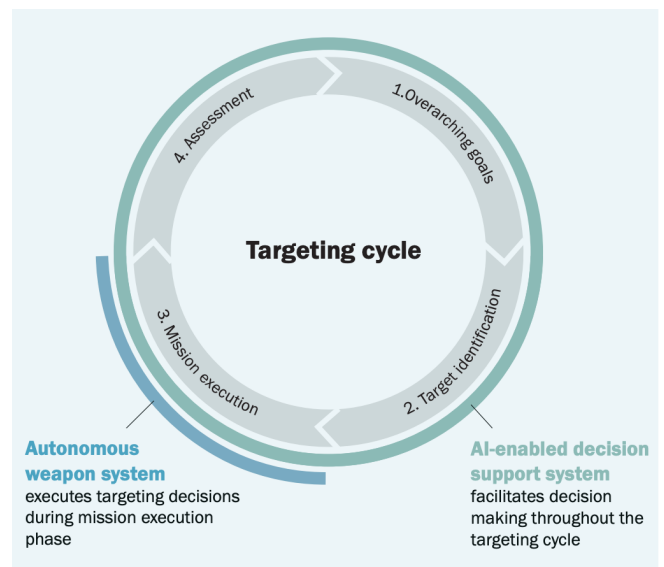


FORUM:	Disarmament Commission
ISSUE:	Measures to Regulate the Proliferation and Use of Lethal Autonomous Weapon Systems and Other AI-Embedded Military Technologies
STUDENT OFFICER:	Kenny (HoYoung) Noh
POSITION:	Deputy Chair of Disarmament Commission

Introduction

Lethal Autonomous Weapon Systems are defined as military structures that are capable of independently selecting and engaging targets without direct human intervention once activated. Unlike remotely operated weapons, ranging from small firearms to manually operated drones, which necessitate all degrees of continuous human control, also known as the human-in-the-loop (HITL), LAWS may operate along with varying degrees of autonomy. Pertinent configuration includes Human-on-the-loop (HOTL) oversight, where human operators do not directly control each action of the system, but continuously monitor the systematic operation, also known as an AI-enabled decision support system; to the extent, human-out-of-the-loop (HOOTL) operation functions fully autonomous, yielding nil proportion to immediate and simultaneous oversights and extricating from the prevalent trend of firearms.

In recent years, lethal autonomous weapon systems (LAWS) and AI-embedded military technologies have oriented their positions from mere speculative debate to proximity on the modern battlefield. This unconventional transition, mainly augmented by the rapid development of Artificial Intelligence,



The scope of autonomous weapon systems and AI-enabled decision support systems in the phases of the targeting cycle

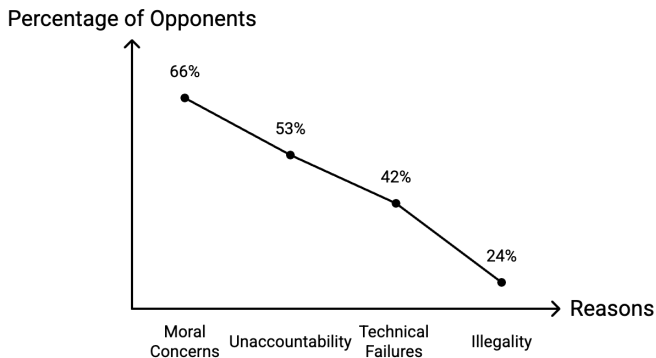


WK036, United Kingdom, Watchkeeper Unmanned Aerial Vehicle



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has raised legal concerns and ethical questions regarding the capability of non-human individuals to perceive, select, and eliminate targets with minimal or zero manual intervention. By the year of 2016, nearly 30 countries were reported to possess or were in the process of developing armed drones with increasing levels of autonomy; still and all, due to the limited accuracy and major technical issues, then-



Reasons for Opposing Lethal Autonomous Weapons

existing models remained mostly under human control.

By April 2025, 129 of 195 (66%) UN Member States had expressed favor for LAWS under corroborated legalistic discipline, signaling a broad and growing consensus on the urgency for international regulation.

Still, despite the broad consensus, worldwide

divergence remains over the scope, nature, and

application of the potential legislation. Militarily

Advanced States, including the United States and the

United Kingdom, argue that LAWS, under the operational protocols and strict policies, can corroborate conformity to international humanitarian law (IHL) due to the improved target discrimination and reduced collateral damage. Others, in comparison, claim that the allocation of the ability to execute people to algorithms undermines human dignity and increases the risk of potential uncontrolled killer-bots, especially in complex operational threats where machines could act outside the boundaries of human intention.

