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Issue Brief

Force Multipliers: Autonomous Weapons Systems and the Ukraine and Gaza Conflicts

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Summary

The use of Autonomous Weapon Systems has changed the dynamics of warfare in recent times. The rise of Artificial Intelligence has reshaped military power, strategies and decision-making in war. AI is transforming modern combat through greater speed, precision and low-cost deployment.

Introduction

Autonomous weapons systems (AWS) are changing the nature of modern warfare through AI-enabled decision-making. As per the United States Department of Defense Directive 3000.09, autonomous weapons systems are platforms capable of ‘selecting and engaging targets without further intervention by a human operator’, a definition that anchors the concept of autonomy specifically to the targeting functions.¹ AWS combines artificial intelligence with lethal platforms like loitering munitions, drones, AI-powered surveillance systems, and swarm drones that have capabilities to identify and strike targets with limited human control. The conflicts in Ukraine and Gaza have become testing grounds for AWS, showing how these technologies operate in both high-intensity and asymmetric conflicts.

Autonomous weapons systems are mainly considered in two key respects: how much control humans have over decisions to use lethal force, and how much autonomy the system itself has. AWS are commonly grouped into three categories: ‘human-in-the-loop’, ‘human-on-the-loop’ and ‘human-out-of-the-loop’, depending on the degree of human involvement. Many autonomous systems currently in use fall into the ‘human-on-the-loop’ category; even though they can carry out pre-planned actions involving lethal force, human control can intervene if needed.² This classification raises significant International Humanitarian Law concerns regarding accountability, proportionality and compliance.

AWS as Force Multipliers

A Force multiplier is a term used in military doctrine that refers to the capacity of a technology, technique, or organisational arrangement to expand and amplify the combat effectiveness of a given force well beyond its numerical strength alone.³ The force-multiplication effect of AWS operates across four distinct and interconnected dimensions: speed, persistence, precision and expendability. Speed refers to the capacity of autonomous weapons to execute targeting cycles at machine speed, overcoming the physiological and cognitive delays in human decision-making on the battlefield. Loitering munitions with AI guidance can detect and engage a target in a

¹ [“Directive 3000.09: Autonomy in Weapon Systems”](#), Department of Defense, United States of America, 25 January 2023, p. 14.

² [“Autonomy, Artificial Intelligence and Robotics: Technical Aspects of Human Control”](#), International Committee of the Red Cross (ICRC), August 2019.

³ [“Joint Publication 3-05.1: Joint Terminal Attack Controller \(JTAC\) Training and Certification”](#), Joint Chiefs of Staff, NDU Press, 26 April 2007.

much shorter time than those controlled by humans. AWS acts faster because it doesn't get tired or confused as humans do.⁴

Persistence is the second dimension. As humans need rest, resupply, and rotation, autonomous platforms can conduct continuous surveillance of targets for longer durations, in hours or days. A persistent autonomous intelligence, surveillance and reconnaissance (ISR) system can reduce intelligence collection gaps. As observed in Ukraine, persistent drone surveillance has made it really hard for either side to move a group of people on the ground without being seen. Similarly in Gaza, persistent aerial surveillance enabled Israel Defense Forces to keep an eye on designated targets across urban areas, creating a challenge for the Gaza military. This has changed the way wars are traditionally fought.⁵

Precision and expendability are the third and fourth dimensions, respectively. Compared to traditional guided munitions, AI-guided loitering munitions deliver superior precision at a significantly lower cost.⁶ Expendability changes the cost equation for high-risk missions. An expendable autonomous platform can target highly defended areas without the fear of losing a pilot.⁷ Collectively, these four aspects illustrate the importance of AWS as a force multiplier.

Ukraine: Attrition Warfare and Autonomous Scale

The Russia–Ukraine conflict has emerged as one of the prime examples for testing autonomous and semi-autonomous systems in a conventional war against a peer adversary since World War II. Ukraine's early deployment of the Turkish-made Bayraktar TB2 Unmanned Aerial Vehicle (UAV) demonstrated that AI-enabled unmanned systems, when combined with real-time ISR and precise targeting data, could effectively weaken the enemy's conventional armoured units. In the first week of the full-scale invasion, TB2 operations struck Russian Buk surface-to-air missile

⁴ Michael C. Horowitz, [“When Speed Kills: Lethal Autonomous Weapon Systems, Deterrence and Stability”](#), *Journal of Strategic Studies*, Vol. 42, No. 6, 2019, pp. 764–88.

