Group of Governmental Experts of the High Contracting Parties to 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

ELEMENTS FOR A FUTURE NORMATIVE FRAMEWORK CONDUCIVE TO A LEGALLY BINDING INSTRUMENT TO ADDRESS THE ETHICAL HUMANITARIAN AND LEGAL CONCERNS POSED BY EMERGING TECHNOLOGIES IN THE AREA OF (LETHAL) AUTONOMOUS WEAPONS (LAWS)

Submitted by Brazil, Chile and Mexico

General Introductory remarks

Emerging technological developments and the digital transformation they entail have permeated every aspect of our life. The COVID 19 pandemic and the accelerated reliance on digital technologies it brought along has shown that technologies have positive aspects empowering individuals and groups in physical world through new tools such as automation, predictive analytics and robotics, but it has also made abundantly clear that in and of themselves technologies are not "beneficial" nor "neutral".

Technology has always played a central role in international politics; it shapes the ways that states fight during wartime and compete during peacetime. In this regard, emerging technologies pose concrete challenges to peace, stability and security and raise new ethical, legal, political and humanitarian questions about how power is understood and utilized and the role of humans in war and conflict and most importantly when using force.

Not only does technology have the potential to redefine the balance of power in international relations, but also, put into question the traditional role of states in international affairs as well the relationship between state, society and individuals.

Thus a holistic, multidimensional understanding of technology and specifically of the interdependency of new technologies is sorely needed, in order to fully grasp its shaping, annulation and magnifying effects over human agency. The human rights and humanitarian impacts and consequences of the interplay between emerging technologies must be duly monitored.

Today, the rapid pace of developments in and diffusion of technology render laws and regulations obsolete, hence efforts must be made to create *"technology neutral"* regulations, focusing on the effects and impacts of particular military applications of technologies rather than regulating specific technologies themselves which are in continued evolution feature and capabilities wise.

In its origin, the intergovernmental debate on AWS at the UN level started in the Human Rights Council and was subsequently referred to the Convention on Certain Conventional Weapons (CCW). In 2013, the late Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, Professor Christof Heyns, addressed the issue in a seminal report[1], whose summary reads as follows:

Lethal autonomous robotics (LARs) are weapon systems that, once activated, can select and engage targets without further human intervention. They raise far-reaching concerns about the protection of life during war and peace. This includes the question of the extent to which they can be programmed to comply with the requirements of international humanitarian law and the standards protecting life under international human rights law. Beyond this, their deployment may be unacceptable because no adequate system of legal accountability can be devised, and because robots should not have the power of life and death over human beings. The Special Rapporteur recommends that States establish national moratoria on aspects of LARs, and calls for the establishment of a high level panel on LARs to articulate a policy for the international community on the issue.

At the time the report was presented, several countries called out for the topic to be addressed in the CCW. The report of the Secretary General on the work of the Advisory Board on Disarmament Matters (July 2013) also suggested that the Secretary General should promote coordinated efforts in an existing forum, such as the Conventional Weapons Convention*, to address the possible need for disarmament measures in respect of potential future fully autonomous systems.*

On 15 November 2013 the CCW decided to begin addressing AWS. After nine years of the first official presentation of the issue in the UN framework, and eight years of discussions in the framework of the CCW, the Group of Governmental Experts (GGE) has amassed a comprehensive knowledge base repository, in which there are distinctive points of convergence that call for substantive recommendations on the normative and operational framework.

From a broad perspective, as with most of all emerging technologies, lethal autonomous weapons systems raise various ethical and societal questions, which have remained, to a large extent, at the outskirts of the current debate. Nevertheless, precisely because of their impact on the right to life and human dignity, the use of force, increasingly mediated through technology, must consider ethical considerations and their societal implications as the main parameters on which to confront these challenges. The question is not if we "can" but if we should remove meaningful human control from the decision to kill or injure / harm another human being.

Ethical concerns are of paramount importance with regard to emerging technologies in the area of AWS. The development and the use of AWS brings into question the fundamental ethical question of whether decision-making on the use of force, and, more specifically, on matters of life and death, should be retained by humans or could be taken

[1] Report of the Special Rapporteur on Extrajudicial, summary or Arbitrary Executions, Christof Heyns, A/HRC/23/47 (9 April 2013)
http://ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session23/A-HRC-23-47_en.pdf

by machines, regardless of the capacity of the latter components, particularly algorithms and sensors.

Beyond the very real concerns regarding the technical capacity of autonomous weapons systems to function within legal and ethical constraints (vg. issues of predictability and reliability), the ethical perspective should guide the work of the GGE on retaining human agency and intent in the decisions to use force, ensuring state responsibility as well as individual accountability, and upholding the principles of humanity and human dignity.

