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AUTONOMOUS WEAPONS SYSTEM: PROBING THE LEGALITY AND REGULATION

Ms. Rupal Malik*

Dr. Benarji Chakka**

Introduction

“Law depends on violence and uses it as a counterpunch to the allegedly more lethal and destructive violence situated just beyond law’s boundaries. But the violence on which law depends always threatens the values for which law stands.”¹

Autonomous Weapon Systems (AWS) are based on Artificial Intelligence, whereby they select and attack the targets without any human intervention. These systems are pre-programmed with algorithms that enable them to identify the targets. The US DOD (Department of Defence) 2012 order 3000.09 on AWS characterizes an autonomous weapon system as “a weapon system that, once activated, is capable of selecting and engaging targets without additional human operator involvement”. The autonomy of such weapon systems is a critical element in their functioning without significant human intervention. The weapon system, after being launched by the human operators, itself takes control of targeting and attack, which is generally undertaken by a human combatant in a conventional armed conflict. These futuristic weapon systems have the potential to transform armed conflicts. Success in the pursuit of artificial intelligence may offer

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¹ Austin Sarat, “Situating Law Between the Realities of Violence and the Claims of Justice: An Introduction,” *Law, Violence, and the Possibility of Justice* 3 (Princeton University Press, 2001).

humanity unparalleled advantages, but it may also represent an existential danger due to its inherent characteristics.² These weapon systems are distinguished from other weapons as they operate on the basis of pre-programmed target profiles, which are recognized through the sensors and software of the system. AWS decides the use of force based on the environment they are operating in, which is decided by the operator much earlier based on the assumption of circumstances prevailing.³ At present, there is no consensus about the constructive definition of AWS resulting in a lack of common understanding about their characteristics and operation. During the discussion in the forums, the issue of autonomy is perceived differently at each level, which is problematic to develop common standards and regulatory responses for such weapons.⁴ Whereby some scholars are of opinion that increased autonomy in the weapon systems will enable more legally and morally accorded armed conflict.⁵ While others opine the development of AWS futile and problematic, in that way they seek preventive prohibition to prevent the expansion of military technologies into the civilian spheres.⁶

² Stuart Russell, Daniel Dewey, Max Tegmark, “Research Priorities for Robust and Beneficial Artificial Intelligence”, 36(4) *AI Magazine* 105-114 (2015).

http://futureoflife.org/data/documents/research_priorities.pdf.

³ Vincent Boulanin and Maaïke Verbruggen, “Mapping the Development of Autonomy in Weapon Systems”, SIPRI: Stockholm (Nov. 2017).

⁴ Roff, “Meaningful Human Control or Appropriate Human Judgment? The Necessary Limits on Autonomous Weapons”, Briefing Paper for Delegates at the Review Conference of the Convention on Certain Conventional Weapons (CCW), Geneva, 12–16 December 2016.

⁵ Kenneth Anderson and Matthew Waxman, “Law and Ethics for Autonomous Weapon Systems: Why a Ban Won’t Work and How the Laws of War Can”, A National Security and Law Essay, Hoover Institution, Stanford University, 23 (2013). http://media.hoover.org/sites/default/files/documents/Anderson-Waxman_LawAndEthics_r2_FINAL.pdf.

⁶ Noel E. Sharkey, “The Evitability of Autonomous Robot Warfare”, 94 *IRRC*, 787–799 (2012).

Although the AWS is neither specifically regulated by any of the IHL treaties nor by the customary IHL. The existing international legal framework does not specifically prohibit or restrict the use of these technologically advanced AWS. However, the parties to the CCW⁷ agree generally that development and operation of AWS must strictly be in accordance with IHL principles, making it clear that such weapon systems must adhere to rules of armed combat.⁸ States involved actively in the development, operations, and deployment of such weapon systems have an obligation to use these weapons within the limits of IHL. The traditional understanding of IHL undertakes human combatants within its purview, but the development of high technological weapons like autonomous weapon systems has challenged the interpretation and implementation of IHL. Primarily IHL obliges the parties of armed conflict and persons who decide to carry out an attack to respect and comply with armed conflict rules, but autonomous weapons are somewhat different from this conventional understanding. In these autonomous weapons, the machine itself decides and carries out an attack without any human intervention, which poses a challenge for the application of IHL principles.

