



LETHAL AUTONOMOUS WEAPONS: WHERE DOES THE INTERNATIONAL ARMS CONTROL AND DISARMAMENT REGIME STAND?

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December 30, 2019

(Views expressed in the brief are those of the author, and do not represent those of ISSI)



At the recent “Tsentr 2019 Maneuvers,” the Russian armed forces successfully conducted combat operations through a fully autonomous unmanned aerial vehicle (UAV) for the first time. An army UAV Orlan-10 targeted the communication lines, control centres, and air defense systems of mock enemy “at its own.”¹ Meanwhile, the Chinese Academy of Sciences announced a successful development and testing of an autonomous underwater vehicle (AUV) named “Sea-Whale 2000 Drone.”² United States is also integrating artificial intelligence (AI) into its weapon systems through the “Pentagon’s Joint Artificial Intelligence Centre.”³ These advancements could be game changers at the strategic, operational and tactical levels for respective militaries. According to US Defense Secretary Dr. Mark T. Esper, “whichever nation harnesses AI first will have a decisive advantage on the battlefield for many, many years.”⁴

¹ Alexey Ramm and Bogdan Stepova, “Highest unmanned: the military for the first time worked out the actions of shock groups of drones,” *Izvestia*, accessed November 24, 2019, <https://iz.ru/920524/aleksei-ramm-bogdan-stepovoi/vyshshii-bespilotazh-voennye-vpervye-otrabotali-deistviia-udarnykh-grupp-dronov>.

² Stephen Chen, “Chinese scientists test underwater drone designed for South China Sea,” *South China Morning Post*, accessed November 24, 2019, <https://www.scmp.com/news/china/science/article/3036964/chinese-scientists-test-underwater-drone-designed-south-china>.

³ Bill Gertz, “US and China racing to weaponize AI,” *Asia Times*, accessed November 24, 2019, <https://www.asiatimes.com/2019/11/article/us-and-china-racing-to-weaponize-ai/>.

⁴ C. Todd Lopez, “U.S. Needs WWII-Like Momentum to Advance AI, Esper Says,” US Department of Defence, last updated November 5, 2019, <https://www.defense.gov/explore/story/Article/2009396/us-needs-wwii-like-momentum-to-advance-ai-esper-says/>.

The technological advantages have set off a new global AI arms race, posing a serious threat to international peace and stability, particularly in the absence of a binding international treaty to regulate research, development, production, testing, deployment, and use of Lethal Autonomous Weapons Systems (LAWS).

Within the international arms control regime, the *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or Have Indiscriminate Effects (CCW)* is currently the most significant international legal instrument that has a mandate to deliberate on issues relevant to “the emerging technologies especially in the realm of lethal autonomous weapons systems.” The CCW State Parties have convened three annual “*Informal Meeting of Experts*” in 2014, 2015 and 2016. However, the CCW High Contracting Parties unequivocally decided to upgrade this informal setup to a formal “*Group of Governmental Experts (GGE) on emerging technologies in the area of LAWS*” during the 2016 CCW Fifth Review Conference “(CCW/CONF.V/10).”⁵ Since 2017, the GGE on LAWS has not only convened meetings on an annual basis but also successfully achieved consensus on final reports. The areas covered by these GGEs include⁶:

- i. Characterization of LAWS to develop common conceptual understanding and interpretation.
- ii. Consider issues related to “human – machine interaction”.
- iii. Review the positional militarization of emerging technologies.
- iv. Explore the challenges posed by LAWS to international humanitarian law (IHL).
- v. Discuss various potential options to address the challenges to international security and peace due to LAWS.

Despite progress made by the CCW on emerging technologies in the realm of LAWS, there are still numerous challenges.

The first and the most fundamental challenge is the self-contradictory and confusing position on the applicability of IHL. The 2019 report of the GGE on LAWS states that IHL continues to apply to LAWS

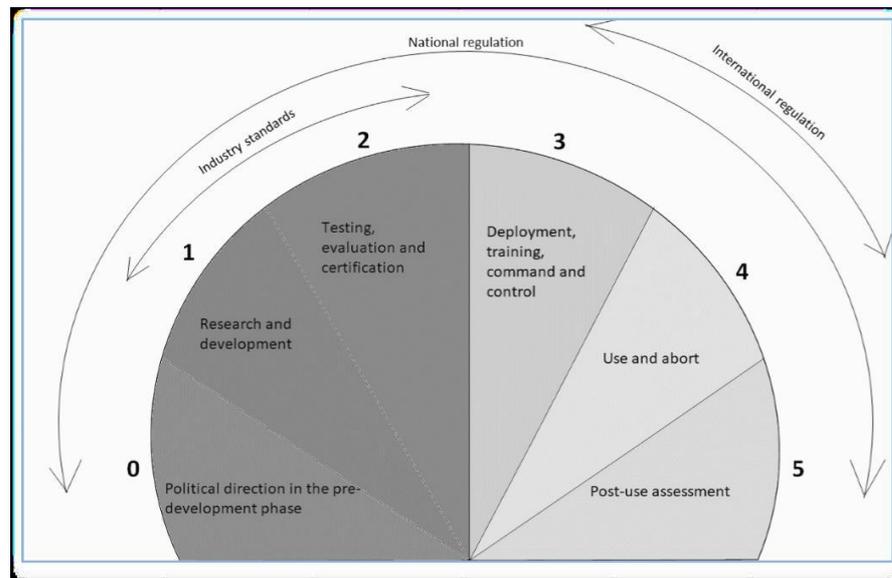
⁵ “Background on Lethal Autonomous Weapons Systems in the CCW,” United Nations Geneva, accessed November 29, 2019, [https://www.unog.ch/80256EE600585943/\(httpPages\)/8FA3C2562A60FF81C1257CE600393DF6?OpenDocument](https://www.unog.ch/80256EE600585943/(httpPages)/8FA3C2562A60FF81C1257CE600393DF6?OpenDocument)