From a legal perspective, it remains highly questionable whether lethal autonomous weapons systems are able to be used in compliance with key provisions of International humanitarian law and human rights law, given the uncertainties and complexities of wartime environments. There is an implicit requirement for meaningful human control imbedded in IHL, notably *vis-à-vis* the principles of distinction, proportionality and military necessity. Similar requirements are also at the core of international human rights law.

Another legal issue concerns lack of accountability, the so called "accountability gap". Who would be responsible for the actions of a lethal autonomous weapons system? How could law be exacted on the basis of individual criminal responsibility?

There are compelling reasons to believe that the deployment of AWS without sufficient human control lead to a moral hazard that might entail violations to IHL. The deployment and use of autonomous weapons creates unique challenges for the respect of IHL in the battlefield. They cannot be considered combatants or fighters, and they may operate without direct supervision of the military commander. Therefore, should there be violations of IHL, it is not clear who would be legally responsible. Accountability is of utmost importance. Parties to armed conflict have a duty to investigate war crimes, and if appropriate, prosecute suspected perpetrators. The prospect of legal accountability helps to prevent the commission of violations of IHL.

From an arms control perspective, lethal autonomous weapons raise concerns regarding asymmetric warfare and lowering the threshold for nations to start wars, as well as conflict escalation. Removing human combatants from the conflict area reduces casualty rate, albeit among one´s own forces. Not necessarily overall (civilian casualties) and the political costs of going to war. This condition fuels arms races and adds to global and regional insecurity and instability.

The major concern for our delegations is how to address these unprecedented, qualitative changes in the conduct of hostilities in a manner that is consistent with the principles of humanity and human dignity. In this regard, the concerns and questions raised by the 2013 report are still valid.

Recommendations towards a normative framework

1. The discussions in the GGE have highlighted the following key elements to take into account when discussing the normative framework for AWS. From our perspective, it is difficult to envisage a clear differentiation between the normative and operational

framework, as the second clearly derives from the application of existing and future norms of conduct. In our view, the normative framework is the priority and should take the form of a legally binding instrument.

2. International Law, particularly IHL, International Human Rights Law, International Criminal Law, and the principles enshrined in the Charter of the United Nations, fully apply to the development and the use of AWS.

3. The Martens Clause has proved to be an effective means of addressing the rapid evolution of military technology by prohibiting certain types of weapons, either due to their indiscriminate effects or because of the unnecessary suffering they could cause to combatants. This Clause, whose continuing existence and applicability is not to be questioned, is an affirmation that the principles and rules of humanitarian law apply to weapons systems based on emerging technologies in the area of AWS.

4. In all cases and circumstances relating to AWS not covered by existing international agreements or custom, the Martens Clause—as contained in customary international law, and in the Preamble to the Convention on Certain Conventional Weapons[2]— applies. Therefore, States shall ensure that the use of autonomous weapons systems do not contravene principles of international law derived from established custom, from the principles of humanity and from the dictates of public conscience.

5. The following IHL core legal obligations are of a universal nature and, therefore, shall necessarily be respected in the conduct of hostilities, including with regard to the use of AWS:

5.1. to ensure distinction between military objectives and civilian objects, combatants and civilians, and active combatants and those *hors de combat*;

5.2. to determine whether an attack may be expected to cause incidental civilian casualties and damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated, as required by the rule of proportionality;

5.3. To cancel or suspend an attack if it becomes apparent that the target is not a military objective or is subject to special protection, or that the attack may be expected to violate the rule of proportionality, as required by the rules on precautions in attack.

6. Meaningful human control shall be ensured so that the use of such systems is compliant with applicable international law, in particular with international humanitarian law.

7. In determining the quality and extent of human control, a range of factors should be considered, during all/different stages of a weapon's development and use, the operational context and the characteristics and capabilities of the autonomous weapons

[2] "Confirming their determination that in cases not covered by this Convention and its annexed Protocols or by other international agreements, the civilian population and the combatants shall at all times remain under the protection and authority of the principles of international law derived from established custom, from the principles of humanity and from the dictates of public conscience."

systems as a whole. Possible interactions with other AWS or technologies must also be taken into consideration.

8. Choices made exclusively by algorithms integrated in autonomous weapons systems, with regard to the selection of targets or the use of force, shall never be considered tantamount to human control.

9. We fully agree with the ICRC which has considered "autonomous weapon systems" an umbrella term encompassing any weapon system with autonomy in the critical functions of selecting and attacking targets. In other words, the user does not choose the specific target. The fundamental characteristic would be the role of the human user, avoiding technical definitions that might be soon outdated and might lead to unnecessary sub-classifications not needed for effective regulation and possibly outdated from a technological perspective as well.

