

## TABLE OF CONTENTS

### **1. Welcoming Letters**

- 1.1. Letter from the Secretary-General
- 1.2. Letter from the Under-Secretary-General
- 1.3. Letter from the Under-Secretary-General

### **2. Introduction to the Committee**

### **3. Introduction to the Agenda Item**

### **4. Historical Overview to the Promotion and Usage of Autonomous Weapons**

- 4.1. Early Periods of the Automation in Warfares
- 4.2. Evolution into Modern Autonomous Weapons

### **5. Autonomous Weapons Systems**

- 5.1. Types of Autonomous Weapons Systems
  - 5.1.1. Loitering Munitions
  - 5.1.2. Unmanned Aerial Vehicles (UAVs)
  - 5.1.3. Unmanned Ground Vehicles (UGVs)
  - 5.1.4. Unmanned Surface Vehicles (USVs)
  - 5.1.5. Unmanned Underwater Vehicles (UUVs)
  - 5.1.6. Fixed Defense Systems with Autonomous Capabilities
  - 5.1.7. Swarming Drones

### **6. Legal Frameworks and Ethical Considerations**

- 6.1. International Humanitarian Law (IHL)
- 6.2. Geneva Conventions and CCW

### **7. Previous UN Actions and Resolutions**

- 7.1. Previous UNHRC Resolutions
- 7.2. DISEC Debates

### **8. Questions to be Addressed (QTBA)**

### **9. Bibliography**

## **1. Welcoming Letters**

### **1.1. Letter from the Secretary-General**

Dear Participants,

I am honored to welcome you to the MARINEMUN conference 2025 , where we will engage in meaningful discussions and debates on global issues. As your Secretary-General, I am incredibly excited and proud to be in this role, and I am enthusiastic about the opportunity to see the diverse perspectives and ideas that each of you will bring to the table. I feel incredibly lucky to work alongside our wonderful academic and organization team, and together, we will create an enriching and A memorable experience for everyone involved.

This conference will be a platform for constructive dialogue and collaboration, and I am confident that together, we will make it a truly great and impactful event.

If you need any assistance, feel free to get in touch with me.

Warm regards,

Selin Esin

Secretary-General

Email: seloosesin@hotmail.com

### **1.2. Letter from the Under-Secretary-General**

I, as the Co-Under Secretary General of United Nations Environment Programme Committee,

Welcome you all to this conference. It is an honor and a pleasure to be able to present this committee to all of you. In this study guide my lovely Co-Under Secretary General Turgut Emir Önder and I aimed to explain the committee and the topic as clearly as possible. I highly encourage all of you to read this guide carefully to have a pleasant conference .I wish to have a wonderful conference. Although we tried to

explain everything this committee will need lots of further reading according to your allocation.

Lastly I want to thank the Executive Team for their invitation and warm welcome. I am thrilled to see you all!

If you have any questions please don't hesitate to ask;

[ecemcoban03@gmail.com](mailto:ecemcoban03@gmail.com)

Sincerely,

Ecem Çoban

### **1.3. Letter from the Under-Secretary-General**

Distinguished participants of the DISEC committee,

As the Under-Secretary-General of this committee, I am honoured to welcome you all to this journey.

I thank and appreciate our Secretariat and Organization's with all of my heart. I believe that they are committed to making your experience at the conference one of the finest from the help of high-quality both organization and academic teams they built. They made us able to explore, understand the importance, share our knowledge and discuss this current issue.

I really believe that this committee will be the best place to express your opinions and debate. Your discussions will not go unnoticed so we expect you to express yourself and ideas with utmost confidence, integrity and cleverly.

As the delegates of this committee never forget the importance of being a part of this process and the seriousness of this current issue. I am here to encourage you all to share your primary goals.

This guide which is written by me and my dear Co-USG Ecem Çoban *-she is always there when I need her so thanks for being so supportive!-* is available for you to understand this committee. We aimed this study guide to be informative to you and help your knowledge about this subject.

If you have further questions or concerns don't hesitate to contact me via  
0 505 058 6312.

Sincerely,

Turgut Emir ÖNDER  
Under-Secretary-General of the DISEC Committee

## **2. Introduction to the Committee**

First committee of the General Assembly, Disarmament and Security Committee (DISEC) deals with disarmament, global challenges and threats to peace that affect the international community and seeks out solutions to the challenges in the international security regime.

It considers all disarmament and international security matters within the scope of the Charter or relating to the powers and functions of any other organ of the United Nations; the general principles of cooperation in the maintenance of international peace and security, as well as principles governing disarmament and the regulation of armaments; promotion of cooperative arrangements and measures aimed at strengthening stability through lower levels of armaments.

In a world where technology is rapidly advancing, our primary aim is to find solutions that not only regulate their use but also ensure international security, human rights, and ethical responsibility. In this committee it's time for our delegates to shape the future of warfare and global peace together.

## **3. Introduction to the Agenda Item**

In recent years, the development of autonomous weapons has raised urgent questions for the international community. These systems, ranging from drones that can operate without human input to ground robots that can engage targets on their own, represent a major shift in the way wars may be fought.



The use of artificial intelligence in military operations is growing rapidly, and many countries are investing in autonomous technology for national defense. However, there is still no global agreement on how these weapons should be controlled, or even if they should be allowed at all. This has created legal, ethical, and security challenges that need to be addressed.

