This revolution would allow highly lethal systems to be put to use in the battlefield that cannot be controlled or recalled once launched. Unlike any weapon seen before, LAWS could also allow selective targeting of a particular group based on various parameters such as age, gender etcetera. Because LAWS would greatly decrease personnel cost and could be easy to obtain at low cost (like in the case of small drones), small groups of people could potentially inflict disproportionate harm, making LAWS a new class of weapon of mass destruction.

It is believed that LAWS have the opportunity to make war more humane and reduce civilian casualties by being more precise and taking more soldiers off the battlefield. However, some worry about accidental escalation and global instability, and the risks of seeing these weapons fall into the hands of non-state actors. Over 4500 Artificial Intelligence(AI) and Robotics researchers, 250 organizations, 30 nations and the

Secretary General of the UN have called for legally-binding treaty banning LAWS. However, they have been met with resistance from countries developing LAWS, who fear the loss of their strategic superiority.³

The killer robot has been a fascinating subject for scientists for decades, but rapid advances in AI have recently ushered in the era of lethal autonomous machines for real. If certain ship-borne air-defense systems are counted, then that day has already arrived. A growing chorus of critics, however, think machines should not be licensed to kill. With the United Nations taking up the issue in 2014, here's a look back at the surprisingly long history of lethal autonomy-

tarting in 1495, with Leonardo Da Vinci coming up with the idea of a “mechanical knight” which mimicked human actions, and moving on to 1898 when Nikola Tesla unveiled the first wireless remote-controlled vehicle, who knew that the first World War (1914) would already bring in a series of advances in robotic warfare. At the forefront were U.S.-made Kettering “Bug” (a gyroscope-guided winged bomb) and the German FL-7 wire-guided motorboat, loaded with hundreds of pounds of explosives and by 1916, the number of German boats had doubled.

In 1943, Two German-made FX-1400, or “Fritz X,” bombs slammed into the Italian battleship Roma killing over 1200 sailors, and is arguably known as the first of its kind.

By 1950, the famous British mathematician Alan Turing, wrote, “I propose to consider the question, ‘Can machines think?’” In Turing’s mind, it was less of a matter of whether machines can reason like humans than how well they can imitate them.

³ Report of the 2018 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems, Geneva, 9–13 April 2018 and 27-31 August 2018 (CCW/GGE.1/2018/3), [https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/20092911F6495FA7C125830E003F9A5B/\\$file/CCW_GGE.1_2018_3_final.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/20092911F6495FA7C125830E003F9A5B/$file/CCW_GGE.1_2018_3_final.pdf)

The USS Mississippi test-fires, in 1953, which was one of the earliest computer-guided missiles, launching a 1180-pound RIM-2 Terrier off the coast of Cape Cod.

1963- The Pentagon's Defense Advanced Research Projects Agency gave the Massachusetts Institute of Technology \$2 million to explore "machine-aided cognition", concerned that the Soviet Union might technologically outdo the United States.

1972- The US Air Force used laser-guided weapons to destroy the strategic Thanh Hoa Bridge in North Vietnam, marking the first time, a so-called "smart bomb" successfully destroyed a major enemy target. During the Vietnam War, the Air Force also deployed autonomous unmanned surveillance aircraft that fly in circular patterns and shoot film until their fuel runs out.

1978 - The US Defense Department launched the first Navstar satellite which was a major development in modern global positioning technology.

1988- The Aegis air-defense system aboard the USS Vincennes, stationed in the Persian Gulf during the Iran-Iraq War, detected an apparently hostile aircraft. The plane was an Iranian commercial airliner, but the system, shot down the jetliner, killing all 290 people aboard, and was then, in semi-automatic mode,

1994 - The U.S. government awarded General Atomics a contract to build the RQ-1 Predator drone, which can transmit video footage in real time over satellite link, guided by ground-based controllers who could be thousands of miles away. By 2001, it had already been upgraded to carry Hellfire missiles. This was when the era of killer drones was born.

2002- A Predator hovering about 100 miles east of the Yemeni capital, Sanaa, carried

out the first US drone strike just outside a war zone, killing Abu Ali al-Harithi, the alleged mastermind of the 2000 USS Cole bombing, and five other militants.

2006 - South Korea announced plans to install Samsung Techwin SGR-A1 sentry robots along the Demilitarized Zone with the Democratic Republic of North Korea. Armed with machine guns, they are now capable of fully autonomous tracking and targeting, although human approval is reportedly required before they fire.

