NOTE

on addressing the humanitarian, legal, security, technological and ethical challenges and related concerns raised by lethal autonomous weapon systems (LAWS)

Today, among the challenges facing international law, in addition to the increase in asymmetric conflicts (hybrid warfare), the involvement of armed forces of third states in regional conflicts affecting several states, the proliferation of weapons of mass destruction, is the warfare waged by means of lethal autonomous weapons systems (LAWS).

LAWS also poses global risks to peace and security, including proliferation risks, also to non-state armed groups. The outcome of combat employment and the achievement of objective and purpose by semi-autonomous systems confirms that fully autonomous weapon systems will become increasingly feasible for military leaders. The development of LAWS is recognized as occurring, or expected to materialize, by many likely equal or asymmetric adversaries.

Major powers' approach to LAWS is driven largely by the perceived threat from adversaries, combined with lessons learned from ongoing conflicts about what the future battlefield will look like. Military strategists consider information dominance on the battlefield to be decisive and see LAWS as the right technology, as an essential element, to achieve this goal. The combination of the use of different types of LAWS, together with countermeasures against these systems, will be the aspect on which the world's militaries will place great emphasis.

Autonomy/automation is the application of artificial intelligence (AI) for certain tasks, some of which could involve robotics and therefore automated or autonomous weapon systems. There are different variants of autonomy in terms of function and sophistication. These distinctions exist along a continuous sequence from discrete automated systems, to more capable and goal-oriented autonomous systems. Today, around the globe, at least thirty states have weapons that can seek out and destroy enemy targets on their own.

AI essentially allows robotic devices to operate without human intervention, relying to some extent on their interaction with the environment.

The main technology challenges are: interoperability and modularity; communication systems, spectrum and resilience; security: research and intelligence/protection of technology; resilience, persistence; autonomy and cognitive behaviour and weaponry. Addressing these technologies in a concerted manner can produce dramatic developments that facilitate mission performance, resilience, reliability and synchronisation at reduced levels of human risk and logistical accountability.
The use of LAWSs will be essential for operations in all phases of any type of conflict, both because of their capability and performance advantages, and because of their ability to take greater risks than military-operated systems. The increased speed and effects of warfare, combined with an exponential increase in available data, have led military leaders to advocate for the provision of better command and control systems that would optimise situational awareness, rapid decision-making and the ability to lead forces in multiple theatres of operations (air, space, cyber, land, naval). The use of AI is expanding across a wide range of sectors. The world's major powers are currently researching new applications for AI to maintain an asymmetric advantage over adversaries. There are many key energies driving efforts to develop LAWS, including the changing international security environment and affordable technical solutions and military effectiveness. Given these circumstances, militaries will develop and deploy affordable, flexible, interoperable, integrated and technologically advanced unmanned capabilities.

Autonomous weapon systems (also referred to as "out-of-loop/process" operators) are "a weapon system that, once activated, can select and strike targets without further intervention by a human operator". Examples include some "lurking" munitions that, once launched, seek out and engage intended targets (e.g. radar installations) over a specified area and without further human intervention, or weapon systems that autonomously use "electronic jamming" to disrupt communications. A weapon system with "full autonomy" in target selection and attack potentially provides additional capabilities in force protection, especially in situations where time is limited, and additionally eliminates risks to the weapon system user and the living force. These systems can provide savings in personnel, associated costs and potential use for "routine, immoral, dangerous and intense" missions. Fully autonomous weapon systems may not be useful in low-intensity conflicts, but could be useful in high-intensity conflicts against military targets and in very limited circumstances. These could include time-critical defensive situations, especially those where the tempo of operations and time pressure for a response are pressing.