10. International responsibility rules shall apply to the use of weapons systems based on emerging technologies in the area of AWS. States and individuals shall remain responsible for violations of international law, including international humanitarian law, incurred during the development and use of those weapons systems.

10.1. In the development and use of AWS, States shall take measures to ensure that responsibility can be attributed to States and individuals throughout the development and use of AWS, from the definition of military, strategic and operational-level objectives, to the research and development, design, manufacturing, deployment and use.

10.2. Decisions on the use of AWS shall be made within an established chain of human command and control, so as to allow for legal assessments regarding conduct, intent and causality, before, during and after the use of AWS.

11. In the study, development, acquisition or adoption of any AWS, States must be able to determine whether its employment would, in some or all circumstances, be prohibited by IHL or any other applicable rule of international law.

It is to be noted, that review of weapons, involving techniques or tools related to artificial intelligence (AI) is complex. As has been pointed out by the ICRC, *AI will inevitably introduce uncertainty into the functioning of a weapon—meaning that the reviewer cannot predict with a reasonable degree of certainty all the outcomes of using the weapon. This unpredictability can arise through the weapon's design or the interaction between the system and the environment of use. Foreseeing effects may become increasingly difficult as weapon systems become more complex or are given more freedom of action in their tasks, and therefore become less predictable. Uncertainty about how a weapon will perform in the field undermines the ability to carry out a legal review, as it makes it impossible for the reviewer to determine whether the employment of the weapon would in some or all circumstances be prohibited by IHL or other rules of international law*[3].

[3] Goussac Netta, https://blogs.icrc.org/law-and-policy/2019/04/18/safety-net-tangled-web-legal-reviews-ai-weapons-war-fighting/

In this regard, a reviewer will need to be satisfied that the proposed AI design and its method of use will not prevent the operator or commander from exercising the judgments required by IHL.

Recommendations on prohibitions and regulations:

Notwithstanding the above stated, taking into account the specific ethical, legal and general societal questions raised when removing human decision making from the application of force there is a clear need for establishing a set of specific rules to regulate the development and the use of AWS, and shed light over grey areas in which we have to ensure that international law, in particular IHL, is fully observed for the sake of the principle of humanity and human dignity.

We therefore affirm the need to continue the codification and progressive development of the rules of international law, including those applicable in armed conflict.

This new normative framework is necessary to avoid a fragmented approach through national measures, which might give leeway to dispersion and lack of homogeneity in the measures, contrary to the interest of having an international benchmark from which compatible national measures are implemented.

In this regard, the delegations of Brazil, Chile and Mexico propose the following outline of a normative framework, conducive to an instrument establishing prohibitions and regulations:

1. Due to the challenges presented by the nature of AWS, in order to fully comply with key legal obligations and ethical precepts, States shall:

1.1. Prohibit the development and the use of AWS that cannot be controlled by humans, therefore subject to cognitive and epistemological limitations, as well as algorithm bias.

1.2. Prohibit the development and the use of AWS whose programming might remove human control over critical functions related to the use of force.

1.3 Prohibit the development and the use of AWS that cannot be used in compliance with IHL, including AWS that:

1.3.1. Cannot be directed at a specific military objective;

1.3.2. Cause superfluous injury or unnecessary suffering; or

1.3.3. Have effects that cannot be limited as required by IHL.

1.4. Prohibit the development and use of AWS whose effects cannot be sufficiently understood, predicted and explained.

1.5. States shall prohibit the development and the use of AWS that preclude attribution of State and individual legal responsibilities for the consequences of their use.

2. Positive obligations, in the form of regulations, should be developed to ensure humans exercise control in the use of AWS, in line with their obligations under IHL and ethical requirements, notably in terms of:

2.1. Ensuring that sufficient human control is exercised over the critical functions of AWS of target selection and application of force throughout the development and use of the weapon.

2.2. While recognizing that the nature and degree of human control may vary during all/different stages of a weapon´s development and use, a human agent shall:

2.2.1. Be certain that there are adequate environmental limits in place, including spatial and temporal limits;

2.2.2. Be fully aware and approve any decision on determining the operational context through a sufficient level of situational awareness;

2.2.3. Be certain on the reliability and predictability in the identification, selection and engagement of targets;

2.2.4. Take the necessary precautions during the conduct of operations to ensure that a weapons system is not able to change mission parameters without human validation.

2.2.5. Allow for constant human supervision and ensure intervention where necessary as to be able to:

2.2.5.1. Interrupt and deactivate the weapon during its operation phase.

2.2.5.2. Verify that auto-deactivation functions as intended when this would be required in the legal assessment of the user.