⁶ United Nations, Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System, “Report of the 2019 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems,” CCW/GGE.1/2019/3, September 25, 2019, <https://undocs.org/en/CCW/GGE.1/2019/3>.

and states must ensure that “potential use” of these weapons “should be in compliance with IHL”. But in a next point, it states that IHL is not applicable to machines.⁷ This could be interpreted as IHL is just applicable to the ‘human component’ of human-machine interaction and not to the ‘machine component’.

There are various combinations and forms of human-machine interaction with blur boundaries. How much autonomy and human involvement could be there and at which level? How and who will decide that which component ends where? The 2018 GGE on LAWS prepared a “Sunrise Chart” with five points of human involvement but could not reach a consensus on the “operationalization” of this design (Figure 1).⁸ The 2019 GGE report further stated that in case any weapon system is not covered under the CCW and any other international treaty, the decision must be taken in accordance with the customary international law and the “dictates of public conscience.”⁹ The GGE’s reliance on Marten’s Clause is an extremely weak legal position and equivalent of simply doing nothing. However, the GGE still recognize that this technical area requires more clarification, attention and joint working.

Figure 1: Sunrise Chart



Source (s): United Nations, Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System, “Report of the 2018 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems,” October 23, 2018, p. 14.

⁷ United Nations, “Report of the 2019 session...,” p. 4.

⁸ United Nations, Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System, “Report of the 2018 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems,” CCW/GGE.1/2018/3, October 23, 2018, p. 14, <https://undocs.org/en/CCW/GGE.1/2018/3> ; Stockholm International Peace Research Institute, *SIPRI Yearbook 2019: Armaments, Disarmament and International Security* (New York: Oxford University Press, September 2019): 454.

⁹ United Nations, “Report of the 2019 session...,” p. 4

The second challenge is how national legal frameworks for LAWS will interact with international law. According to the traditional practice, states take initiatives to align their national legal frameworks with international law and adopt international safeguards prescribed by an international regulatory arrangement, group or commission. However, the 2019 GGE on LAWS has adopted a completely opposite position. Instead of proposing the establishment of an international regulatory organization or commission, the state parties agreed to use legal reviews at the national level to decide whether the development and acquisition of new weapons are prohibited under international law or not, and discussed the applicability of international with reference to just “potential use.”¹⁰ This is a matter of serious concern because states are at a different level of technological and economic development with different forms of government, legal frameworks, and national security cultures. Furthermore, a traditional security dilemma would arise in this situation. The development of LAWS approved by the national legal framework of one state could be totally unacceptable for other state.

The third challenge is the disagreement among state parties regarding the significance of LAWS in combat situation. Some state parties argued that such advance weapon systems would facilitate the armed forces. So, international law should allow their use with certain precautionary measures. However, other states argued that keeping in view the complex battlefield environment, the use of these weapons are exceedingly unnecessary and injurious for combatants, as well as the civilian population. These weapons cannot understand the changing characteristics of actual warfare like crisis decision-making, information processing, precautions, proportionality, the chain of command, target identification, selection, and engagement.¹¹

In addition to the use of AI in the development of new weapons, the integration of AI with the existing weapon systems is another critical challenge. The chairperson of 2019 GGE also covered this area in his list of proposed questions for GGE.¹² How and to what level AI could be integrated with existing conventional weapons? What will be the level of autonomy if AI would be used in critical command and control systems? How an existing international arms control regime would deal with the autonomous air defense systems, automated functions of missiles, automated modes of loitering weapons, autonomous submarines and naval ships?

These challenges are technically complex and sensitive which require immediate actions. State parties should explore possible options to reach a consensus on the key areas like characterization of LAWS, the question of autonomy in human-machine interaction, potential militarization of

¹⁰ Ibid.

¹¹ Ibid., 5 – 6.

¹² Ibid., Annex III.

emerging technologies in the realm of LAWS and issue of a complete or partial ban on LAWS before the next CCW Review Conference in 2021. The core reason behind this lack of consensus is that states are at the exploration stage regarding the research, development, production and uses of emerging technologies and LAWS. They will take time in realizing the actual potential of these technologies to establish national infrastructures, relevant institutions, laws, and political consensus.

However, keeping in view the rapid technological innovations, one cannot wait for states to reach this level of understanding and resolve the challenges discussed above. In the last CCW Review Conference in 2016, the state parties took one step ahead and shifted the LAWS from informal discussions to GGE process. Now they have the opportunity to take a leap forward and transform this debate of “potential use” of LAWS to formal treaty negotiations or an additional protocol of CCW in 2021CCW Review Conference.