⁵ Aosheng Pusztaszeri and Emily Harding, [“Technological Evolution on the Battlefield”](#), Center for Strategic and International Studies (CSIS), 16 September 2025.

⁶ Paul O'Neill, Sam Cranny-Evans and Sarah Ashbridge, [“Assessing Autonomous Weapons as a Proliferation Risk: The Future Has Not Been Written”](#), Occasional Paper, Royal United Services Institute (RUSI), 8 February 2024.

⁷ Seth G. Jones and Seamus P. Daniels, [“War and the Modern Battlefield: Insights from Ukraine and the Middle East”](#), Center for Strategic and International Studies (CSIS), 16 September 2025.

systems, armoured vehicles, and other military targets, highlighting the operational value of integrating AWSs with real-time battlefield intelligence.⁸

As the war escalated between Russia and Ukraine, both sides started making adaptive changes to the situation. Russia swiftly acquired and deployed the Iranian-made Shahed-136 loitering munitions to target Ukraine's critical infrastructure because of their low cost and high destructive potential. Each of these drones costs them approximately US\$ 20,000 to US\$ 50,000 per unit.⁹ Russia has been deploying these drones to overwhelm Ukrainian air defences, and later this number rose approximately from 80–100 to 100–200.¹⁰ To overcome this challenge, Ukraine developed a domestic manufacturing unit of substantial scale during wartime. Ukraine planned to produce around 1 million first-person view (FPV) drones in 2024. These FPV drones became an important weapon against Russian tanks and soldiers on the front itself.¹¹

Ukraine has also developed and deployed AI-enabled command-and-targeting software to reduce sensor-to-shooter time. This includes the Delta battlefield management system, developed by Ukraine and designed to operate in accordance with NATO interoperability standards. It uses multiple sources of information, such as satellite images, signals intelligence, and drone reconnaissance, to find targets quickly and precisely. This helps soldiers make decisions faster without depending on higher headquarters' processing cycle.¹² This system has cut the kill chain interval from target identification to engagement.

Before the implementation of Delta, the Ukrainian military took up to 72 hours for the entire process of identifying and engaging the target. However, with Delta, that cycle has been shortened to two minutes.¹³ Russia has responded with electronic warfare countermeasures, which include GPS jamming, radio-frequency jamming and physical destruction of drones.¹⁴ This has created a dynamic contest between measures and countermeasures that shapes the conflict's technological nature.

⁸ Lauren Kahn, [“How Ukraine is Using Drones Against Russia”](#), Council on Foreign Relations, 2 March 2022.

⁹ Benjamin Jensen and Yasir Atalan, [“Drone Saturation: Russia's Shahed Campaign”](#), Center for Strategic and International Studies (CSIS), 13 May 2025.

¹⁰ [“Russian Offensive Campaign Assessment, March 3, 2025”](#), Critical Threats Project, Institute for the Study of War (ISW), 3 March 2025.

¹¹ [“Fedorov: Ukraine to Produce 1 Million Drones per Year”](#), *The Kyiv Independent*, 25 February 2024.

¹² Jake Epstein, [“Ukraine's Digital War Tool Cut the Time Between Finding and Striking Russian Targets From Days to Minutes”](#), *Business Insider*, 24 November 2025.

¹³ Ibid.

¹⁴ Brig Jaideep Agarkar, [“Russia-Ukraine War: Lessons from an Electronic Warfare \(EW\) Perspective”](#), Centre for Land Warfare Studies (CLAWS), 31 May 2025.

The Russia-Ukraine conflict exemplifies how autonomous and semi-autonomous technologies are transforming modern warfare. The two states deployed low-cost drones, AI-enabled targeting systems, and loitering munitions. These help them counter traditional military disadvantages and boost their efficiency.

