

Deterring the Development and Exploit of Autonomous Weapons

Forum: Disarmament Commission

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Introduction

The term autonomous weapon refers to a “military system that can independently search for and engage targets based on programmed constraints and descriptions.” Autonomous weapons are also called LAWs, Lethal Autonomous Weapon. There are three types of autonomous weapons: human-in-the-loop, human-on-the-loop, and human-out-of-the-loop. A human-in-the-loop weapon can only work when the humans give the command. The human-on-the-loop weapon can select and deliver the target under the humans’ oversight. In addition, human-out-of-the-loop weapons can select and attack the target without any human input. Most of the recently developed autonomous weapons focus on surveying their surroundings, identifying the target, and independently attacking those targets. This weapon system requires high-end technology which only seven countries, the US, China, Russia, UK, France, Israel, and South Korea.

Background

The lethal autonomous weapon system is one of the most advanced technologies that there are no nations that fully developed the human-out-of-the-loop weapon. Surprisingly, this weapon was first created in the late 19th century.

Tesla, the engineer and rival of Thomas Edison demonstrated the radio-controlled motorboat that has the potential of military usage. Also, the first usage of Lethal autonomous weapons was in March of 2020 in Libya. Turkish manmade drone, which is known as Kargu-2, killed a member of the Libyan national army.



Picture of Kargu-2 which is the Turkic LAW

Many nations view lethal autonomous weapons as the key weapon in future warfare. Chinese national armies are developing the AI in this weapon system to develop a human-out-of-the-loop weapon system. In addition, in 2010, the sentry gun that can spot humans and fire was developed under the development conducted by Samsung and the Korean government. US defense department also joined the development of LAW, which is implied by the quote that they made: "autonomous and semi-autonomous weapons systems shall be designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force."

There are various forms of autonomous weapon systems, but the three superpower nations, the US, China, and Russia, are developing wingman drones. These drones are intended to replace the vast part of man-controlled aircraft such as Global Hawk, RQ-4, and CH-6. Thus,

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we can conclude that the LAW, a lethal Autonomous Weapon, can substitute almost every warfare area. This is proven by the gulf war, the war that the USA first used the drone to attack and gain information of Iraq army. In addition, HR-Sherpa, the artificial drone developed by the Korea, also possess the specialized tire which enable the weapon to overcome the natural obstacles.

International Actions

International organizations took several actions to prevent the excessive development of lethal autonomous weapon systems. These international organizations include the UN (United Nations) and the EU (European Union). However, these organizations didn't make meaningful progress.



Actual picture of Stop Killer Robots Campaign

Convention-on-Certain-Conventional Weapons (CCW) is the NGO organization under the UN to regulate the development of lethal weapons. At the Convention-on-Conventional Weapons at the United Nations in Geneva, there were discussions and acts to form regulations on excessive development on lethal autonomous weapons. However, diplomats could not immediately regulate this weapon system. Thus, the other activity that the CCW took was to form a campaign to stop killer robots. This campaign urged countries to bypass the convention entirely to negotiate a separate treaty.

Unlike the UN, the EU received numerous supports from their member nations to regulate the usage and develop lethal autonomous weapons. Almost three in every four Europeans want their governments to work for an international treaty prohibiting lethal autonomous weapon systems. In addition, the EU took a stance against killer robots last year when the European Parliament passed a resolution calling for an international ban on the development, production, and use of weapons that kill without human involvement. Also, EU lawmakers are even acting on forming methods to limit the development of autonomous weapons such as unmanned tank and aircrafts.

Although there are several actions and movements in the EU to deter the development of autonomous weaponry, there are no clear and directive regulations. Thus, the resolution contains clauses that can effectively prevent the excessive usage and development of autonomous weapons in this topic. Because of potential danger of LAW due to higher kill rate and degradation of human value, there are several international actions by the organizations. However, still, there is no definite and effective solution to prevent the excessive LAW development, so in this commission, delegate should aim for the establishment of method to prevent the excessive development and investment of LAW which might play detrimental role in the world peace.