This agenda focuses on how the international community can regulate both the promotion (development, testing, and export) and the usage of autonomous weapons in armed conflict. Delegates will be expected to consider the balance between national security, technological innovation, human rights, and the laws of war.

## **4. Historical Overview to the Promotion and Usage of Autonomous Weapons**

### **4.1. Early Periods of the Automation in Warfares**

- **The Gatling Gun**

In 1862, Richard Jordan Gatling invented a multi-barreled, rotating gun operated by a hand crank that could fire up to 200 rounds a minute. Used only a few times during the Civil War, the Gatling gun would later become the first widely successful machine gun.

Gatling received the first patent for the new firearm on November 4, 1862. The Gatling gun had six metal barrels arranged in a circle and mounted on a wheeled cart. As the gun's operator turned the crank, a bullet entered a barrel from a magazine and then rotated to the firing position. After each bullet was fired, that barrel continued to move and was reloaded with another bullet.

Gatling continued to make improvements to the gun's design, but even the earliest version was able to fire some 200 rounds per minute. While the first Gatling gun used paper cartridges loaded with gunpowder and .58 caliber bullets, the introduction of brass cartridges made it possible for later versions to fire up to 400 rounds per minute.

Though efforts to invent a weapon that could fire multiple times in quick succession went back centuries by the time Gatling tried it, the Gatling gun represented a giant leap forward in the development of the rapid-fire machine gun. Yet despite its success

in early trials, the U.S. Army Ordnance Department refused to adopt the relatively untested new weapon during the Civil War.

The Army officially adopted the Gatling gun in 1866, and its visibility grew steadily from there.

By the end of the 19th century, the weapon had become a terrifying symbol of power and dominance. U.S. troops used Gatling guns in their repeated campaigns against Native Americans, while British forces employed them in their wars against the Zulu in Africa (1879). From the 1870s-90s, a period of widespread labor unrest in the United States, law enforcement officers and state militias around the United States used Gatling guns in their violent clashes with striking workers.

The Gatling gun's reputation resurged after World War II, when it was used as the model for the Vulcan minigun, commonly mounted aboard U.S. fighter helicopters during the Vietnam War.



There is a short video about the Civil War tech for you to understand the first attempts of the automation:

[▶ Civil War Innovation and Technology](#)

- **The Maxim Gun**

The Maxim gun is a recoil-operated machine gun invented in 1884 by Hiram Stevens Maxim. It was the first fully automatic machine gun in the world.

The Maxim gun has been called "the weapon most associated with imperial conquest" by historian Martin Gilbert, and was heavily used by colonial powers during the

colonisation of African countries. Afterwards, Maxim guns also saw extensive usage by different armies during the Russo-Japanese War, the First and Second World Wars, as well as in contemporary conflicts.

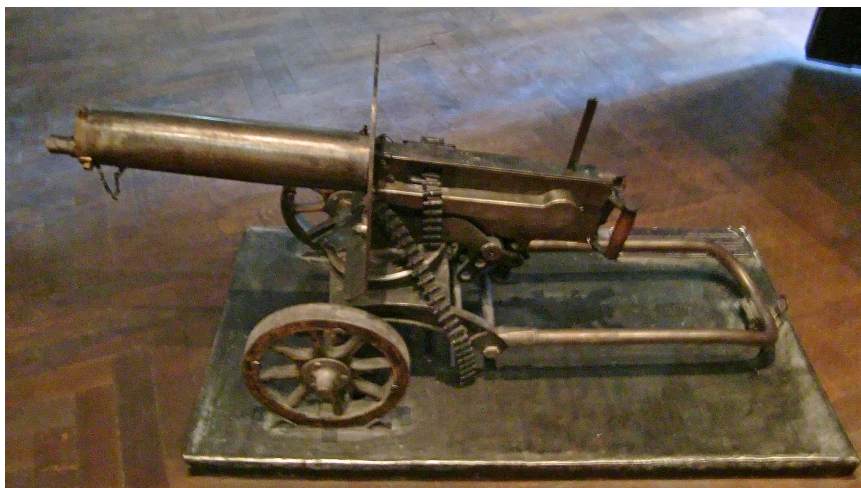
The Maxim gun was greatly influential in the development of machine guns, and it has multiple variants and derivatives.

Trials demonstrated that the Maxim could fire 600 rounds per minute. Compared to modern machine guns, the Maxim was heavy, bulky, and awkward. A lone soldier could fire the weapon, but it was usually operated by a team of men, usually 4 to 6 in number. Apart from the gunner, other crew were needed to speed reload, spot targets, and carry and ready ammunition and water. Several men were needed to move or mount the heavy weapon.

By World War I, many armies had moved on to improved machine guns. The British Vickers machine gun was an improved and redesigned Maxim, introduced into the British Army in 1912 and remaining in service until 1968. Production took place at Erith in Kent, and some models were fitted to early biplanes also fabricated there. The German Army's Maschinengewehr 08 and the Russian Pulemyot Maxim were both more or less direct copies of the Maxim.

