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Artificial Intelligence and Autonomous Weapons - Strategic and Ethical Considerations for European Defence

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DIRECTOR'S EDITORIAL

The integration of artificial intelligence (AI) into autonomous weapon systems marks a paradigm shift in modern warfare. While AI has traditionally been employed for operational support and decision-making, we are now witnessing the emergence of systems capable of independently identifying and engaging targets. This development not only raises fundamental strategic ques-tions but also confronts us with profound moral and legal dilemmas that challenge the core principles of European security policies and international law.

Europe stands at a crucial crossroads. On one hand, there is a pressing need to keep pace with technological advancements and invest in AI to maintain a competitive edge in the international defence landscape. On the other, Europe has long been defined by its commitment to ethical warfare, human rights, and international humanitarian law. The tension between innovation and ethics is a recurring theme throughout this study.

Within the European Union, member states adopt varying approaches to AI in defence. Some advocate for strategic autonomy through AI-driven military capabilities, while others call for strict regulations or even a ban on fully autonomous weapon systems. This study explores these divergent perspectives and places them within the broader context of global trends, comparing Europe's stance with those of major powers such as the United States, China, and Russia.

Beyond the strategic and ethical dimensions, this study also examines the impact of AI-driven defence on European cooperation, public opinion, and geopolitical stability. While some techno-logical advancements enhance security and improve military efficiency, critics warn of the risks of an AI arms race and the potential erosion of human control over lethal decision-making.

At Finabel, we remain committed to fostering an informed debate on AI's integration into de-fence, with a strong emphasis on balancing innovation, regulation, and international cooperation. This study contributes to that discussion by offering a clear and balanced assessment of the chal-lenges and opportunities ahead. It is our responsibility to ensure that AI in military contexts is deployed in a manner that not only enhances security and strategic capability but also upholds the fundamental values and norms that Europe stands for.

Mario Blokken
Director

ABSTRACT

The integration of artificial intelligence (AI) into autonomous weapons systems represents a shift into modern warfare, offering unprecedented capabilities while posing profound strategic and ethical challenges. This paper explores the strategic benefits and ethical challenges associated with deploying AI-driven technologies in European defence strategies. It highlights the potential military advantages, including enhanced operational efficiency, while addressing critical ethical concerns such as accountability, decision-making in life-or-death scenarios and the risk of conflict escalation.

By analysing European defence policies and international frameworks, this study offers a nuanced perspective on balancing technological innovation with ethical imperatives, ensuring stability and adherence to international humanitarian law. Through case studies of European and global approaches, this paper's aim is to inform strategies that harmonise security objectives with moral and legal principles.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AWS	Autonomous Weapon Systems
EU	European Union
IHL	International Humanitarian Law
EDF	European Defence Fund
PESCO	Permanent Structured Cooperation

INTRODUCTION

The rapid development of artificial intelligence (AI) is reshaping global industries, and the defence sector is no exception. AI's integration into military systems, particularly autonomous weapon systems (AWS), marks a transformative leap in modern warfare. These systems, powered by sophisticated algorithms, promise unparalleled precision, operational efficiency, and reduced human risk. Yet, their deployment raises profound ethical and strategic questions, especially in the context of European defence strategies, where historical commitment to human rights and international cooperation intersects with evolving security demands. Understanding the dual nature of AI in the defence sector is necessary in ensuring its benefits do not compromise core ethical and democratic principles.

To give context to this discussion, it is essential to define key terms. AI refers to the computational systems that can perform tasks that typically require human intelligence, such as learning, problem-solving and decision-making (Pellicelli, 2023). When used in defence, AI often powers systems that can analyse vast data sets, predict outcomes, and autonomously execute actions (Rashid et al., 2023). AWS are a subset of these technologies, encompassing weapons capable of selecting and engaging targets without human intervention—these include autonomous drones, land-based robots and maritime systems (Rashid et al., 2023). Central to this debate is the concept of ethics in warfare, which concerns the moral principles which guide the use of force, particularly when life and death decisions are entrusted to machines.

The European defence context adds a unique perspective to this discussion. The European Union (EU) has historically championed international humanitarian law (IHL), emphasising accountability, proportionality and the protection of civilians in conflict (European Commission, 2024). At the same time, European nations face growing external threats, including the militarisation of AI by global powers such as the United States, China and Russia (Csernatoni, 2024). Balancing the strategic imperative of staying technologically competitive with ethical commitments to human oversight and accountability poses a formidable challenge. This tension underscores the urgency of a cohesive European strategy that reconciles these competing priorities.