2009 - The US Air Force released a planning document that charted a long-term path to “fully autonomous capability” for aircrafts — including the use of force.

2012 - The US Defense Department issued a directive designed to “minimize the probability and consequences of failures in autonomous and semi-autonomous weapon systems.” Although the directive allows for the development of fully autonomous nonlethal systems, it requires, for the time being at least, that “appropriate levels of human judgment” be exercised over robots that use deadly force.

April 2013 - Seizing on the public’s distaste for drones, a coalition of NGOs, including the Human Rights Watch, launched the Campaign to Stop Killer Robots.

May 30, 2013- Christof Heyns, the UN special rapporteur⁴ on extrajudicial, summary, or arbitrary executions, called for a moratorium on the development and deployment of autonomous robots and urged states to consider whether the existing international law is sufficient to govern their use.

⁴United Nations, Human Rights Council, Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns, A/HRC/26/36 (1st April 2014), [Report of the Special Rapporteur on extrajudicial ... - OHCHR](http://www.ohchr.org/RefDoc.aspx?DocId=38912)www.ohchr.org/RefDoc.aspx?DocId=38912

July 2013- The Northrop Grumman X-47B unmanned combat air vehicle landed successfully on the deck of the USS George H.W. Bush, becoming the first unmanned autonomous vehicle to land on an aircraft carrier.

October 8, 2013- Documents submitted to the British Parliament revealed that BAE Systems' supersonic, stealthy Taranis drone — with the ability to autonomously identify targets — had begun secret tests in the Australian Outback. But BAE also reassured legislators that there was a “human operator in the loop.”

November 15, 2013- The 117 governments party to the U.N. Convention on Certain Conventional Weapons agreed to take up the issue of lethal autonomy in 2014 — with activists hopeful that a ban could be in place as early as 2016.⁵

PAST ACTIONS OF THE CCW

The UNCCW has talked on fully autonomous weapon systems, or killer robots, governments discussed potential military applications of autonomous technologies; characteristics of autonomous weapon systems; potential challenges of these systems for international law; and the “human element” in the use of force.

The majority of states have supported the development of new international law containing the prohibitions and regulations of autonomous weapon systems. 28

⁵ Amandeep Singh Gill, The Role of the United Nations in Addressing Emerging Technologies in the Area of Lethal Autonomous Weapons Systems, United Nations, <https://www.un.org/en/un-chronicle/role-united-nations-addressing-emerging-technologies-area-lethal-autonomous-weapons>

governments out of these have supported a complete ban on the development, possession, and use of these weapons. Some others seek a legal agreement that ensures a meaningful human control over critical functions in such systems. A few other states expressed their interest in other mechanisms, such as a political declaration. These states envision a declaration to outline principles for the development and use of lethal autonomous weapon systems, such as the necessity of human control in the use of force and the importance of human accountability. Some countries have also suggested the development of a code of conduct on the development and use of autonomous weapon systems.

After meeting in November 2017, the group agreed to meet again for a total of 10 days in 2018.

As states gathered for the sixth time since 2014 to discuss autonomous weapons at the United Nations, support had rapidly grown for creating a new international law to respond to the many serious challenges raised by lethal autonomous weapons systems. The Campaign to Stop Killer Robots believed it is time for states to start negotiating a new international law to draw a line on lethal autonomous weapons systems.

There now appeared to be a sort of convergence on the urgent need for a new ban treaty. States took note of the many significant developments in the five months since the last CCW meeting.

States expressed their support for a negotiating mandate so that negotiations can begin in 2019 with the objective of adopting a new CCW protocol on lethal autonomous weapons systems by 2020.

The 2018 Meeting of High Contracting Parties to the Convention on Certain Conventional Weapons (CCW) came to an anti-climactic end. The three days of

deliberations focused more on discussing what issues to not discuss next year, once again illustrating the problem of treating consensus as requiring absolute unanimity. Rather than respecting multilateralism, a few individual states exploited their power to not only weaken the body's mandates for 2019 but to also misrepresent discussions in the final report.

However, from 2019 onwards, the body started gaining proper perspective. A regional meeting of the Campaign to Stop Killer Robots in Tokyo, Japan resulted in the adoption of a Communique, which emphasized on increasing outreach at the national level within the Asia-Pacific region and expanding the Campaign's presence to additional countries in the region.

The campaign also adopted another communique which emphasised on working in close cooperation with NGOs, academics, and others at the national level to work toward a legally-binding instrument.