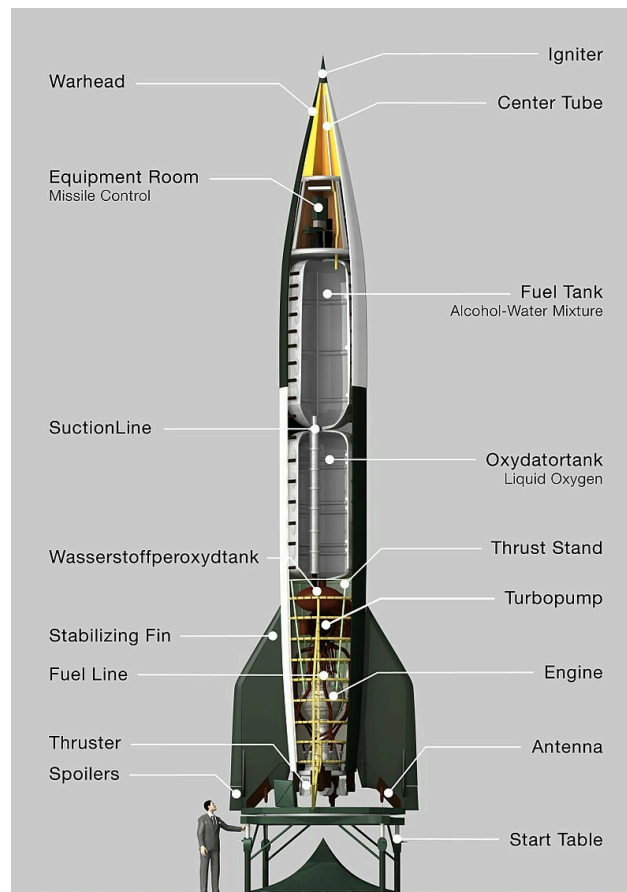
It also saw use during the Russian Civil War, which followed the Revolution in 1917.

The United States Army had shown interest in the Maxim machine gun since 1887. Model 1889 and Model 1900 Maxims were used for testing, which lasted for years but not continuously. The gun was finally adopted in 1904 as the Maxim Machine Gun, Caliber .30, Model of 1904 as the first rifle caliber heavy machine gun for standard service in the U.S. Army.



- **V-1 and V-2 Rockets**

Germany's V-1 and V-2 rockets were pioneering long-range guided missiles used during WWII. The V-2, in particular, was the world's first ballistic missile, capable of delivering warheads over significant distances without human intervention.



- **Nike Missile**

The Cold War era saw the development of advanced missile defense systems, such as the U.S. Nike missile program, designed to intercept and destroy incoming threats using radar-guided technology.

Nike missile, any of a series of U.S. surface-to-air missiles designed from the 1940s through the 1960s for defense against attack by high flying jet bombers or ballistic-missile reentry vehicles.

The first missile in the series was Nike Ajax, a two-stage, liquid-fueled missile 21 feet (6.4 metres) long built by the Douglas Aircraft Company. Guided by a radar system

designed by Bell Laboratories, it could intercept aircraft flying as high as 70,000 feet (21,000 metres) within a range of 30 miles (50 km) at more than twice the speed of sound. The missile carried three high-explosive warheads that would be detonated by the guidance system at the predicted interception point. Beginning in 1953, Ajax missiles were installed in some 200 fixed launcher sites in cities and military sites throughout the United States. They were also distributed among U.S. allies in Europe and Asia.



In 1958 the larger Nike Hercules began to replace the Ajax. Its two stage, solid propellant engines could carry either a high-explosive or a nuclear warhead at more than three times the speed of sound to targets as high up as 150,000 feet (45,000 metres) and more than 75 miles (120 km) away. Hercules was designed for defense against attacks by massed formations of bombers, but a more sophisticated radar system enabled improved versions to intercept short-range ballistic missiles as well as aircraft. Hercules missile sites in the United States were deactivated starting in 1974, after the signing of the Anti-Ballistic Missile [ABM] Treaty with the U.S.S.R. Hercules missiles in Europe were replaced in the 1980s by the more mobile and accurate Patriot system. In Asia, Nike Hercules batteries in Taiwan were active into the 1990s, and South Korea continued to maintain active sites past the turn of the 21st century.

Beginning in 1955, the United States developed a series known as, among other designations, Nike Zeus, the first missile designed specifically to intercept intercontinental ballistic missiles (ICBMs). Nike Zeus evolved into Spartan, the exoatmospheric layer of a two-layer ABM system known at first as Nike X. Spartan, propelled by three solid-rocket stages and fitted with phased-array radar and a nuclear warhead, was intended to intercept ICBM reentry vehicles in outer space. A complementary endoatmospheric missile, known as Sprint, was intended to intercept

ICBM reentry vehicles or lower-trajectory submarine-launched ballistic missiles within the atmosphere. The designation Nike X was abandoned in 1967 in favour of the designation Sentinel. Under this name the Spartan/Sprint combination was proposed as a defense against missile attacks on a number of U.S. cities and military bases. In 1969 the system was renamed Safeguard and was given a more limited mission of protecting U.S. ICBM sites. Safeguard was activated at only one site, near an ICBM battery at Grand Forks Air Force Base in North Dakota, in 1975; Safeguard was deactivated within a year as part of the U.S. response to the ABM Treaty.

- **Precision-Guided Munitions (PGMs)**

A precision-guided munition (PGM), also called a smart weapon, smart munition, or smart bomb, is a type of weapon system that integrates advanced guidance and control systems, such as GPS, laser guidance, or infrared sensors, with various types of munitions, typically missiles or artillery shells, to allow for high-accuracy strikes against designated targets. PGMs are designed to precisely hit a predetermined target, typically with a margin of error (or circular error probable, CEP) that is far smaller than conventional unguided munitions. Unlike unguided munitions, PGMs use active or passive control mechanisms capable of steering the weapon towards its intended target. PGMs are capable of mid-flight course corrections, allowing them to adjust and hit the intended target even if conditions change. PGMs can be deployed from various platforms, including aircraft, naval ships, ground vehicles, ground-based launchers, and UAVs. PGMs are primarily used in military operations to achieve greater accuracy, particularly in complex or sensitive environments, to reduce the risk to operators, lessen civilian harm, and minimize collateral damage. PGMs are considered an element of modern warfare to reduce unintended damage and civilian casualties. It is widely accepted that PGMs significantly outperform unguided weapons, particularly against fortified or mobile targets.