Since human combatants are under an obligation to respect IHL during ongoing hostilities between two parties, they are responsible for any violation of the principles. These obligations and responsibilities under IHL cannot be delegated to any machine, computer code, or autonomous weapons, raising further questions as to who is obligated to respect these principles of IHL and who is responsible for violations, if they are committed by the autonomous weapons. These autonomous systems

⁷ The United Nations Convention on Certain Conventional Weapons, 1983.

⁸ CCW Meeting of Experts, "Possible Challenges to International Humanitarian Law Due to Increasing Degrees of Autonomy", Statement by Switzerland, CCW Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS), Geneva, 13–17 April 2015.

require further clarifications and interpretation of the principles of IHL, in the light of recent technological advancements. In such conflicts, life and death decisions are increasingly delegated to computers, which essentially replace human decision-making. This raises the question of whether the weapon will be able to ensure compliance with IHL principles, who will be responsible if any violation occurs, and how the weapon system will be able to make the evaluative judgment in changing circumstances of armed conflict.

There are diverse views among the international scholars with respect to circumstances whereby the AWS can be legally operated. Whereby one of them has⁹ elaborated that even in the present scenario it is difficult for human combatants to differentiate between lawful and illegal targets, in such a situation they are required to make judgments in rapidly changing conditions.¹⁰ There are inherent challenges involved in terms of value and context-based judgments while applying the law to the machines or algorithms thereof, whereby eliminating human reasoning from life-or-death choices may be contrary to the principle of human dignity and humanity.¹¹ While others argue that due to inherent autonomy such AWS are not able to respect and adhere to the rules of IHL, rather they should be banned if there is no meaningful and effective human control.¹² Some are also of the view that the present laws are sufficient enough to resolve the concerns presented by the use of these weapon systems with

⁹ Philip Alston, The former UN Special Rapporteur on extrajudicial killings.

¹⁰ UN doc /65/321 Philip Alston “Interim Report of the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions”, 30 (August 2010).

¹¹ UN doc A/HRC/23/47 “Report of the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions”, 63–74 and 89–97 (April 2013).

¹² UN doc A/HRC/31/66 “Joint Report of the Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association and the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions on the Proper Management of Assemblies”, 67(f) (February 2016).

considerable autonomy.¹³ While determining legality and accessibility of AWS, compliance with IHL and moral concerns are the ultimate standards.

ICRC has suggested that states shall put restrictions to regulate these weapons after determining the kind and type of human control required in attacks carried out by autonomous weapons, to ensure minimum respect and compliance for the IHL.¹⁴

The pertinent question concerning AWS remains what limits should be placed on the autonomy of these weapon systems so that to ensure compliance with IHL principles. The international community shall ponder over limits that shall be placed on the use of AWS, to ensure optimum utilization of their capacities while ensuring effective compliance with IHL.

General and specific Rules of IHL concerning means and methods of armed conflict:

The primary criteria to assess the lawfulness of any weapon is whether such weapon is specifically prohibited by any international treaty or convention. AWS is a novel weapon system still in the development stage and its military potential has not been fully understood yet. There is no specific treaty law either to regulate or prohibit the use of these technological weapons. States have just started deliberation and discussion over these weapon systems, but still, there is a long way to go to achieve uniform standards to regulate them.

The rules in the present legal regime are essentially established by IHL treaties (apart from rules of customary IHL) principally including The

¹³ Dustin A. Lewis, "War-Algorithm Accountability", Research Briefing, Harvard Law School Program on International Law and Armed Conflict, 150 (August 2016).

¹⁴ Neil Davison, "A legal perspective: Autonomous weapon systems under international humanitarian law" 30 UNODA Occasional Papers (2016).