Gaza: Urban Warfare and AI-Enabled Targets

The Israeli military campaigns in Gaza started in October 2023 and introduced a new aspect of using AI-enabled targeting in urban warfare. The Israeli Defense Forces (IDF) developed an AI-based programme known as ‘Lavender’, which was unveiled for the first time. According to +972, this system identifies individuals suspected of being affiliated with Hamas and Palestinian Islamic Jihad (PIJ), including those of lower rank, as potential targets for bombing. Lavender is said to have clocked tens of thousands of individuals affiliated with Hamas and PIJ and reduced target suggestion time to seconds, thereby streamlining the decision-making process.¹⁵

Apart from an AI-based targeting system, the IDF also deployed quad-copter drones and other UAVs across Gaza’s urban battlespace. The disclosure of ground forces would have heavy casualties due to the high density of buildings and tunnel networks. In this case, small tactical drones capable of operating in dense urban airspace played an important role. They provided reconnaissance, target identification, and real-time battlefield awareness, enabling more precise operations while reducing the exposure of ground forces. The tactical utility of this system in urban combat was significant. These systems can enter buildings, avoid obstacles, and search spaces where traditional ground options lead to casualties.¹⁶

The situation in Gaza revealed some operational and reputational issues with the AI-enabled targeting cycle. Reports also indicated that the use of the Lavender system to identify lower-ranking operatives, together with associated targeting decisions, raised concerns about increased collateral damage.¹⁷ According to the Palestinian Ministry of Health in Gaza, the reported death toll reached 37,877 by mid-2024, though independent analysis estimated it at approx. 64,260.¹⁸ This became a major international debate regarding the legal and ethical limits of AI-assisted warfare.

¹⁵ Yuval Abraham, [“‘Lavender’: The AI Machine Directing Israel's Bombing Spree in Gaza”](#), +972 Magazine, 3 April 2024.

¹⁶ Dov Lieber, [“Small Drones Are Helping Israel Navigate the Urban Battlefield in Gaza”](#), *The Wall Street Journal*, 29 December 2023.

¹⁷ Yuval Abraham, [“‘Lavender’: The AI Machine Directing Israel's Bombing Spree in Gaza”](#), no. 15.

¹⁸ [“Gaza: 64,000 Deaths Due to Violence Between October 2023 and June 2024, Analysis Shows”](#), London School of Hygiene & Tropical Medicine (LSHTM), 2025.

These results show that the advantage of AWS involves legal and ethical challenges. These challenges must be incorporated into states' operational planning, rules of engagement, and military decision-making.¹⁹

Comparative Analysis: Ukraine and Gaza

Comparative Element	Ukraine Theatre	Gaza Theatre
Conflict Typology	Industrial-scale warfare across frontlines	High-density urban warfare
Primary Function of AWS	Attrition-destruction of armour, logistics, command nodes, and infrastructure	Intelligence-kinetic targeting and compressed targeting cycles in urban areas
Operational Emphasis	Mass, persistence, scalability, and cost-effectiveness	Precision, surveillance integration, and rapid response
Battlefield Environment	Open and semi-open battlefronts	Populated urban area
Type of AWS Used	FPV drones, loitering munitions, autonomous reconnaissance systems	AI-enabled commercial quad-copters and surveillance-strike drones
Cost-Exchange Ratio	Low-cost drones destroying expensive tanks	Commercial quad-copters replacing special operations forces
Relevance for India	Supports indigenous low-cost autonomous warfare capability	Highlights utility in urban and counterinsurgency operations
Electronic Warfare Challenges	Jamming, spoofing, signal disruption, and counter-drone adaptation	Optical, acoustic, and sensor limitations in urban environment
Technological Sustainability	Continuous innovation is necessary	Constant sensor and targeting adaptation are necessary

¹⁹ [“Expert Consultation Report on AI and Related Technologies in Military Decision-Making on the Use of Force in Armed Conflicts”](#), ICRC and Geneva Academy, March 2024.

Strategic Limitation of AWS	No single platform remains dominant for long	Sophisticated systems face operational and sensor limitations
Strategic Conclusion	AWS act as force multipliers within integrated warfare systems	AWS enhance operational efficiency but require doctrinal alignment

Source: Compiled by the author from RUSI, ICRC, Business Insider, LSHTM, +972 Magazine, and CEPA reports.

The conflicts in Ukraine and Gaza collectively illustrate that AWS have transformed modern warfare, accelerating the shift from single-platform to system-of-systems warfare. Ukraine showcases the effectiveness of low-cost autonomous systems in large-scale attritional warfare. In contrast, Gaza highlights the growing importance of AI-enabled precision targeting, ISR and urban operations. Together, these conflicts indicate that future warfare will depend primarily on the combined use of AI-enabled ISR, autonomous targeting assistance, and networked battlefield systems rather than on fully independent lethal autonomy.²⁰

Strategic Implications

As seen above, the deployment of AWS in the Ukraine and Gaza conflicts holds major strategic implications for controlling escalation, maintaining deterrence stability, and ensuring global security. One of the major strategic concerns relates to escalation dynamics. In this regard, AI-driven drones, loitering munitions systems, and automated target technologies have shortened the sensor-to-shooter cycle, enabling faster military responses.²¹ As operational decision-making time decreases, human deliberation and political control also decrease. This increases the risk of escalation. Paul Scharre’s book *Army of None* warns that a high degree of automation may lead to miscalculation, accidental engagements and escalation during conflict.²²

²⁰ Lt Gen Karanbir Singh Brar (Retd), “[Technology and the Future of Warfare](#)”, Issue Brief, Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA), 2025.