During the Persian Gulf War guided munitions accounted for only 9% of weapons fired but accounted for 75% of all successful hits. Despite guided weapons generally being used on more difficult targets, they were still 35 times more likely to destroy their targets per weapon dropped.

Because the damage effects of explosive weapons decrease with distance due to an inverse cube law, even modest improvements in accuracy (hence reduction in miss distance) enable a target to be attacked with fewer or smaller bombs. Thus, even if some guided bombs miss, fewer air crews are put at risk and the harm to civilians and the amount of collateral damage may be reduced.

The advent of precision-guided munitions resulted in the renaming of older, low-technology bombs as "unguided bombs", "dumb bombs", or "iron bombs".

Some challenges of precision-guided munitions include high development and production costs and the reliance of PGMs on advanced technologies like GPS make them vulnerable to electronic warfare and cyberattacks.

#### **4.2. Evolution into Modern Autonomous Weapons**

If we are talking about the evolution of these weapons, it is impossible to pass here without mentioning the new rising drone era. The late 20th and early 21st centuries witnessed the proliferation of unmanned aerial vehicles (UAVs) in military operations. Drones like the MQ-1 Predator became instrumental in surveillance and targeted strikes.



Loitering munitions, such as Israel's Harpy drone, combine features of drones and missiles, capable of loitering over areas and striking upon target acquisition without human command.



Emerging as a cost-effective solution to counter enemy surface-to-air missile systems (SAMs), loitering munitions are characterized by their lightweight design and versatility. They can be deployed from different launch platforms and locations. With capabilities for mid-course correction and precise targeting, they minimize collateral damage and offer enhanced mission flexibility. Integrating intelligence, surveillance, and reconnaissance (ISR) functions, along with targeted strike capabilities and flexible



deployment options, these weapons represent a significant advancement in multi-domain warfare.

The emergence of global conflict has brought new players into the loitering munitions market, driving increases in demand and manufacturing. One significant player is Russia.

The Lancet-3, developed by the Zala Group, is the primary drone being used by Russian forces. These drones have become Russia's main tool, targeting high-value assets such as artillery, vehicles, air defenses, and command infrastructure, posing a substantial threat to Ukrainian forces on the battlefield. According to the manufacturer, between the outset of the war and Dec. 29, 2023, Lancet munitions have been used 872 times, destroying a purported 698 targets.

Similarly, Israel utilized loitering munitions in its ongoing conflict with Hamas. The IDF is primarily using Rafael's miniature 3-kg Spike FireFly loitering munitions. Israel Aerospace Industries (IAI) inked a \$110 million export deal with Estonia for an undisclosed model of long-range loitering munitions in May 2023. Others have sought to replicate Israel's success in loitering munition development, as the weapons become a fundamental part of 21st-century warfare.

Now, let's take a look at global investments made for autonomous weapons.

The global autonomous weapons market was valued at \$11,565.2 million in 2020, and is projected to reach \$30,168.1 million in 2030, registering a CAGR of 10.4%.

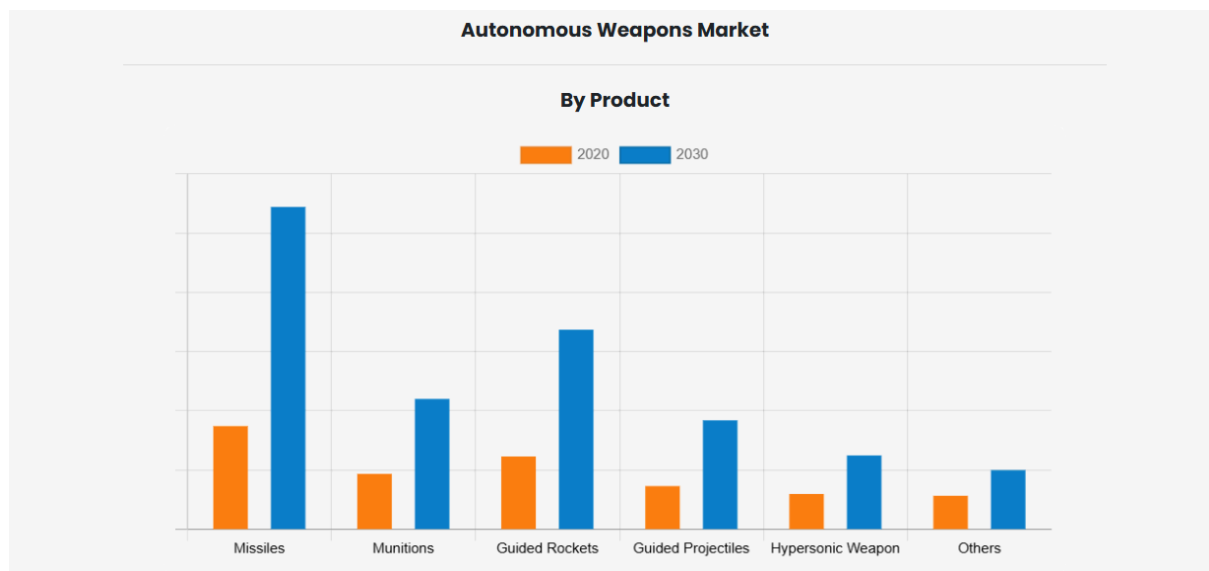
Without the need for human involvement, autonomous weapons choose and engage targets. They usually include armed quadcopters that can hunt for and eliminate persons who fulfil specific predefined criteria, however, they do not include remotely piloted drones or cruise missiles where humans are in charge of all targeting decisions. AI technology has advanced to the point that deployment of such systems may be accomplished in a few years, and the stakes are quite high. After gunpowder and nuclear weapons, autonomous weapons have been dubbed as the third revolution in warfare.