2.2.6. It is the responsibility of commanders and operators to ensure that they can comply with their legal obligations in the deployment and use of AWS.

3. In order to comply with the obligation that States must prosecute and punish crimes under international law, States should ensure that there are means to conduct effective investigations, prosecution and punishment for violations incurred during the use of AWS, so as to ensure state and individual responsibilities and prevent an accountability gap.

4. As a complimentary measure to those referred in sections 1, 2 and 3, regulations on the review of AWS, must include an assessment that allows for the understanding of their attributes and effects, in particular:

4.1. Its design and characteristics;

4.2. Its technical performance, including in terms of reliability and predictability and whether its foreseeable effects are capable of being limited to military objectives and controlled in time and space;

4.3. Its intended or expected use; and

4.4. The placement of adequate limits on tasks and types of targets, in particular there must be certainty that they are not prejudiced by technological or social biases.

4.5. Whether its employment in some or all circumstances would be prohibited under international humanitarian law and international law.

5. Legal reviews of AWS should adopt a precautionary approach and deny authorization when there might be less than full certainty of all the characteristics listed in the paragraph above.

Understanding the unviability of full disclosure by States of every aspect of a legal weapons´ review due to strategic, defense, intellectual property and other considerations, there should be a parallel process to determine the specific characteristics that weapons systems reviews should have related to the use of emerging technologies. As such, a GGE within the CCW might be established to consider this issue.

Taking into account technological advancements which impact weapons systems based on emerging technologies, States may need to identify additional recommendations, provided that such additions are guided by the principles of humanity and the dictates of public conscience.

Such recommendations may include additional prohibitions and regulations on weapons systems based on emerging technologies in the area of AWS, including elements of an effective verification mechanism.

Any further recommendations shall be grounded so as to preserve human control and to avoid any accountability gap.

Procedural Recommendations

Brazil, Chile and Mexico are of the view that the most fruitful result from the works of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems would be to recommend to the Sixth Review Conference of the CCW to start negotiating a normative framework for emerging technologies in the area of lethal autonomous weapons systems, conducive to a legally-binding instrument that would provide a proper normative framework for addressing the challenges posed by AWS.

Brazil, Chile, Mexico stress the urgency to develop legally binding rules.

Brazil, Chile, Mexico propose the following text as recommendation for the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems for the Sixth Review Conference of the Convention on Certain Conventional Weapons:

The Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems recommends to the States Parties that it would continue its work in the year 2022 with the following mandate:

1. To continue to explore the issue of "*Emerging Technologies in the Area of (Lethal) Autonomous Weapons Systems".*

2. To establish the Group of Governmental Experts on Emerging Technologies in the Area of (Lethal) Autonomous Weapons Systems.

3. To provide the GGE with a mandate to negotiate a normative framework for emerging technologies in the area of lethal autonomous weapons systems, conducive to a legally binding instrument, in accordance with Decision 1 of the Fifth Review Conference of the High Contracting Parties to the Convention (CCW/CONF.V/10).

   These negotiations would establish the scope, format and objective of this framework, consistent with Article I of the Convention as amended at its Second Review Conference.

   The negotiations should focus on establishing prohibitions and regulations and other appropriate measures, to ensure the respect of the legal and ethical considerations with regard to these types of weapons.

4. To organize a Joint Special session of the GGE with the participation of the Special Rapporteur on extrajudicial, summary and arbitrary executions, to consider the development of the issues and challenges concerning AWS, with relation to their respective mandates, regarding the requirements of IHL and the standards protecting life under international human rights law, respectively.

5. To establish a Group of Governmental Experts on Weapons Legal Reviews and Emerging Technologies, tasked with identifying best practices and specific challenges, as well as determining and, if applicable, recommend new rules to ensure their effectiveness.

6. To establish a Technology Advisory Board in the field of international security integrated by policy and technology experts in order for member states to be kept informed of developments in the area of emerging technologies.

Conclusions

The considerations mentioned above stem from the substantive discussions within the Group of Governmental Experts on Emerging Technologies in the Area of (Lethal)

Autonomous Weapons Systems for the past years. They provide a basis for a framework that ensures the full applicability of international law, including IHL, as well as the need to develop additional legally binding norms based on ethical standards, with regards to AWS.

A future normative framework must strike a balance between military necessity, humanitarian considerations and ethical concerns. In our view, such a balance can be attained by the development of legally binding norms, in the form of a new protocol to the CCW.

Innovation and regulation need not be at odds. The history of technological innovation shows that the innovation in and of itself is not what matters: on the one hand you have the risks generated by hardware and software, but on the other hand -and the most important risk factor hinges on two questions: *why and how* we use it. At its core the main concern must be how we embed our fundamental values in each and every step of the development and deployment of the systems.

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