The objective of this paper is to explore the interplay between the strategic advantages and ethical implications of AI and AWS in European defence. On the strategic front, AI holds the promise of enhancing situational awareness, improving decision-making speed, and increasing resource efficiency. However, the deployment of autonomous systems raises ethical concerns, including accountability gaps, the dehumanisation of warfare, and the risks of unintentional escalation. This paper argues that Europe must adopt a dual approach; leveraging AI for security while also developing robust regulatory frameworks to mitigate ethical risks and ensure alignment with European values.

The structure of this paper reflects the dual focus outlined. First, the historical evolution of AI in defence will be examined, tracing its trajectory from decision-support tools to

autonomous systems. Next, the strategic considerations for European defence will be analysed, highlighting both the opportunities and challenges associated with integrating AI into military strategies. Following this, the ethical dimensions will be explored in depth, encompassing moral frameworks, legal obligations, and public opinion. Finally, the paper will analyse case studies of European and non-European approaches that will provide practical insights into how different nations balance these issues. While the integration of AI into defence offers transformative potential, it also necessitates a critical reflection on its implications for European security, ethics, and global stability. This paper seeks to contribute to this vital discourse by offering a comprehensive and balanced analysis, guiding Europe towards a defence strategy that is both innovative and principled.

TECHNOLOGICAL ADVANCEMENTS AND HISTORICAL CONTEXT

Technological progress has always been a cornerstone of military evolution, shaping strategies and altering the balance of power on the battlefield. Among the most transformative advancements in recent decades is the rise of AI in military applications (Csernatoni, 2024). AI, which enables machines to perform tasks that typically require human intelligence, has evolved from a niche technological pursuit to a critical asset in modern defence strategies. This section examines the historical evolution of AI in military contexts, the development of autonomous weaponry, and their collective impact on military strategy and warfare.

AI's military applications can be traced back to the mid-20th century when computer systems were first employed for logistical purposes (Araya & King, 2022). Early applications focused on optimising supply chains, transportation and resource allocation, particularly during large-scale conflicts such as the Cold War. These systems used rudimentary algorithms to streamline operations and ensure efficient mobilisation of resources, setting the stage for AI's broader adoption. By the late 20th century, AI began making inroads into decision support systems capable of assisting military personnel in analysing data and identifying patterns, enhancing situational awareness (Nadibaidze et al., 2024).

Within Europe, AI integration has followed a trajectory shaped by both technological innovation and geopolitical necessity. One notable milestone was the adoption of AI-based warning systems during the 1980s and 1990s, specifically in NATO operations (NATO, 2020). These systems were designed to process an extensive amount of intelligence data, allowing for real-time insights that improve the accuracy of threat detection. In more recent history, AI has been used in cyber security, where it identifies and mitigates digital threats to critical infrastructure—a domain that has become increasingly vital as hybrid warfare tactics rise (Binhammad et al., 2024).

The creation of battlefield AI systems represents another key development. European nations have invested in tools that use AI for mission planning and real-time decision-making. For example, in the United Kingdom,

Inzpire specialises in AI-driven training environments that simulate real-world combat scenarios (Inzpire, 2024). This approach enables military personnel to train more effectively, preparing them for modern combat challenges (Inzpire, 2025). Similarly, the European Defense Fund (EDF) has significantly increased investments in military technologies, including AI software and smart weapons (European Commission, 2024). In 2024, the EDF committed €1.1 billion towards various military research projects, such as drones, radar systems and communication technologies, aiming to enhance real-time data analysis and decision-making capabilities (European Union, 2024).

Evolution of Autonomous Weaponry

The evolution of autonomous weaponry has transitioned military technology from manual to semi-autonomous and ultimately, fully autonomous systems. This progression has redefined the nature of conflict, raising both strategic possibilities and ethical dilemmas. Autonomous weapons, which rely on AI to identify, track and engage targets, have become a focal point of modern defence innovation (Lenkov, 2024).

Manual weapon systems, which require direct human operation, dominated the 20th century. The introduction of semi-autonomous systems in the late 20th century marked a significant shift (Schneider & Macdonald, 2023). These systems, such as guided missiles and drones, incorporated AI to assist with targeting and navigation while retaining human oversight (Schneider & Macdonald, 2023). For example, semi-autonomous drones have been used extensively in European peacekeeping and counter-terrorism missions, providing reconnaissance and precision strikes with reduced risk to personnel (Parliamentary Assembly, 2015).

Fully autonomous weapon systems represent the next phase in this evolution. Unlike their semi-autonomous predecessors, these systems can operate independently, making decisions without direct human input (Vation, 2024). One prominent example is the development of autonomous drones that are equipped with AI for target identification and engagement (European Union, 2023). European nations, including Germany and France, have explored these technologies cautiously, emphasising compliance with IHL and ethical constraints (European Union, 2023). Germany's defence research focuses on 'human-in-the-loop' systems that preserve human oversight, reflecting a commitment to accountability (Amoroso et al., 2018).