Rise in technological advancements in autonomy of weapons are being observed throughout the world. Autonomy is being added to different parts of existing weapons systems, from target planning to mission execution. Global military spending on autonomous weapons and AI is anticipated to grow significantly over the years. This

factor is expected to account for rapid development of the autonomous weapons market during the forecast period.

The market segmentation is based on product, platform, type, and region. The product segment is further divided into missiles, munitions, guided rockets, guided projectiles, hypersonic weapons, and others. By platform, the market is segmented into land, airborne, and naval. By type, it is segmented into semi-autonomous and autonomous. Region wise, the market is analyzed across North America, Europe, Asia and Pacific.

Key players operating in the global autonomous weapons market include BAE Systems plc, Israel Aerospace Industries Ltd., Kongsberg Gruppen ASA, Lockheed Martin Corporation, MBDA, Northrop Grumman Corporation, Rafael Advanced Defense Systems Ltd., Raytheon Technologies Corporation, Rheinmetall AG, and Thales Group.



Autonomous defense systems including weapons, smart vehicles, armed drones, and robots play a vital role in the defense operations. These are fully autonomous tools that employ telecommunication technology such as 5G network, at the disposal of defense agencies to provide services in real time at dangerous, inconvenient, and impossible areas of operation such as remote surveillance for enemy infantry.

Various countries across the globe have focused on development of autonomous systems to be utilized in public and national safety applications. In recent times, multiple governments from developed and emerging nations such as the U.S., Russia, China, and India have invested billions of dollars for autonomous defense projects.

For instance, Europe launched a defense research and development program of \$9.32 billion in January 2021 toward financing defense R&D projects.

Adoption of autonomous technologies helps in reduction of operational costs and increases efficiency significantly. For instance, during the operation of a naval destroyer for a single day \$700,000 are spent by the U.S. navy whereas in the case of an autonomous ship's operation costs would come down to \$15,000 to \$20,000 per day. Moreover, for increased efficiency; several nations around the world are deploying the use of 5G in the operation of autonomous defense vehicles, robots, and drones. For instance, U.S. ignite launched a technology pilot program in January 2021 for 5G Living Lab at Marine Corps Air Station (MCAS) Miramar situated in San Diego. Moreover, several pilot projects aimed at utilization of 5G in autonomous defense vehicles, drones, and robots are underway globally.

Rise in adoption of autonomous technology to improve defense capabilities of nation globally is anticipated to propel growth of the global autonomous weapons market during the forecast period.

Although autonomous weapons technology is still in its early stages, several militaries and private companies are developing and testing weapons that could one day be deployed to fight on their own. For instance, Russia is performing tests on autonomous tanks on Syrian battlefields, the U.S. has successfully tested swarms of drones, the UK wants to induct drone squadrons in combat roles as soon as possible, and China is developing unmanned submarines capable of carrying out kamikaze attacks (Japanese suicide bombing tactic) on enemy vessels.

Armed forces across the world have been working on autonomous weapons for several decades now. Presently, at least 30 countries use them, mainly to defend airbases, ground vehicles, or ships against missile attacks. Various countries are competing with each other intensely to manufacture or procure leading-edge autonomous weapons. For instance, China and Russia aim to pursue development of autonomous weapons and are heavily investing in R&D activities. In addition, UK's new defense strategy is aimed at propelling defense capabilities leveraging AI, as does Israel.

According to the Brookings Institution (a Washington, DC-based non-profit public policy organization), the Chinese military and defense sector have been investing heavily in robots, swarming, and other artificial intelligence (AI) and machine learning applications (ML). So far, advancements in autonomous weapons have drawn on existing research and development expertise. Moreover, Russia is developing an

array of autonomous weapon platforms utilizing artificial intelligence as part of an ambitious push supported by high-tech cooperation with China. Such developments provide a rise in demand for autonomous weapons, which is anticipated to propel growth of the global autonomous weapons market during the forecast period.

Fully autonomous weapons are those that can choose and fire on targets without the need for human interaction. Fully autonomous weapons are capable of assessing tactical context on a battlefield and deciding on appropriate assault based on processed data. Several countries fund and assist operations aimed at developing and researching completely autonomous weaponry. China, Germany, India, Israel, Republic of Korea, Russia, and the UK. The UK, U.S., Israel, and South Korea have already deployed robotic systems with varying degrees of autonomy and lethality.

Although abovementioned nations project great prospects for fully autonomous weapons, experts across the globe have pointed out issues related to accountability, protection of lives of citizens, and falling of such technology with non-authorized persons. No single human may be held responsible for his or her acts in an armed battle if the weapon system is autonomous. Instead, accountability is shared among a larger, possibly unidentifiable group of people, which could include a robot's programmer or maker.