BLOC POSITIONS ⁶

The potential for fully autonomous weapons to upset the international strategic balance and affect arms control is huge as such weapons “present considerable uncertainties” for compliance with international humanitarian law. Removing human control from the use of force raises complex ethical legal, operational, and technological concerns. Humans must retain the ability to take the final decision over the use of lethal force. Many nations support a pre-emptive ban on fully autonomous weapons as well.

However several nations are also of the belief that existing international humanitarian law is sufficient to regulate the use of lethal autonomous weapons as it has some very important restrictions that fully cover weapons systems that have high degrees of autonomy. They have thus rejected calls to negotiate a new international treaty to ban or restrict fully autonomous weapons. The arguments in favour of LAWS also state the possibility of even better compliance with the laws of armed conflict in comparison with human soldiers along with the conundrum of the concepts of “human control” and “human involvement” involving subjective assessments and thus are irrelevant. The reality of a LAWS existing in the future is also doubted, nevertheless several research and development programs in autonomous weapons systems by developing, testing, producing, and using weapons systems with autonomous functions are in progress.

Ensuring accountability for acts of an autonomous weapon system poses some significant challenges. In Joint Doctrine Note 2/11 on the UK Approach to Unmanned Aircraft Systems, the UK has said that legal responsibility for any military activity remains with the last person to issue the command authorizing a specific activity.

⁶ Brian Stauffer, Country Positions on Banning Fully Autonomous Weapons and Retaining Human Control, Human Rights Watch, Aug. 10th, 2020, <https://www.hrw.org/report/2020/08/10/stopping-killer-robots/country-positions-banning-fully-autonomous-weapons-and>

The US has also accepted those persons involved in operations of autonomous weapon systems could be accountable for their decisions. In its Directive 3000.09, the US Department of Defense has said that “persons who authorize the use of, direct the use of, or operate autonomous and semi- autonomous weapon systems must do so with appropriate care and in accordance with the law of war.

CHALLENGES FACED IN RESOLVING THIS ISSUE

The International Committee of the Red Cross (ICRC) first raised concerns about autonomous weapon systems in its 2011 report, International Humanitarian Law and the challenges of contemporary armed conflicts, calling on States to carefully consider the fundamental legal, ethical and societal before issues raised by these weapons developing and deploying them.⁷

Even if autonomous weapon systems could be used in compliance with IHL rules, there is the question of whether the principles of humanity and the dictates of public conscience allow life and death decisions to be taken by a machine with little or no human control. It is argued that the manner in which people are killed matters, even if they are lawful targets. Some emphasize that respecting the human right to dignity means that killing capacity cannot be delegated to a machine; rather, the decision to take someone’s life must remain with humans.

There are fundamental technical challenges to address before they may become more versatile (e.g. performing multiple tasks), more adaptable (i.e. to unpredictable external environments), and capable of carrying out complex tasks that require reasoning and judgement.

While complex reasoning is beyond the capability of current technology, existing robotic systems are already able to outperform humans on certain tasks. However this

⁷Expert Meeting on Autonomous Weapons Systems Technical, Military, Legal and Humanitarian Aspects, International Committee of the Red Cross, 26th to 28th March 2014, <https://www.icrc.org/en/publication/4221-expert-meeting-autonomous-weapon-systems>

high performance relies on the task being very well well-defined and information about the environment (or context) pre-programmed, but existing robotic systems are not able to adapt to unexpected changes in the environment.

Additionally verifying and validating complex software systems, as might be incorporated in an autonomous weapon system, is a very difficult process.⁸

Undertaking legal reviews of autonomous weapon systems raises a number of challenges. Article 36 refers to an obligation to determine the legality of new weapons in the study, development, acquisition or adoption of new weapons.

Legal reviews should be carried out throughout the development process, and not just when the weapon is ready for procurement. Even at this early stage, there is an interest in ensuring that the weapon complies with the law, before further resources are invested into its development.⁹

CHALLENGES IN COMPLYING WITH TARGETING RULES UNDER IHL

The complexity of the assessments and judgements involved in applying the IHL rules of distinction, proportionality and precautions in attack, especially in dynamic conflict environments is prevalent. These assessments and judgements appear to be uniquely human (or "subjective" appreciation), and would seem extremely challenging to program into an autonomous weapon system.