Background

With the initiation of the 2000s, the evolution of LAWS has been aggregating over the past several years. The MQ-1 Predator and MQ-9 Reaper, two remotely piloted systems, demonstrated the promise of unmanned aircraft platforms for precise attacks and surveillance. Semi-autonomous systems like the Republic of Korea's SGR-A1 sentry gun and Israel's Harpy loitering munition introduced automated target recognition and tracking by the middle of the decade. Autonomous capabilities were extended throughout the wider military spectrum, encompassing command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems, by concurrent developments in artificial intelligence.

When the Convention on Certain Conventional Weapons (CCW) convened its first informal conference of experts on the topic in 2014, the United Nations drew official notice of the implications of LAWS. The Group of Governmental Experts (GGE) on LAWS was created as a result of this process;



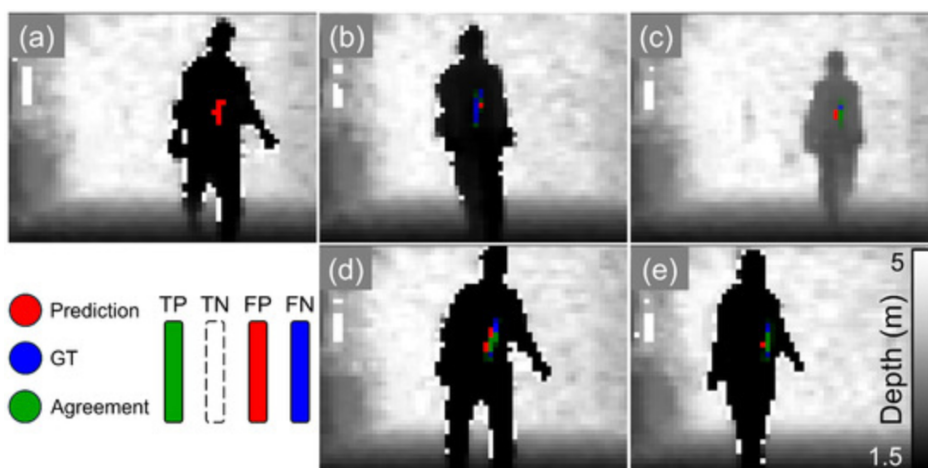
ever since then, the official conference has been held annually to discuss the legal, ethical, and practical topics germane to LAWS. The GEE has disclosed key principles, generally that of the need for human accountability, adherence to international humanitarian law (IHL), and safeguards against unintended harm; that said, consensus remains elusive on the scope and range of permissible autonomy in weapon complex.

The potential and risks of autonomous capabilities have been shown by operational experience. Targeting and monitoring human-on-the-loop systems in the Russo-Ukrainian conflict is being operated in the present battlefield with the assistance of AI in human detection technology, while loitering munitions altered battlefield dynamics in the 2020 Nagorno-Karabakh conflict: the six-week war between Armenia and Azerbaijan over the disputed Nagorno-Karabakh region, resulting in significant casualties. Though reports of target misidentification, civilian casualties, and cyber vulnerabilities indicate the dangers of deploying LAWS in real-time war zones.



Azerbaijani military vehicles equipped with loitering munitions parade through Baku during the 2020 Nagorno-Karabakh conflict

Regulation is made more difficult by the dual-use nature of many supporting technologies, including autonomous navigation, sensor fusion, and machine learning, which are widely available in the civilian sector. By reducing acquisition obstacles for both states and non-state actors, this accessibility



Depth-based human detection using civilian AI and sensors, illustrating dual-use potential for targeting in autonomous weapons