Removal of humans from the selection and execution of attacks on targets, as the UN Special Rapporteur on extrajudicial, summary, or arbitrary executions noted in their report to the Human Rights Council, represents a critical moment in the new technology that is considered a revolution in modern warfare. It was advised to nations to carefully consider consequences of such weapon systems, adding that such technology raises danger of states engaged in armed conflicts, owing to a lower risk of military casualties. Fully autonomous weapons could lower the conflict threshold, particularly in cases where the other side lacks comparable systems to deploy in response. These factors, as experts have pointed out, could lead to serious conflicts and uncalled war like situations caused due to unsupervised attacks made by fully autonomous weapons, and hinder growth of the global autonomous weapons market during the forecast timeframe.

Use of weapons that make their own judgments or autonomous weapons, have increased in recent years as a result of technological improvements and rise in complicated conflicts such as the Syrian and Libyan civil wars. Libya is not the only place where destructive autonomous weapons have been utilized in recent years. For instance, autonomous quadcopters were employed by Turkey to monitor its border with Syria. In September 2020, when Azerbaijan attacked Armenian-occupied

territory, it used loitering munitions (drones that can autonomously fly over an area and divebomb enemy radar signals) made by both Turkish and Israeli companies. These weapons appear to be miniature versions of remote-controlled drones that the U.S. military has deployed extensively in battles with Iraq, Afghanistan, and other countries. Loitering munitions, on the other hand, have a built-in explosive and destroy themselves on impact with their target, rather than releasing missiles via remote control. These factors prove lethality and efficiency of autonomous weapons and rise in use of autonomous weapons is expected to propel growth of the global autonomous weapons market during the forecast period.

The emergence of autonomous weapons has led to international advocacy for regulation. Organizations like the Campaign to Stop Killer Robots urge for treaties to ensure meaningful human control over such systems. Here is the website if you would like to observe: <https://www.stopkillerrobots.org>

## **5. Autonomous Weapons Systems**

### **5.1. Types of Autonomous Weapons Systems**

#### **5.1.1. Loitering Munitions**



Loitering munitions are a hybrid between drones and missiles. Once launched, they can hover over a target area for extended periods, waiting to detect a suitable target. Upon identification, they dive toward the target and detonate, destroying both the munition and the objective. These systems offer real-time responsiveness and are often used in asymmetric warfare due to their precision and low cost.

### **5.1.2. Unmanned Aerial Vehicles (UAVs)**



UAVs, commonly known as drones, are aircraft without an onboard human pilot. They can be remotely controlled or operate autonomously using pre-programmed routes and sensors. UAVs are widely used in military operations for reconnaissance, target tracking, and armed attacks. Models like the MQ-9 Reaper demonstrate how UAVs can carry out high-altitude surveillance and precision strikes with minimal human involvement.

### **5.1.3. Unmanned Ground Vehicles (UGVs)**



UGVs are robotic systems that operate on land without a human onboard. They are typically used for tasks such as reconnaissance, transporting supplies, bomb disposal, or even engaging targets in combat. UGVs can navigate complex terrain and are often equipped with sensors, cameras, and weapon systems. Their ability to reduce risk to human soldiers makes them valuable for high-risk operations.

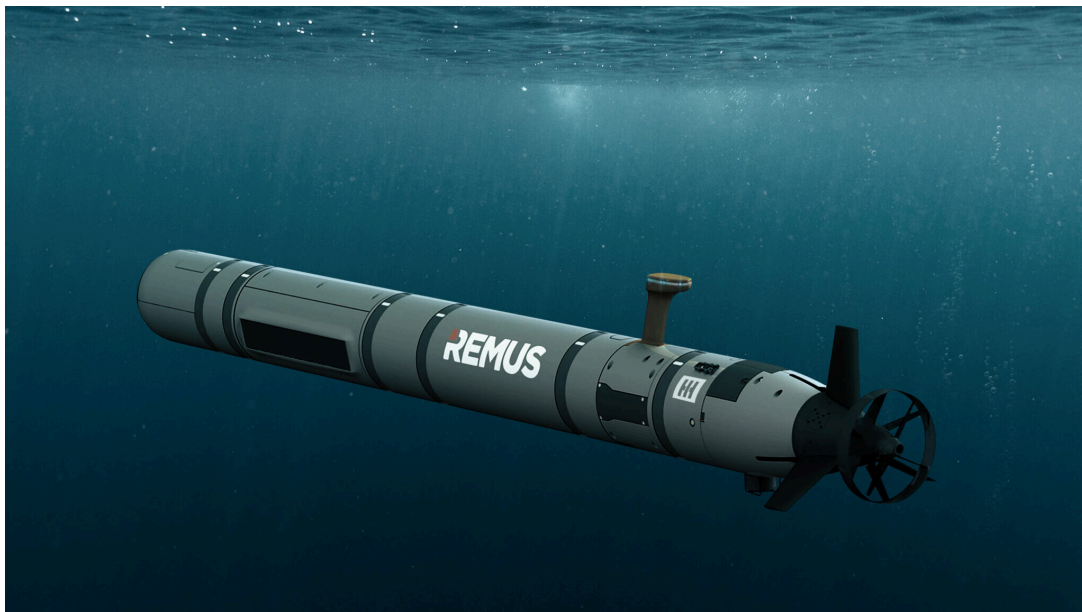
#### **5.1.4. Unmanned Surface Vehicles (USVs)**



USVs are uncrewed boats or ships that operate on the water's surface. They are primarily used for naval patrols, surveillance, mine detection, and anti-submarine warfare. USVs can either be remotely controlled or function autonomously. As navies modernize, these vehicles are becoming critical for expanding maritime capabilities without risking sailors' lives.