Geneva Conventions 1949, and Additional Protocols to the Geneva Conventions, 1977.¹⁵ Any weapon or weapon system which violates the principles of distinction, proportionality, precaution, and military necessity would be unlawful in some or all circumstances under IHL. The distinction principle mandates parties to make a clear distinction between civilians, hors de combat (non-combatant military personnel), and civilian objects, from active military combatants and military objectives at all times during an armed conflict.¹⁶ The principle is outlined by the rule that prohibits direct attacking against civilians, civilian objects, and hors de combats meaning thereby the military combatants who no longer are participating in the hostilities, rather attack directed only against the active military combatants and military objectives is lawful.¹⁷ Thereby making it clear that parties to any armed conflict can only attack the military objects. If parties to the armed conflict employ any weapon which is of nature that cannot be used in the attack against the particular military objects or the consequences of which cannot be restricted to the military advantages then such attack or method or warfare shall be unlawful under IHL.¹⁸

The principle of proportionality impliedly acknowledges incidental harm and loss against civilian lives and civilian objects during an armed attack. This rule signifies that for any attack which causes ancillary harm to civilian lives and civilian objects, such harm shall not exceed anticipated direct and apparent military objectives.¹⁹ Any attack in which expected or

¹⁵ Jean-Marie Henckaerts and Louise Doswald-Beck, “Customary International Humanitarian Law Volume I: Rules” (1-86) 1 ICRC (2005).

¹⁶ Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 1977 Article 48. (Customary IHL Database the ICRC)

¹⁷Id. at articles 51(2) and 52(1).

¹⁸ Id. at Article 51(4)(a).

¹⁹ Id. at Article 51(5) (b).

actual civilian harm is more than anticipated military advantage will be unlawful.

The principle of precaution signifies during active hostilities in an armed conflict, the parties need to take continual precautions to safeguard civilians and civilian objects against any harm.²⁰ These parties are required to take all possible measures to prevent direct attacks against civilians and civilian objects. They should choose weapons of conflict so as to prevent and limit collateral damage to civilians and their objects. Any attack violating these principles is unlawful and shall be refrained from by the parties to the conflict. Any attack where the direct objective is not the military one and that may violate the principle of precaution and proportionality shall be suspended by the parties.

The principle of military necessity permits the parties to take all measures to accomplish legitimate military objectives. The parties shall make sure that these military objectives are not otherwise prohibited by the rules of IHL. This principle runs counter to the humanity principle and IHL tries to make the balance between both of them. In furtherance, the rules provide that a single military objective situated in an area with a significant population of civilians and civilian objects cannot be classified as distinct and independent military objectives.²¹

Apart from these general principles, there are specific rules to prohibit employing any weapons or techniques of conflict, whereby any weapon which causes unnecessary suffering or superfluous injury.²² The weapon is indiscriminate by nature meaning thereby cannot be used only against the military objective, it is not able to differentiate the civilians, civilian

²⁰ Id. at Article 57(1).

²¹ Id. at Article 51(5)(a).

²² Id. at Article 35(2).

objects from military objectives.²³ The weapon is capable of causing extensive, long-term harm and severe damage to the natural environment.²⁴

The humanity principle i.e. The Martens Clause is crucial to assess the AWS because it creates a balance between IHL standards and ethical concerns. It specifies that the protection of combatants and civilians can be ensured by customary IHL, the concept of humanity, and dictates of public morality in situations not covered by current IHL treaties.²⁵ This approach assists in addressing new means and methods of conflict by removing the presupposition that anything which is not specifically prohibited is permitted.

There are several ethical issues raised by the effective use of autonomous weapons in armed conflicts such as the role and responsibility of humans in armed conflict and deciding on death over the life of a human being by a machine. Putting the use of force beyond the control of human combatants brings a sense of discomfort to the public conscience also. Any weapon including AWS which due to its inherent characteristics cannot respect and comply with these general principles and specific prohibitions of IHL is unlawful. These are the basic criteria to assess the legality of any weapon system under the purview of the rules of IHL.

Employing Fully-autonomous weapon systems in contemporary armed conflicts:

In March 2020, a United Nations report published by the New Scientist²⁶ revealed that government forces may have used fully autonomous drones.

²³ Id. at Article 51(4)(b) and (c).

²⁴ Id. at Articles 35(3) and 55.

²⁵ Id. at Article 1(2).

²⁶ David Hambling, "Drones May Have Attacked Humans Fully Autonomously for the First Time" New Scientist (June 2021), <https://www.newscientist.com/article/2278852-drones-may-have-attacked-humans-fully-autonomously-for-the-first-time/>.