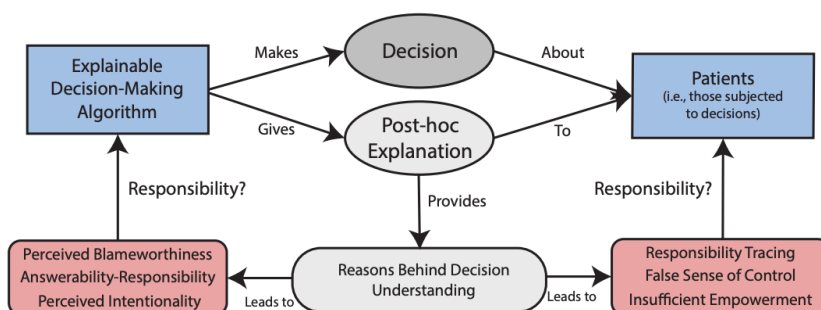
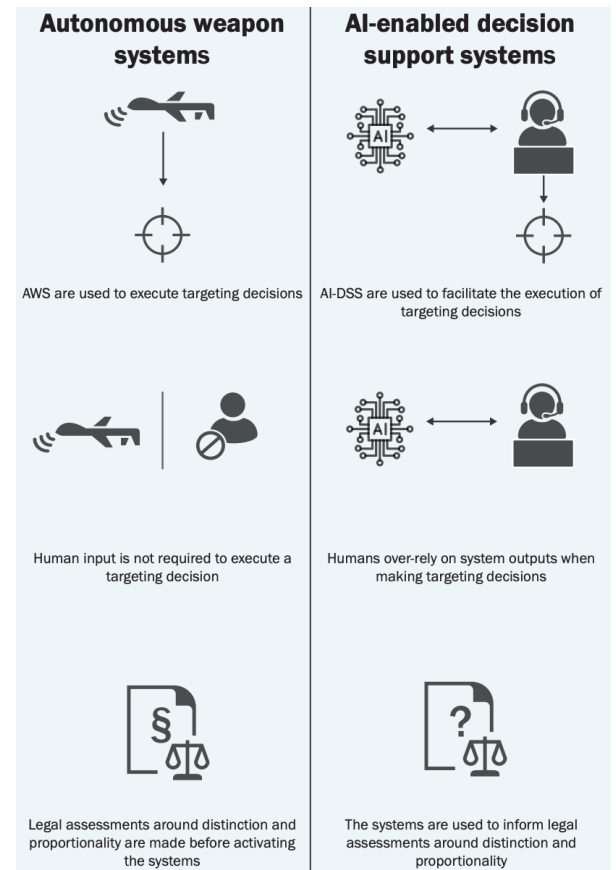
raises the dangers of proliferation. Establishing precise, legally binding international standards is becoming more and more necessary as commercial AI technologies become more potent and more reasonably priced.

Problems Raised

Legal Ambiguity and Accountability Gap

Lethal Autonomous Weapon Systems (LAWS) pose a serious threat to the accepted standards of International Humanitarian Law (IHL), in accordance with their propensity to obscure the chain of accountability in armed conflict. In the circumstance of less to no human monitoring at the point of engagement, determining the precise object or location for distinct havoc (not only limited to individual targets, but also ground zeros and militarily crucial areas) raises complications alongside diffused responsibility. Coined by Philip K. Howard, this *accountability gap* undermines the legal frameworks that strongly and specifically confide on certifiable human decision makers.

Agreed accords of legal experts exist concerning in regard of the forthwith consequences where “With an autonomous weapon system, no individual human can be held accountable for his or her actions in an armed conflict”. The International Committee of the Red Cross (ICRC) has rigorously contended that responsibility should remain with traceable actors, especially the operator or commanding authority authorizing implementation, to warrant the IHL obligation specific to individuals for decision.



Explainable decision-making algorithms can misleadingly shift blame onto those affected, allowing designers to evade responsibility

Estimates from subject-matter specialists suggest that any peculiar incidents involving LAWS, attribution of blame may be disputed or unclear due to the intricacy of algorithmic decision-making and the diffusion of responsibility among programmers, manufacturers, and military commanders.

Escalation of Forward Risks and Strategic Instability

AWS, functioning in accordance with multiple data processors, dispatches at a speed that surpasses human reaction time, harbingering the crisis of inadvertent acceleration in armed combats. Any advanced decision-making algorithms are not completely reliable in interpretation and detection, potentially leading to hostile interactions augmented by a single code.

Reuters has reported that civil society groups estimate more than 200 autonomous weapon systems are currently in operation worldwide. Recent advancements include the use of the series and other AI-enabled loitering bombs by Russian forces in the current conflict in Ukraine. Comparable to the most recent applications, Russian forces have applied various AI-enabled autonomous loitering munitions during the ongoing war with Ukraine. Defined as the HOTL aerial system, statisticians and war professionals acknowledged that the implementation of the technology suggests a shift in capital force units.



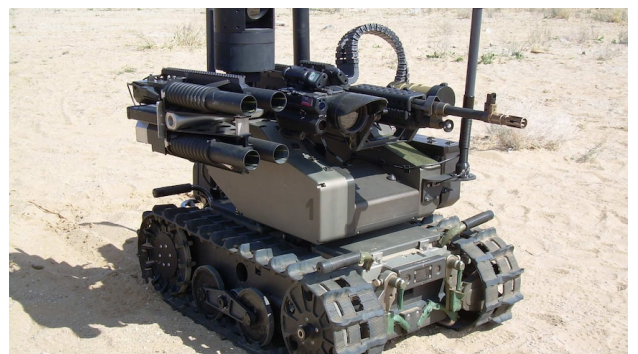
A Russian V2U loitering munition displayed on its catapult

In further extent, Human Rights Watch (HRW) and Harvard's International Human Rights Clinic (IHRC) have long warned that killer robots could cause lethal ramifications, as such incidents are robustly financed with the 2020 Libyan conflict under non-commanded STM Kargu-2 drone attacks and the 2023 Tudun Biri drone strike. This foreshadows the deviation of systematics under human control, in the context, aggravated by the downfall of human vigilance. These developments foster mistrust among states, as no government can be certain whether its rival's autonomous systems are defensive or preemptive in nature, thereby incentivizing first-strike doctrines and accelerating the arms race.