Current technology, including heat sensors and visual sensors capable of detecting military uniforms or weapons, and sensors that detect incoming fire would not be capable of independently making the nuanced distinctions required by the principle of

⁸Ibid

⁹Ibid

distinction, including distinguishing persons that are hors de combat from combatants, and civilians from those who are directly participating in hostilities. It is clear that the

development of software that would be capable of carrying out such qualitative judgments is not possible with current technology.¹⁰

An evaluation of military advantage (under the rule of distinction for the purpose of determining whether an object is a military objective, and under the rule of proportionality to determine whether the incidental harm would be excessive in relation to the concrete and direct military advantage anticipated) requires not only an ability to perceive and analyse the immediate circumstances, but also requires knowledge of the broader context of the conflict. Assuming that an autonomous weapon system is incapable of this, a human would have to be in constant communication with the system, to input information relevant to this broader assessment. On the other hand, there may be ways of updating the information database of the machine so that it is aware of the real-time military advantage associated with attacking the category of objective in question.

Under the obligation to cancel or suspend an attack if it becomes apparent that the attack is indiscriminate or disproportionate, an autonomous weapon system would need to be capable of quickly perceiving and analysing changes in the environment, and adapting its operations accordingly. Again, this represents a significant programming challenge.

In contrast, weapon systems that perform simple tasks in predictable environments could be easier to develop. When operating within such limits, autonomous weapon

¹⁰Ibid

systems may be capable of complying with IHL. Yet there exists difficulty in enforcing such restrictions, particularly regarding use by non-State armed groups.¹¹

Working on the assumption that technology may one day be capable of complying with IHL rules without human intervention, there are potential advantages of autonomous weapon systems. In particular, autonomous weapon systems would not be affected by fear, hatred or other emotions. Autonomous weapon systems may also be able to take additional precautionary measures because they would not be concerned about their own ‘safety’. Finally, autonomous weapon systems may allow for greater transparency than humans, as they could be equipped with audiovisual recording devices and would not be ‘motivated’ to conceal information.

¹¹ Ibid

Predictability of the autonomous weapon system's compliance with IHL is vital; if it is not possible to guarantee that the weapon system will comply with IHL in all circumstances then it would not be lawful.

Even if autonomous weapon systems could be used in such a way as to comply with IHL rules, there are ethical and moral challenges that need to be considered carefully. There is the related question of whether the principles of humanity and the dictates of public conscience (the Martens Clause) allow life and death decisions to be taken by a machine with little or no human control.¹² Such systems pose considerable challenges for international humanitarian law (IHL), in particular to the principles of distinction, proportionality and precaution.¹³

The development of autonomous weapons may even lead, because of programming needs, to a clarification of many rules that have so far remained vague and whose protective utility depends upon subjective value judgments. Most arguments of principle against autonomous weapons either do not withstand comparison with other, alternative, means and methods of warfare or they are based upon an erroneous understanding of IHL. There are nevertheless some challenges when applying existing IHL to autonomous weapons, which necessitate agreement on the proper interpretation of IHL by every State using them and between States.

In addition to challenges arising from the means of warfare, the obligation to take precautions in the choice of methods of warfare also imposes restrictions on the timing, location, or even angle of an attack.¹⁴

CONCLUSION

There are two types of challenges that need to be addressed if autonomous, intelligent systems are to be created. Technological limitations, such as computational power,

¹² Ibid

¹³ Ibid

¹⁴ Ibid

actuation and sensor quality and density, are limitations that will likely be overcome, or made less severe, in the near future given sufficient time and financial investment. These advances will lead to: better performances for self-driving cars; increased agility for walking machines; and higher dexterity in robotic manipulation. On the other hand, there are scientific challenges that we do not yet know how to solve. These include, for example: creating algorithms that can understand the world at a human level or reason about complicated tasks during manipulation; and creating versatile machines that can adapt to arbitrary environments. It is impossible to predict when or if these challenges will be solved. Therefore, despite tremendous progress in robotics in recent decades with constant improvement in the skills of robots in carrying out different tasks, there are still fundamental and difficult obstacles to developing robotic systems with true autonomy.

FURTHER READING

<https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots>

1. [https://www.unog.ch/80256EE600585943/\(httpPages\)/4F0DEF093B4860B4C1257180004B1B30?OpenDocument](https://www.unog.ch/80256EE600585943/(httpPages)/4F0DEF093B4860B4C1257180004B1B30?OpenDocument)
2. <https://www.hrw.org/news/2020/08/10/killer-robots-growing-support-ban>
3. <https://autonomousweapons.org/the-ottawa-definition-of-landmines-as-a-start-to-defining-laws/>