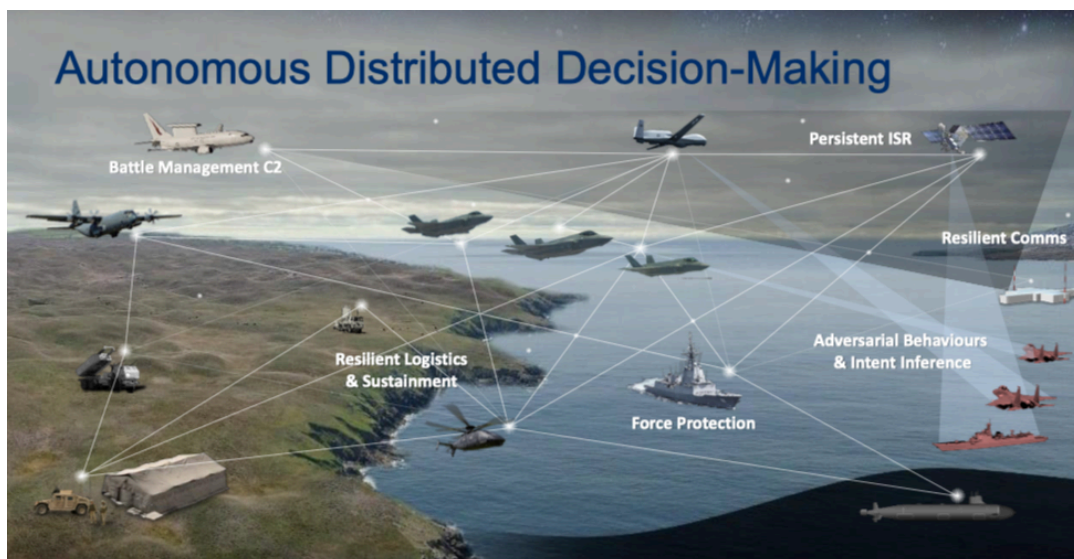
#### **5.1.5. Unmanned Underwater Vehicles (UUVs)**





UUVs are submersible systems designed to operate underwater without a human crew. Their missions often include underwater surveillance, mine countermeasures, mapping, and intelligence gathering. Due to the difficulty of underwater communication and navigation, many UUVs rely on autonomous programming to complete missions in GPS-denied environments.

#### 5.1.6. Fixed Defense Systems with Autonomous Capabilities



These are stationary weapon systems, such as automated gun turrets or missile defense platforms, that can detect, track, and engage threats without direct human input. Examples include the Israeli Iron Dome and the U.S. Phalanx CIWS. Though often

used for defensive purposes, the automation of these systems raises questions about accountability and proportionality in warfare.

### **5.1.7. Swarming Drones**



Swarming drones are groups of UAVs that operate together using artificial intelligence to coordinate their movements and decisions. They can overwhelm enemy defenses, conduct surveillance, or strike targets collectively. Unlike individually controlled drones, swarms behave like a networked system, adjusting in real time to threats or environmental changes. This technology represents a major step toward fully autonomous combat operations.

## **6. Legal Frameworks and Ethical Considerations**

### **6.1. International Humanitarian Law (IHL)**

IHL rules on the conduct of hostilities-notably the rules of distinction, proportionality and precautions in attack-are addressed to those who plan, decide upon and carry out an attack in armed conflict. These rules create obligations for human combatants in the use of all weapons to ensure compliance with IHL. The lawful use of autonomous weapon systems, as broadly defined, will therefore require that combatants retain a level of human control over their functioning in carrying out an attack.

Examining the way in which-and at which stages of their development, activation and operation-human control is currently exerted over autonomous weapon systems, through technical characteristics and operational parameters, can provide insights into

the type and degree of human control necessary for IHL compliance, including standards of predictability, operational constraints, and human supervision and ability to intervene. Overall, this analysis indicates that, under IHL, there will be limits to lawful levels of autonomy in weapon systems. States should now begin to determine where internationally agreed limits must be placed by assessing the type and degree of human control required, in the use of weapons to carry out attacks, to ensure compliance with IHL. This assessment should also consider the level of human control required to satisfy ethical considerations, which may call for additional limitations.

## **6.2. Geneva Conventions and CCW**

India is a High Contracting Party to the CCW and has actively participated in the global discourse on LAWS at the GGE. As the chair of the GGE in 2017, India played an instrumental role in leading the group toward affirming the eleven guiding principles on the use and development of LAWS. This was despite the hold-up in defining these systems and reaching a consensus on their technical aspects. In recent years, the GGE has faced criticism for its slow progress in establishing a binding norm to regulate LAWS—a shortcoming often attributed to its consensus-driven process where a single member's dissent is enough to reject a proposal.

Within the GGE, too, there have been calls for a binding instrument to regulate LAWS, as evidenced by member statements since 2016. These have shaped the GGE's current agenda, which has been focused on formulating the elements of such an instrument between 2024 and 2025, with discussions already underway in 2024.