International Actions

United Nations Group of Governmental Experts (GGE) under the CCW

Ever since 2024, the Group of Governmental Experts (GGE) on Lethal Autonomous Weapon Systems (LAWS) has held yearly sessions at the United Nations Convention on Certain Conventional Weapons (CCW).



Killer Robot Capable of Land Mining and Volley Firing

The main global platform for discussing the moral, legal, and practical issues surrounding LAWS has been these gatherings. The GGE approved 11 Guiding Principles in 2019 that reaffirm the need for human responsibility for the use of weapons, respect for international humanitarian law, and the avoidance of autonomous systems that violate IHL. These principles are still non-binding, nevertheless, and Member States have yet to reach a legally binding agreement despite advancements in the definition of important terminology.

National Policy Frameworks and Advocacy Initiatives

A number of Member States have introduced national policies on autonomous weapons. The United States' Department of Defense Directive 3000.09 (revised in 2023) requires meaningful human control, senior-level approval for fully autonomous capabilities, and rigorous operational testing. The United Kingdom follows Article 36 reviews under Additional Protocol I to ensure legal compliance for new weapon systems. The Campaign to Stop Killer Robots, backed by over 180 non-governmental organizations, has called for strict control of HOTL systems and a preventative ban on HOOTL systems.

Key Players

United States

The United States, one of the leaders in the race of Autonomous Military Technology (AMT), views LAWS as a way to improve accuracy, lower threats to its own forces, and perhaps improve IHL compliance. The United States rejects a complete prohibition and supports regulating through national-level limits and current legal systems.

United Kingdom

The UK supports case-by-case evaluations of weapon systems and opposes preemptive restrictions, forming a tight alliance with the United States. It highlights how crucial operational precautions and adherence to Article 36 legal reviews are when evaluating new technology.

China

China has openly backed the concept of outlawing the use of deadly, completely autonomous weapons that are not significantly



Chinese Quadruple Pedaled HOTL Robot

controlled by humans, especially when used offensively against people. Beijing, however, has opposed calls for a broad, legally enforceable prohibition that may limit the advancement of certain autonomous systems. China supports a strategy that permits the peaceful and defensive use of AI and robots and places a strong emphasis on state sovereignty in controlling military AI. Although some governments and civil society organizations have criticized it for preserving definitional uncertainty, which might allow for the ongoing development of dual-use technology for military applications, it has also encouraged discussion within the CCW.

South Korea

Among its many unmanned aerial and marine platforms, South Korea is a major harbinger of autonomous and semi-autonomous defense technology, most notably the SGR-A1 sentry system stationed along the Demilitarized Zone (DMZ). The government has not approved a legally binding ban on LAWS, even though it supports debates at the CCW. Republic of Korea supports regulating through national frameworks and voluntary international standards rather than preemptive restrictions, highlighting the strategic necessity for technical growth in light of regional security concerns, notably from the Democratic People's Republic of Korea (DPRK).

Possible Solutions

Legally Binding International Frameworks on LAWS

Under the supervision of CCW, nations could negotiate a protocol that clearly forbids completely autonomous weapons and establishes legally binding requirements for systems that are only partially autonomous. Meaningful human control, open testing, and independent compliance verification should all be required under such a system.

Global Technology Safeguards, Export Controls, and Traceable Recordings

Nations may implement export regulations for AI algorithms, sensor fusion modules, and autonomous navigation systems as part of an international framework for the supervision of dual-use technologies. This would maintain valid civilian uses while restricting proliferation to non-state actors and lowering the possibility of unchecked expansion.



Glossary

Lethal Autonomous Weapon System (LAWS or AWS)

Military structures that are capable of independently selecting and engaging targets without direct human intervention, once activated.

Loitering Munition

A type of weapon that combines features of a missile and a remotely or automatically piloted aircraft.

Human-in-the-loop (HITL)

A mode of weapon operation where human operators directly control or approve each action before execution.

Human-on-the-loop (HOTL)

A mode where humans monitor and can intervene during a system's operation, but do not control each action in real time.

Human-out-of-the-loop (HOOTL)

A fully autonomous mode where the system operates without any human supervision or intervention during execution.

Dual-use Technology

Technology that can be used for both civilian and military purposes.

C4ISR

Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance systems.

Convention on Certain Conventional Weapons

The United Nations treaty, adopted in 1980 to regulate or bans specific types of conventional weapons that cause unnecessary suffering to combatants or indiscriminate harm to civilians



Boston Dynamics SpotMini robot



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