These drones targeted the forces of Khalifa Haftar, who were besieging the capital, Tripoli, in the spring of 2020. It also chased and clashed with logistical convoys and the retreating forces of Haftar.²⁷ The report identified Turkish UAVs as UCAVs and kargu-2s²⁸ as among the autonomous weapons used. In the same report, United Nations experts remarked that Lethal Autonomous Weapon Systems (LAWS) were designed to strike their targets without the need for contact with a human operator and identify their targets independently. If this allegation is confirmed, this would be the first-time autonomous weapons have been used in armed conflict. Moreover, if these killings are confirmed, this would be the first case of the use of artificial intelligence during an armed conflict.²⁹ Although the drone in Libya mentioned by the UN report does not operate independently as we can imagine, only talking about the availability of this possibility poses urgent problems. Thus, this means that the autonomous weapons systems that were used in Libya are independently capable of searching and targeting targets without prior human confirmation from the operator. Therefore, the use of such drones increases the possibility of targeting civilian targets indiscriminately and violating the basic principles of international humanitarian law.

The UN report also reflects several important points, as this technology can be easily adapted to most drones used in the commercial field at a low

²⁷ Will Knight, "Autonomous Weapons Are Here, but the World Isn't Ready for Them" *Wired* (December 2021), <https://www.wired.com/story/autonomous-weapons-here-world-isnt-ready/>.

²⁸ The Turkish drone Kargu-2, AS, used in the Libyan civil war in 2020, is two feet long, weighs about 15 pounds, and is an autonomous drone.

²⁹ Zachary Kallenborn, "Was a Flying Killer Robot Used in Libya? Quite Possibly" *Bulletin of the Atomic Scientists* (May 2021) https://thebulletin.org/2021/05/was-a-flying-killer-robot-used-in-libya-quite-possibly/?utm_source=Twitter&utm_medium=SocialMedia&utm_campaign=TwitterPost052021&utm_content=DisruptiveTechnology_WasAFlyingKillerRobotUsedInLibya%3F_05202021.

price. This means that access to autonomous weapons is no longer confined to rich and developed countries. That is why it has become urgent for the international community to accurately define autonomous weapons since without this definition it would be impossible to control and regulate sales of these drones and monitor their spread across the world. The importance of the UN report also lies in the fact that, it is necessary to talk through an official international document about suicide drones and autonomous weapon systems.

Moreover, as for the ongoing Russian-Ukrainian war, reports indicate that Moscow has deployed drones carrying Kalashnikov munitions “ZALA Aero KUB-BLA”³⁰, which are small drones with artificial intelligence techniques that make them able to track targets without any human intervention³¹ while Ukrainian forces used Bayraktar TB2³² which has some operator-independent capabilities.

Semi-Autonomous Weapon Systems in the current armed conflict:

Drones were once the preserve of the great military powers, but now they are no longer. The drone became the weapon of choice for the United States against jihadist groups in Afghanistan, Iraq, Yemen, and elsewhere more than two decades ago. In Yemen, for example, the United States of America has conducted targeted killing operations since 2002, and it has been shrouded in secrecy. Neither the US government nor the Yemeni

³⁰ “The little drone, known as a loitering munition with a maximum range of 40 kilometres, is difficult to detect and is equipped with a kilogram of explosives packed with lethal metal ball bearings. The drone has a maximum speed of 130kph and can carry a 3kg payload, which includes a camera and a bomb. It has apparently proven effective when used by the Russian military against rebels in Idlib, Syria.” Thomas Harding, “Russia’s KUB-Bla Kamikaze Drone Intercepted in Ukraine” *The National* (March 2022), <https://www.thenationalnews.com/world/uk-news/2022/03/14/russias-kub-bla-kamikaze-drone-intercepted-in-ukraine/>.

³¹ *Id.*

³² Unmanned aerial vehicle manufactured in Turkey that has autonomous capabilities without the requirement for human interaction. Baykar, “Bayraktar TB2” BAYKAR Technology, <https://www.baykartech.com/en/uav/bayraktar-tb2>.

government has disclosed data and information related to the civilian deaths and injuries of the drone strikes. In front of the spread of secrecy imposed by governments. The same thing happened in Afghanistan. The report "Death by Drone Strikes" prepared by the Open Society Justice Initiative³³ documented the US drone strikes that had caused the killing and wounding of civilians in Yemen and also constituted a breach of the principles of international humanitarian law (discrimination, proportionality, military necessity, and humanity).