Places of High Concern

United States of America

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The Pentagon's Defense Advanced Research Projects Agency has announced it would invest two billion dollars in developing the lethal autonomous weapon using AI. The US army is also developing an AI-powered tank that will use artificial intelligence and machine learning to give ground-combat vehicles autonomous target abilities. However, because this AI system will make the weapon system acquire, identify, and engage targets at least three times faster than the traditional tank, this weapon system will be more likely to produce increased casualties. The US is also investing in developing Advanced Targeting and Lethality Automated System, which will assist the soldiers' physical abilities. Thus, future warfare will increase casualties with these numerous developments on killer robots and their utilization.

Israel



Depiction of Israel's Mini Harpy

Israel Aerospace Industries recently introduced the Mini Harpy, a drone that hovers over a combat zone and autonomously detects targets. Then locks in on the threat and attacks it for quick, lethal closure. Because these weapon attacks are targeted mostly through the suicidal explosion, other innocents might be damaged. In addition, Israel also possesses a defensive autonomous weapon system, Iron Dome. This weaponry is for the counter-missile and controlled by autonomous guidance capable of intercepting specific targets that represent a high-priority threat according to system configuration.

China

China is also the nation that actively invests 1.6 billion dollars in the autonomous weapon system. They set up Three-Year-Action Plan for promoting the development of a new generation artificial intelligence weapon. President Xi Jinping also mentions that he believes AI will be a crucial part of the country's military prowess moving forward. As the Chinese People's Liberation Army seeks to become a world-class military, its progress in advanced weapons systems provokes intense concern from its neighbors and competitors. Thus, the Chinese military is pursuing significant investments in robotics, swarming, and other artificial intelligence applications and machine learning to their weapon system. In addition, because China is excessively competing with the US in the military area, they are also trying to reduce the gap between the US in AI weaponry systems.

Possible Solutions

As this weapon system covers various areas and has various types, many solutions can be proposed. Among the many problems that exist within this issue, the three of the gravest are the following:

1. Development of the autonomous weapon system will make future warfare more deadly due to its effectiveness in killing or attacking the targets.
2. Usage of autonomous weaponry will reduce accountability when a civilian is killed, or property is unjustly damaged.

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3. Excessive development on autonomous weapon systems will trigger neighboring or competing nations to invest in autonomous weapons, which will cause an arms race.

Therefore, it is necessary to form regulations to prevent the excessive development of the killer robot. That is, because of the usage of lethal drone weapons, there will be more casualties and innocents sacrificed, also degrading morality. Therefore, it is necessary to form regulations to prevent the excessive development of the killer robot. In this regulation, limiting the investment, giving economical sanction to the nations that do not follow the regulation, and forming an institution for the anti-autonomous weapon will be contributing for excessive development on LAW. However, because LAW is the important futuristic weapon for the nations, so eradicating this weapon system is impossible. Thus, this regulation should aim for the prevention of excessive investment that might break the peace. Moreover, excessive development of this weapon system might cause an arms race, which will play a detrimental role in international peace. Thus, it is important to urge a peaceful relationship with the neighboring nations through frequent conferences and sharing the autonomous weapon technology to promote amity.

Glossary

LAW (Lethal Autonomous Weapon): Lethal autonomous weapons are a type of autonomous military system that can independently search for and engage targets based on programmed constraints and descriptions.

Arms Race: a competition between nations for superiority in the development and accumulation of weapons.

CCW (Convention-on-Certain-conventional Weapons): The United Nations Convention on Certain Conventional Weapons, concluded at Geneva on October 10, 1980, and entered into force in December 1983, seeks to prohibit or restrict the use of certain conventional weapons which are considered excessively injurious or whose effects are indiscriminate.

Killer Robots: Weapon that can identify, target and kill without human input. This is another name of Lethal Autonomous Weapon.

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