## **7. Previous UN Actions and Resolutions**

### **8.1. Previous UNHRC Resolutions**

Since 2018, United Nations Secretary-General António Guterres has maintained that lethal autonomous weapons systems are politically unacceptable and morally repugnant and has called for their prohibition under international law. In his 2023 New Agenda for Peace, the Secretary-General reiterated this call, recommending that States conclude, by 2026, a legally binding instrument to prohibit lethal autonomous weapon systems that function without human control or oversight, and which cannot be used in compliance with international humanitarian law, and to regulate all other types of autonomous weapons systems. He noted that, in the absence of specific multilateral

regulations, the design, development and use of these systems raise humanitarian, legal, security and ethical concerns and pose a direct threat to human rights and fundamental freedoms.

United Nations independent experts have also expressed concerns regarding lethal autonomous weapons systems. UN Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns, was the first to raise the alarm about lethal autonomous weapons systems, in a report to the Human Rights Council in 2013. UN Special Rapporteur on counter-terrorism and human rights, Fionnuala Ní Aoláin, joined the Secretary-General's call for a global prohibition on lethal autonomous weapons systems in a report to the Human Rights Council in 2023.

## **8.2. DISEC Debates**

Even if an algorithm can determine what is legal under international humanitarian law, it can never determine what is ethical, the First Committee (Disarmament and International Security) heard today after it approved a new draft resolution on lethal autonomous weapons systems.

An algorithm must not be in full control of decisions that involve killing or harming humans, Egypt's representative said after voting in favour of the resolution. The principle of human responsibility and accountability for any use of lethal force must be preserved, regardless of the type of weapons system involved, he added.

The resolution expresses concern about the possible negative consequences and impact of autonomous weapons systems on global security and regional and international stability, including the risk of an emerging arms race, and lowering the threshold for conflict and proliferation, including to non-State actors.

It would have the General Assembly stress the urgent need for the international community to address the challenges and concerns raised by these weapons systems, as well as to seek the views of Member States and observer States on the systems. The Assembly would also request the Secretary-General to submit a substantive report reflecting the full range of views received and to invite the views of international and regional organizations, the International Committee of the Red Cross, civil society, the scientific community and industry.

After 11 separate recorded votes on its provisions, the draft resolution as a whole was approved by a recorded vote of 164 in favour to 5 against (Belarus, India, Mali, Niger, Russian Federation), with 8 abstentions (China, Democratic People's Republic of Korea, Iran, Israel, Saudi Arabia, Syria, Türkiye, United Arab Emirates).

The Committee also approved a wide-ranging draft resolution on through-life conventional ammunition management , by a vote of 169 in favour to none against, with 5 abstentions (Belarus, Democratic People's Republic of Korea, Russian Federation, Saudi Arabia, Syria). By the text, the Assembly would decide to adopt the Global Framework for Through-life Conventional Ammunition Management — a voluntary cooperative framework with political commitments to strengthen existing initiatives and address gaps on the issue.

Also requiring separate recorded votes today were resolutions on implementation of the Cluster Munitions Convention , implementation of the Anti-Personnel Mine Convention , the illicit trade in small arms and light weapons in all its aspects , the Arms Trade Treaty and assistance to States to curb the illicit traffic of these weapons .

Acting without a vote, the Committee approved a draft on the Convention on Certain Conventional Weapons .After concluding action on eight drafts on conventional weapons and sending them to the Assembly for adoption, the Committee began hearing general statements on drafts on other disarmament measures and international security.

## **8. Questions to be Addressed (QTBA)**

- 1) What regulations and measures could be taken to prevent future accidents?
- 2) What can be done to implement the previous agreements further?
- 3) Which UN bodies could be cooperated with for the inspection and regular control of autonomous weapons?
- 4) Have the agreements made been beneficial for negative outcomes? If not, what steps should be taken to improve them?
- 5) What precautions should countries take for possible consequences?
- 6) How has the presence of autonomous weapons in the world led to consequences and affected wars around the world?

## 9. Bibliography

<https://docs.un.org/en/A/79/88>

<https://disarmament.unoda.org/the-convention-on-certain-conventional-weapons/background-on-laws-in-the-ccw/>

[https://www.icrc.org/sites/default/files/document/file\\_list/autonomous\\_weapon\\_systems\\_under\\_international\\_humanitarian\\_law.pdf](https://www.icrc.org/sites/default/files/document/file_list/autonomous_weapon_systems_under_international_humanitarian_law.pdf)

<https://disarmament.unoda.org/update/pathways-to-banning-fully-autonomous-weapons/>

<https://carnegieendowment.org/research/2024/08/understanding-the-global-debate-on-lethal-autonomous-weapons-systems-an-indian-perspective?center=india&lang=en>

<https://disarmament.unoda.org/update/pathways-to-banning-fully-autonomous-weapons/>

<https://hms.harvard.edu/news/risks-artificial-intelligence-weapons-design>

[https://www.icrc.org/sites/default/files/document/file\\_list/autonomous\\_weapon\\_systems\\_under\\_international\\_humanitarian\\_law.pdf?](https://www.icrc.org/sites/default/files/document/file_list/autonomous_weapon_systems_under_international_humanitarian_law.pdf?)

<https://montrealethics.ai/the-evolution-of-war-how-ai-has-changed-military-weaponry-and-technology/>

<https://www.history.com/articles/gatling-gun?u#How-Did-the-Gatling-Gun-Work>