Distinction principle violation instances:

Where drone strikes have resulted in 26 civilian deaths and 13 civilian casualties, these numbers cast doubt on the Yemeni government's statements regarding the accuracy of US drone strikes and their capacity to conform with the distinction principle. Whereas the air attacks raise questions about the United States' commitment to international law, particularly in light of the January 23, 2013 attacks on a civilian house containing 19 civilians in the village of Silat al-Jarrah and the September 2, 2012 raid that resulted in the deaths of 12 civilians, including three children and a pregnant lady.³⁴ This reflects a clear violation of the principle of discrimination.

Another example of the inability of drones to fully comply with the principle of distinction. a drone strike in Afghanistan on April 6, 2011, led to the accidental killing of a Marine and a Navy nurse in a Predator strike after Marine commanders mistakenly mistook them for the Taliban. In five years, the US military launched more than 50,000 strikes in Afghanistan, Syria and Iraq. It has admitted to killing 1,417 civilians by mistake in

³³ Open Society Justice Initiative, "Death by Drone Civilian Harm Caused by U.S. Targeted Killings in Yemen" (2015), <https://www.justiceinitiative.org/uploads/1284eb37-f380-4400-9242-936a15e4de6c/death-drones-report-eng-20150413.pdf>.

³⁴ Id.

strikes in Syria and Iraq since 2014. According to US Department of Defense documents, only 4 per cent of errors in identifying the enemy resulted in civilian casualties. However, the field investigation conducted by the New York Times newspaper concludes that the rate of these accidents is 17 percent, during which one-third of the civilian casualties were killed and wounded.³⁵

In another example, a strike was carried out in November 2015 in the Ramadi region of Iraq after a man was spotted dragging an "unidentified heavy object" into a place under the control of the Islamic State (ISIS). It was later revealed, prepared after a review, that the object was a child killed in a raid.³⁶ Finally, the United States had to retract its assertion that a car destroyed by a drone on a Kabul Street in August was loaded with bombs. It was later revealed that the victims of the strike were ten members of one family.³⁷

Violation of the principle of proportionality and military necessity:

It was reported that the United States launched drone attacks in the border region between Pakistan and Afghanistan, killing about 100 fighters.³⁸ The US administration is hiding collateral damage to untargeted civilians. Including that the US government deliberately highlighted the news that a drone had carried out a strike in the village of Zangara, South Waziristan, which led to the killing of the leader of the Pakistani Taliban movement Baitullah Mehsud, and the alleged mastermind of the assassination of

³⁵ Azmat Khan, "Hidden Pentagon Records Reveal Patterns of Failure in Deadly Airstrikes", The New York Times (2021), <https://www.nytimes.com/interactive/2021/12/18/us/airstrikes-pentagon-records-civilian-deaths.html>.

³⁶ Id.

³⁷ Id.

³⁸ Alston, A/65/321 "Interim report of the Special Rapporteur of the Human Rights Council on extrajudicial, summary or arbitrary executions" (2010), <https://daccess-ods.un.org/tmp/9557446.83742523.html>.

former Pakistani Prime Minister Benazir Bhutto.³⁹ The report did not mention that this successful strike was preceded by fifteen other unsuccessful strikes to kill him, which led to the killing of nearly two hundred people, who are not prominent members of the Taliban, rather elderly tribal leaders, and children. The CIA justifies its 16 drone missile attacks that cost the lives of more than 321 individuals by citing the expected military advantage of targeting Mehsud.⁴⁰

Legal Review obligation: The way forward to legality of AWS:

State parties are under an obligation to do legal Review of any new weapons of armed conflict to make sure that hostilities are conducted in line with the IHL.⁴¹ State parties to the Additional Protocol-I, 1977 to the Geneva Convention are obliged to assess whether to use of new weapons including AWS of armed conflict complies with IHL under some or all circumstances.⁴² Assessment of the lawfulness of an AWS depends upon its particular characteristics, whether such weapon systems can be deployed in some or all circumstances in conformity with the IHL principles. Legal Review must be done in accordance with the broad principles of IHL pertaining to means and methods of armed conflict, general and particular prohibitions on specific weapons, and customary rules of prohibition. Which primarily includes the protection of civilians

³⁹ Reza Jan, “Drone Kills Top Taliban Leader and Al Qaeda Ally Wali-Ur-Rehman” Critical Threats (2013), <https://www.criticalthreats.org/analysis/drone-kills-top-taliban-leader-and-al-qaeda-ally-wali-ur-rehman>.