Navigating the Dual-Edged Sword

The technological advancements in AI and autonomous weaponry have reshaped military strategy and warfare, influencing how European nations approach defence. These innovations offer several strategic advantages, including improved efficiency, reduced operational risks and enhanced precision. However, they also introduce challenges related to accountability, ethical considerations and security dynamics.

One of the most significant impacts of AI in military strategy is its ability to process and analyse vast amounts of data in real-time. For European defence systems, which often operate in a coalition framework like NATO or the EU Common Security and Defence Policy, this capability is invaluable. AI-enabled systems can synthesise intelligence from multiple sources, providing actionable insights that can enhance decision-making (Binhammad et al., 2024). This has been particularly evident in European cybersecurity efforts, where AI tools detect and neutralise cyber threats more effectively than traditional methods (Binhammad et al., 2024).

Autonomous weaponry has also influenced operational tactics. The use of semi-autonomous drones in peacekeeping missions, such as those in Mali and the Sahel region, has demonstrated their value in reducing human casualties and increasing mission efficiency (World Bank, 2021). These drones provide surveillance and strike capabilities, allowing European forces to neutralise threats with minimal collateral damage (Andersson & Simon, 2024). However, the deployment of these systems also underscores ethical concerns, particularly regarding the potential for unintended harm and the challenges of ensuring compliance with IHL in complex conflict environments.

The strategic implications of fully autonomous systems are even more profound. European policymakers face the challenge of balancing the strategic advantages of such systems with the risks of escalation and misuse. For instance, the absence of human oversight in fully autonomous weapons could lead to unintended conflicts, especially in high-tension scenarios (Docherty, 2016). This has prompted calls for international regulation, with European nations often at the forefront of advocating for treaties to govern the use of autonomous weapons.

Europe's cautious approach to AI and autonomous weaponry reflects its unique geopolitical and ethical considerations (European Parliament, 2021). Most European nations

prioritise multilateralism and adherence to ethical norms in their defence policies. This is evident in initiatives like the EU's 'Guidelines for Military and Non-Military Use of Artificial Intelligence' which emphasises transparency, accountability, and human control (European Parliament, 2021). Such frameworks aim to ensure that technological advancements align with Europe's broader commitment to peace and stability.

Despite these efforts, challenges still remain. The rapid pace of AI development creates a risk of technological disparities, both within Europe and between Europe and other global powers. To address this, European nations must invest in collaborative research and development, leveraging initiatives like the EDF to ensure collective progress. Additionally, fostering public trust in AI-driven defence systems is necessary. This requires transparent communication about the strategic and ethical implications of these technologies, as well as robust mechanisms for oversight and accountability.

Concluding Statement

The integration of AI and autonomous weaponry marks a pivotal era in military evolution, offering unprecedented strategic advantages while presenting complex ethical and security challenges. European nations have embraced these advancements cautiously, leveraging their potential to enhance efficiency, precision, and decision-making within defence systems. However, this approach is tempered by a strong commitment to accountability, adherence to international laws and multilateral collaboration. To navigate this dual-edged sword effectively, Europe must sustain investments in innovation while advocating for a robust regulatory framework that ensures ethical use. Initiatives like the EDF and the EU's AI guidelines underscore the region's intent to lead responsibility in this transformative domain. By fostering transparency, cooperation and public trust, Europe can harness the benefits of AI-driven military advancements while mitigating risks, ensuring that technological progress aligns with its broader values of peace, stability and global security.

STRATEGIC CONSIDERATIONS FOR EUROPEAN DEFENCE

The integration of AI and AWS into European defence strategies is a double-edged sword. While offering significant operational advantages, these technologies also pose risks and ethical dilemmas that require careful navigation. European policymakers must strike a delicate balance between harnessing the benefits of AI for defence and addressing the associated challenges, including technological vulnerabilities, ethical constraints and geopolitical pressures.

Advantages of AI in European Defence

AI and AWS promise numerous operational efficiencies that can enhance European defence capabilities in a rapidly evolving security landscape. AI-powered systems excel in processing vast amounts of data in real-time, enabling faster and more precise decision-making. For example, AI algorithms can

analyse satellite imagery, detect anomalies, and predict potential threats with unmatched accuracy (Takyar, 2023). In a European context, where military operations often occur under multilateral frameworks like NATO or the EU Common Security and Defence Policy, the ability to synthesise intelligence from multiple sources is invaluable. Autonomous systems also bring adaptability to dynamic combat scenarios. AI can recalibrate strategies mid-operation, responding to changing conditions on the ground without waiting for human input. For instance, autonomous drones deployed in surveillance missions can independently alter their flight paths based on real-time threat detection, increasing mission success rates (Dubey, 2025).