²¹ Vladislav Chernavskikh and Jules Palayer, “[Impact of Military Artificial Intelligence on Nuclear Escalation Risk](#)”, SIPRI Insights on Peace and Security No. 2025/06, Stockholm International Peace Research Institute (SIPRI), June 2025.

²² Paul Scharre, *Army of None: Autonomous Weapons and the Future of War*, W. W. Norton & Company, New York, 2018.

Furthermore, AWS is a challenge to traditional deterrence and conventional warfare. Low-cost drones and AI-assisted systems allow weaker states to impose serious military and economic repercussions on stronger opponents through continuous surveillance and targeted strikes.²³ For example, in Ukraine, FPVs played an important role, showcasing how low-cost technologies can neutralise expensive armour and logistics networks.

A further consequence is the risk of proliferation associated with accessible drone technologies and open-source AI tools. The diffusion of autonomous weapons into the hands of non-state actors, proxy groups and militant organisations increases regional unrest and asymmetric assaults.²⁴ The above case study of the Gaza conflict explains how autonomous and semi-autonomous weapon systems can be deployed in irregular warfare environments, thereby increasing the complexity of achieving escalation control and ensuring civilian protection.²⁵

Ethical and Legal Dimension

The ethical and legal aspects of AWS have emerged as major issues in contemporary international law and applied ethics. Distinction, proportionality and precaution are the three core principles of the International Humanitarian Law (IHL). They are at risk because of the shift in lethal decision-making of autonomous systems. The principle of Distinction requires that the hostile should always differentiate between combatants and civilians. The principle of Proportionality states that civilian casualties must not exceed the military advantage. The principle of Precaution means that all possible measures should be taken to minimise civilian casualties before and during an attack.²⁶

Current AWS, including those examined in the Ukraine and Gaza case studies, generally rely on sensors and automated target-recognition functions to identify and classify targets. However, their reliability in the electromagnetic, visual and cognitive complexity of real combat is still debated. There is no recognised international

²³ Matthew N. Slusher, “[Lessons from the Ukraine Conflict: Modern Warfare in the Age of Autonomy, Information, and Resilience](#)”, Center for Strategic and International Studies (CSIS), 2 May 2025.

²⁴ Paul O'Neill CBE, Sam Cranny-Evans and Sarah Ashbridge, “[Assessing Autonomous Weapons as a Proliferation Risk](#)”, no. 6.

²⁵ “[Artificial Intelligence and Machine Learning in Armed Conflict: A Human-Centred Approach](#)”, International Committee of the Red Cross (ICRC), 6 June 2019.

²⁶ Lieutenant Colonel Andre Haider, “[Autonomous Weapon Systems in International Humanitarian Law](#)”, *Joint Air Power Competence Centre (JAPCC) Journal*, Edition 27, December 2018.

standard for testing or certifying the target discrimination capability of AWSs.²⁷ The ICRC has consistently maintained that there must be meaningful human control in all lethal decision-making processes, arguing that increasing autonomy in targeting systems raises significant legal and ethical concerns.²⁸ The use of AI-generated target lists in Gaza raises questions about the efficacy of algorithm-based recommendations to make split-second decisions where IHL requires human intervention to authorise lethal engagement.²⁹

The question of legal accountability further poses a structural challenge. According to existing IHL, criminal responsibility for violations is attributed to individuals, such as commanders, soldiers and policymakers. When an autonomous system commits an act that would constitute a war crime if committed by a human operator, the chain of legal responsibility becomes diffuse, contested, and potentially unenforceable. According to legal experts, this problem is termed the “responsibility gap”, which poses challenges for existing IHL accountability frameworks.³⁰ For military powers aiming to operate AWS responsibly, it is important to build a strong internal accountability system, well-defined rules of engagement for autonomous lethal actions, and operational guidelines that ensure human intervention. It is not only a legal necessity but also an important positive strategic reputation in an age when state conduct on the battlefield is intensified.³¹