⁴⁰ Elie Kallab, “Drones and International Humanitarian Law: Compliance with the Rules of Jus in Bello” International Law Blog (December 2019) <https://internationallaw.blog/2019/12/03/drones-and-international-humanitarian-law-compliance-with-the-rules-of-jus-in-bello/>.

⁴¹ ICRC, “A Guide to the Legal Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977, Geneva”, (January 2006), www.icrc.org/eng/assets/files/other/icrc_002_0902.pdf.

⁴² Additional Protocol I, supra note 15, at Art 36, ICRC, “A Guide to the Legal Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977”, 4 (2006).

and hors de combat against indiscriminate attacks, protection against unnecessary suffering, and superfluous injury.

Such Legal Review of weapons can be carried out only if the full capabilities of the weapon are known, and all its consequences are foreseeable under all conditions. Since the targeting and attack of autonomous weapons are not under direct human control, the legality of an attack using AWS must be assessed at an earlier stage with high standards ensuring that such weapon would reliably operate as predicted and intended by the operator. This fact further raises the issue that the reliability and predictability of such AWS must be foreseeable under all circumstances before conducting its legal review. To ensure compliance with IHL, it is vital to understand the functioning and implications of AWS in all contexts in which it is intended to be utilized.⁴³ The assessment of the legality of AWS the parameters of rules of IHL, and moral and security considerations are important aspects.

Human Control mechanism for AWS:

State parties to the CCW agreed that considerable and actual human control over AWS during armed conflict is essential for ensuring compliance with IHL.⁴⁴ Some extent of human control over AWS can ensure compliance with legal and ethical considerations during its deployment in armed conflict. Respect and implementation of IHL principles in the conduct of hostilities are contingent on a certain degree of human involvement. However, states and parties to the armed conflict are obliged to respect IHL principles, but these rules are eventually practiced by the human combatants during conflicts and they are

⁴³ ICRC, “Autonomous Weapon Systems: Implications of Increasing Autonomy in the Critical Functions of Weapons”, Expert Meeting Versoix, Switzerland, 9 (March 2016).

⁴⁴ United Nations, Recommendations to the 2016 Review Conference submitted by the Chairperson of the Informal Meeting of Experts, para. 2.

responsible for the implementation and violation of these principles. Following it is essential to have some significant human control over AWS while they function in conflict, to ensure that these weapons act in accordance with the user's intention and it is also essential to comply with IHL principles, to put some limits on the autonomy of these weapon systems. Significant legal, ethical, and humanitarian consequences may result from the lack of meaningful and effective human control over AWS.⁴⁵ Human control requires the involvement of human agents in the development, deployment, and operation of AWS. This human agent is able to take all preventive and remedial measures to ensure respect and compliance with all the legal requirements. If these autonomous weapon systems are launched without necessary human control and legal judgments by the commander it will not be in consonance with the rules of IHL.

Human control signifies the knowledge about the functioning of the AWS and the scope of human intervention during its development, operation, and responsibility for the ultimate effects of the weapon system. Human control during the operation of AWS is of utmost importance, in cases where the effects of such weapons cannot be predicted fully. Human control ensures compliance with international obligations in all expected and intended circumstances for the use of AWS in all situations.

Before deploying any AWS in an attack operator or commander of that weapon must have sufficient knowledge and situational awareness about the functioning of the weapon system to guarantee its compliance with

⁴⁵ Michael C. Horowitz and Paul Scharre, "Meaningful Human Control in Weapon Systems: A Primer, Working Paper", Center for a New American Security (CNAS), (March 2015), https://s3.amazonaws.com/files.cnas.org/documents/Ethical_Autonomy_Working_Paper_031315.pdf.