The problem is not that technical equipment will make such errors and operators will not. The difference between human error and algorithmic error is like the difference between sending a letter and making a post on a social media app. The size, scope, and speed of killer bot systems - directed by a targeting algorithm, deployed across an entire continent - could make misidentifications due to individual operators look like simple approximation errors by comparison. However, large-scale proliferation is equally negative. States could compete to develop increasingly devastating versions of autonomous weapons, including those capable of handling chemical, biological, radiological and nuclear weapons. The moral dangers of escalating lethality of weapons would be magnified by escalating the use of weapons. High-performance autonomous weapons may lead to more frequent wars because they will diminish two of the essential forces that have prevented and shortened wars: concern for civilians in all areas and concern for one's own soldiers. Weapons are likely to be equipped with costly ethical
regulators designed to minimise collateral damage, using what is called the "myth of the surgical strike" to quell moral outcry. Autonomous weapons will also reduce both the requirement and the risk to their own soldiers, dramatically altering the cost-benefit analysis that states face in launching and sustaining wars. Asymmetric wars - i.e. wars fought on the territory of states that do not have competing technology - are likely to become more frequent.

LAWs do not have a single, binding definition for all States, and the circumstances for prohibiting the development and military use of LAWs are not expressly and unequivocally regulated in existing international treaties. Neither are the mechanisms of international and national supervision, control and legal accountability for the development and military use of LAWs regulated.

In order to better understand the technical, military, legal and humanitarian aspects of the development and use of LAWs, the independent experts and the International Committee of the Red Cross have presented the definition of LAWs - as weapons that can independently select and engage targets, i.e. have autonomy in the 'critical functions' of discovering, tracking, selecting and engaging targets (Report of the ICRC Expert Meeting on 'Autonomous weapon systems: technical, military, legal and humanitarian aspects', 26-28 March 2014, Geneva). Depending on the level of autonomy and the level of human control, autonomous weapon systems are divided by some states (US Department of Defense (2012) Autonomy in Weapon Systems, Directive 3000.09, 21 November 2012, Glossary, Part II Definitions) into three categories: semi-autonomous (operators are part of the process); human supervised (operators supervise); fully autonomous (operators are not part of the process).

The establishment of international bans on lethal autonomous weapons systems would be based primarily on respect for human rights and the principle of humanity, principles which are not only moral but also legal. The involvement of the individual in the decision-making process for the application of lethal force can be found in international humanitarian law governing armed conflict. This requirement is implicit in the principles of distinction, proportionality and military necessity, which are stipulated in international treaties such as the 1949 Geneva Conventions and the 1977 Additional Protocols thereto, and are firmly embedded in customary international humanitarian law.

Moreover, similar principles persist in international human rights law, which guarantees certain rights to all persons, regardless of their nationality or national law, in particular the right to life and the right to a fair trial under strict conditions established by law, which cannot be restricted or neglected, regardless of the development of automated and autonomous technologies.

According to Article 8(1) of the Constitution, the Republic of Moldova undertakes to respect the Charter of the United Nations and the treaties to which it is a
party, to base its relations with other states on the principles and rules of international law which are unanimously recognised.

In the legislation of the Republic of Moldova, this principle is enshrined in the Law No 595/1999 on International Treaties of the Republic of Moldova, which in Article 19 states: "International treaties shall be executed in good faith, in accordance with the principle pacta sunt servanda. The Republic of Moldova may not invoke the provisions of its domestic law as justification for non-execution of a treaty to which it is a party".

In this respect, the Republic of Moldova takes into account and fully respects the guidelines on new technologies in the field of autonomous lethal weapons systems (ALWS), as well as the provisions of international human rights treaties and international humanitarian law.

The Republic of Moldova is currently party to a number of international treaties in the field of international humanitarian law, including those dealing with victims of armed conflict, methods and means of warfare and international crimes.


Existing international humanitarian law contains principles and rules prohibiting in general the uncontrolled and unrestricted application of means and methods of warfare, including the application of SAAL (taking into account the IHL principles of distinction, proportionality, precaution, humanitarianism, military necessity; the "Martens clause"; the provisions of Article 35, Article 51(4)(c), Article 51(5)(a), Article 51(5)(b), etc. of the First Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts of 10.07.1977, Rules 12, 13, 14, 71 of the Rules of Customary International Humanitarian Law, etc.).