Lessons for India

The ongoing conflicts in Ukraine and Gaza demonstrate that future military engagements will heavily depend on autonomous technologies, AI-enabled intelligence networks, and low-cost strike capabilities. A major takeaway for India is the growing use of drones, loitering munitions, AI-enabled targeting systems, autonomous surveillance networks, and drone-centric operations in dense urban warfare environments.³² This is especially pertinent for India in counterterrorism

²⁷ Vincent Boulanin, [“Limits on Autonomy in Weapon Systems: Identifying Practical Elements of Human Control”](#), SIPRI and the International Committee of the Red Cross (ICRC), June 2020.

²⁸ [“Autonomous Weapons: Decisions to Kill and Destroy Are a Human Responsibility”](#), Statement of the ICRC to the Convention on Certain Conventional Weapons (CCW) Meeting of Experts on Lethal Autonomous Weapon Systems, Geneva, 11 April 2016.

²⁹ Jessica Dorsey, [“Israel's AI-Enabled Targeting of Hamas Members Jeopardizes Moral and Legal Standards of Warfare”](#), Utrecht University, 18 July 2024.

³⁰ Robert Sparrow, [“Killer Robots”](#), *Journal of Applied Philosophy*, Vol. 24, No. 1, March 2007, pp. 62–77.

³¹ [“Autonomous Weapon Systems: Implications of Increasing Autonomy in the Critical Functions of Weapons”](#), Expert meeting, ICRC, 15–16 March 2016.

³² Noah Sylvia, [“Israel's Targeting AI: How Capable Is It?”](#), Royal United Services Institute (RUSI), 8 February 2024.

and urban combat environments, where swift intelligence integration and timely situational awareness are essential. These developments suggest that India should focus on developing integrated drone warfare capabilities, counter-unmanned aerial systems (UAS) strategies, and electronic warfare capabilities, especially in the context of high-intensity potential risk along the Line of Actual Control (LAC) and Line of Control (LOC).³³

Furthermore, the conflict highlighted how traditional military resources can be compromised by autonomous and semi-autonomous technologies. Relatively low-cost drones and AI-enabled targeting systems have demonstrated the ability to destroy tanks, artillery, command posts and infrastructure sites.³⁴ This suggests that India’s military doctrine should focus on mobility, concealment, low-cost drones, AI-driven weapon systems and counter-electronic warfare. India should also keep a check on the proliferation of commercial drones and open-source AI tools, which raises the risk of their acquisition by terrorist groups.

These conflicts underscore the growing importance of indigenous innovation, AI-driven targeting capabilities and autonomous systems. The Defence Research and Development Organisation (DRDO) will play a crucial role in future military preparedness by developing indigenous drones, loitering munitions, counter-UAS systems, AI-assisted surveillance platforms, and autonomous battlefield technologies. Future warfare will depend on rapid technological adaptation, network-centric operations, and cost-effective precision strike capabilities.

DRDO’s ongoing projects in swarm drone technologies, autonomous surveillance systems, electronic warfare platforms, and anti-drone systems are therefore of significant strategic importance for India’s future defence modernisation.³⁵ The strategic collaboration between DRDO and India’s leading academic institutions, such as IISc and other premier academic institutes, will help deepen foundational research in AI algorithm development, robotic systems, advanced aerospace systems and materials, and other emerging defence technologies.³⁶ Strengthening domestic research and development will also reduce dependence on foreign military technologies and enhance operational self-reliance during prolonged conflicts.

³³ Pintu Kumar Mahla, [**“Military Drones in India: New Frontier of Warfare”**](#), *Journal of Defence Studies*, Vol. 16, No. 4, October–December 2022, pp. 253–261,.

³⁴ David Kirichenko, [**“Artificial Intelligence’s Growing Role in Modern Warfare”**](#), *War Room: The Online Journal of the U.S. Army War College*, 21 August 2025.

³⁵ [**“Operation Sindoor: Indigenous Defence Technologies Demonstrate India’s Strategic Capability”**](#), Press Information Bureau, Ministry of Defence, Government of India, 14 May 2025.

³⁶ [**“MoU between DRDO and IISc for Joint Advanced Technology Program”**](#), Press Information Bureau, Ministry of Defence, Government of India, 8 February 2021.

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