IHL principles. However, once the weapon system is activated its performance depends upon various factors such as its pre-programming and the circumstances of its deployment, in such situations human control and the ability to intervene after activation is helpful to ensure compliance with IHL principles, even if the weapon system doesn't function as intended or predicted by its operator. This type of human control can be secured through technical and operational limits like limits relating to target, time frame, geography, and environment, whereby the human agent is able to supervise the functioning of AWS and deactivate it if required.⁴⁶ Thereby compliance with IHL principles necessitates limiting the legal autonomy of such weapon systems by putting forth significant and effective human control as an important element. We cannot fully rely on the competence of these weapon systems, since they are able to autonomously make decisions in such situations it becomes necessary to have human agents to keep track of the activities of such weapons and control it when required.

Conclusion:

These fast-pacing technical machines have revolutionized the armed conflict to a significant extent. Artificial Intelligence has entered into armed conflicts, where the creation of human beings is controlling other humans, and making the important decision about their life and death. States are striving hard to get these weapon systems and putting efforts to increase their autonomy placing them beyond human control. AWS has already taken its place on the battlefield during the conflicts of Libya and other states. However, Autonomous Weapon Systems are not being developed in the legal vacuum, like any other kind of weapon IHL will

⁴⁶ ICRC, "Autonomous Weapon Systems: Implications of Increasing Autonomy in the Critical Functions of Weapons", ICRC, Geneva, 10-14 (September 2016).

also govern the use of these weapon systems.⁴⁷ Since the legality of any weapon under IHL is determined by the general and specific restrictions. AWS is not specifically restricted under any treaty and rule under IHL, and they are capable of being used within the existing IHL framework if properly regulated and restricted. This being said such weapon systems cannot be asserted *prima facie* illegal. The international community is openly debating what restrictions should be imposed on the development and operation of AWS.⁴⁸

The general and specific rules of IHL relating to means and methods of warfare, so far put limits on the development and operation of AWS. To ensure compliance with rules of IHL principles, the developer and operator of these weapon systems are required to sufficiently and reliably foresee the effects of AWS, to make sure that these weapon systems do not violate any of the IHL rules in some or all circumstances in which they are deployed. Under all situations, the operation of AWS must be administered in compliance with the regulations to govern the conduct of hostilities, particularly the principles of IHL. The significant human control over the development and operation of AWS helps to maintain continuous compliance with these principles. Moreover, it also makes attribution of responsibility in matters of violation feasible, by tracing the development and operation to the human agent. In the context to determine the legality of such weapon systems, there shall be a structure to foresee the effect and consequences of deploying them on the battlefield, to ensure

⁴⁷ CCW/GGE.1/2019/3, “Report of the 2019 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems”, CCW Convention, Group of Governmental Experts (GGE) on Emerging Technologies in the Area of LAWS, (25 Sep. 2019), Annex IV, ‘Guiding principles’, para. (a).

⁴⁸ CCW/GGE.1/2020/WP.5, “Working paper by the Bolivarian Republic of Venezuela on behalf of the Non-Aligned Movement (NAM) and other states parties to the Convention on Certain Conventional Weapons (CCW)”, CCW Convention, GGE LAWS, (14 Sep. 2020).

that they are being used in accordance with the rules of IHL. Further engagement of human agent having effective control over the operation of such weapons is essential to make the attack lawful.

To ensure due compliance with IHL rules uniform standard needs to be developed by the states and international organizations altogether regarding the development and operation of AWS, and how the autonomy of these weapon systems shall be dealt with, which has introduced a lack of foreseeability while operating them. States shall put more effort into deliberating upon how to ensure respect to IHL while using an AWS in any armed conflict, by identifying regulations and restrictions on these weapon systems which are required under IHL. The regulation and restriction of these AWS under existing IHL is a debatable issue for the national and international community. They should come together to ponder over it and specify the standards and practical use of such weapon systems in future armed conflicts with compliance of IHL. Not only legal ethical principles shall also be clarified in order to limit the unlawful effects of these weapons and ensure IHL obligations are complied with. This can be done by developing norms to limit the lawful levels of autonomy, having effective human control, and developing international standards to ensure compliance with legal obligations.