In the same context, existing international humanitarian law (Article 36 "New Weapons" of the First Protocol Additional to the Geneva Conventions, signed on 12 August 1949) provides that "in the research, development, acquisition or adoption of
new means or methods of warfare, a High Contracting Party shall be under an obligation to ensure that their use is not prohibited in certain or all circumstances by the provisions of this Protocol or by any other rule of international law applicable to that High Contracting Party."


In order to fulfil the international obligations assumed by the Republic of Moldova and to ensure compliance with the rules of the law of armed conflict by the military personnel of the National Army of the Republic of Moldova, the Instruction on the implementation of the rules of the law of armed conflict in the National Army of the Republic of Moldova was approved by Order of the Minister of Defence No 275/2006.

According to this Instruction, the work of commanders (chiefs) with regard to the preparation of large units, military units and sub-units for the fulfilment of missions assigned to them and their conduct during military actions must be carried out in compliance with the principles of the law of war. They, in carrying out the missions assigned to them, must ensure compliance with the rules of the law of armed conflict, providing for all possible preventive measures to avoid, and if this is impossible - minimise losses to the civilian population and damage to civilian property.

The fact that a violation of the law of armed conflict may be committed by a subordinate does not relieve his superiors of disciplinary or criminal liability. In the process of preparation and conduct of military actions, commanders (chiefs) of all levels are obliged to take into account certain limitations and restrictions on the application of force in the process of administrative activity.

Relevant obligations regarding the obligation to know and strictly observe the requirements of international law on armed conflicts are also contained in the Internal Service Regulations of the Armed Forces of the Republic of Moldova, approved by Presidential Decree No 2327/2009.

Moreover, the need to respect international humanitarian law during armed conflicts and combat operations, in the context of new technologies in the field of LAWS, implies the importance of applying the provisions of Articles 36 and 57 of the 1977 Additional Protocol I to the 1949 Geneva Conventions on 'New Weapons' and 'Precautions in Attack'.
In this respect, we agree that international humanitarian law also applies to these systems and that the decision to use them must be taken by the individual. Also in this context, states should consider, from the conceptual stage, the legality of new weapons they develop or acquire.

In the light of existing international instruments, however, there is an obligation for individuals and states in peacetime, as well as for combatants, military organisations and states in situations of armed conflict, not to transfer to a machine or automated process the authority or capacity to use lethal force, so that in each individual case a human being should define this as legitimate, moral and legal.

However, in the case of atrocities caused by an autonomous weapons system under the control or command of the person operating it, they can undermine the concept of commander responsibility and the obligation to control the actions of subordinates, thus protecting commanders from what might otherwise be considered a charge of war crime.

Given the current increasing trend of the development and military use of LAWS to neutralize live force (for the first time in history in 2020, during the Libyan Civil War, as claimed in the UN Security Council report) and the global risks to peace and security, including proliferation risks, also to non-state armed groups, it is necessary to create and review the international normative framework to limit and prohibit the military use of LAWS, including in combination with artificial intelligence, and to prohibit the use of LAWS, in connection with nuclear, chemical, biological weapons, etc.

In conclusion, we believe that at the present stage, given the increasing level of regional and global risks and threats related to the development and military use of LAWS, in connection with artificial intelligence, it is necessary to define and regulate internationally and nationally the circumstances of partial or total prohibition of the use of LAWS, in accordance with the principles of the UN Charter, international humanitarian law, and in accordance with international treaties to regulate the circumstances in which the use of SAALs may be prohibited, including the prohibition of the use of SAALs in connection with nuclear, chemical and biological weapons, etc. At the same time, the effective implementation of these regulations on the limitation and prohibition of LAWS requires the establishment of international and national mechanisms for monitoring, control and legal accountability for the illegal development and military use of LAWS, including in connection with artificial intelligence and nuclear, chemical, biological weapons, etc.