Although the initial development and acquisition of AI and AWS technologies are costly, their long-term deployment offers significant cost savings (Reilly, 2024). Automated systems reduce the need for large-scale troop deployments, lowering personnel costs and minimising casualties (Shaughnessey, 2024). Additionally, autonomous systems can operate in environments deemed too dangerous for humans, such as nuclear-contaminated zones or high-risk conflict areas (Fisher et al., 2022). For European nations, where defence budgets vary significantly, cost-effectiveness is critical. AI-driven tools can enhance the efficiency of existing resources, enabling smaller nations to contribute meaningfully to collective security initiatives. This is particularly relevant in the context of the EDF, which promotes collaborative projects to maximise the strategic value of pooled resources.

Despite these advantages, the integration of AI and AWS into European defence is fraught with challenges that could undermine their strategic value. The increasing reliance on AI introduces vulnerabilities that adversaries could exploit. Cyberattacks targeting AI systems could compromise their functionality, rendering them ineffective or even weaponising them against their operators (Comiter, 2019). A hacked autonomous drone could be redirected to attack friendly forces, leading to catastrophic consequences. Malfunctioning systems present another risk. Unlike human decision-makers, AI systems lack the ability to interpret nuanced situations or adapt to unexpected ethical dilemmas (McKendrick & Thurai, 2022). In high-stakes scenarios, this rigidity could lead to unintended escalations or violations of IHL.

The deployment of autonomous weapons raises the risk of unintended escalation. In the absence of human oversight, AI systems may misinterpret signals or take disproportionate actions, triggering conflicts that could otherwise be avoided (McKendrick & Thurai, 2022). For European nations, which operate in a complex geopolitical environment with diverse stakeholders, this risk is particularly acute. Moreover, the ethical implications of delegating life-and-death decisions to machines cannot be overstated. European nations, which have historically championed human rights and IHL, face a moral dilemma in deploying systems that could potentially violate these principles. Public resistance to AWS deployment could also undermine political will, complicating the adoption of these technologies.

Cooperation and Competition

The strategic integration of AI into European defence is shaped by both cooperative frameworks and competitive dynamics. Collaboration is central to Europe's approach to AI in defence. Initiatives like the EDF and the Permanent Structured Cooperation (PESCO) encourage joint research and development projects, ensuring that member states pool their expertise and resources. For instance, the EU has funded programmes focused on AI-enabled reconnaissance and cybersecurity, demonstrating a commitment to advancing collective capabilities (European Commission, 2021). NATO also plays a critical role in fostering AI cooperation among European allies (NATO, 2024). Through initiatives like the NATO Innovation Fund, member states are investing in cutting-edge technologies to maintain a strategic edge (NATO, 2024). However, differing national priorities and levels of technological advancement among European nations pose challenges to achieving cohesive AI integration.

Europe's AI efforts unfold within the context of intense competition with global powers such as the United States, Russia and China. The United States remains the global leader in AI innovation, with significant investments in military AI projects like Project Maven (Mohsin, 2024). While NATO facilitates transatlantic cooperation, Europe's relative dependence on US technology highlights the need for greater investment in local capabilities. China's rapid advancements in AI-driven military technology poses another challenge. Unlike Europe, China operates with fewer ethical constraints, allowing for faster development and deployment of controversial systems (Arcesati, 2021). Similarly, Russia's focus on autonomous systems for asymmet-

ric warfare highlights the strategic imperative for Europe to keep pace (Nadibaidze, 2022). This competitive environment complicates Europe's position. On one hand, European nations must invest in AI to remain relevant on the global stage. On the other hand, they must ensure that these investments align with their ethical commitments and do not exacerbate global tensions.

Security and Stability

The impact of AI and AWS on global security architecture and regional stability presents both opportunities and risks for Europe. Autonomous systems have the potential to strengthen global security by deterring aggression and enhancing conflict prevention. AI-driven surveillance systems can provide early warnings of hostile actions, enabling pre-emptive diplomatic or military responses (Kolade, 2024). However, the proliferation of autonomous weapons also risks destabilising global security (O'Neill et al., 2024). In the absence of international regulation, an AI arms race could emerge, with nations prioritising technological superiority over collective stability. Europe's leadership in advocating for international norms and treaties is therefore critical to prevent such outcomes. Initiatives like the EU's 'Ethics Guidelines for Trustworthy AI' set important precedents for global discourse. (O'Neill et al., 2024)

Within Europe, the deployment of AI and AWS has the potential to both enhance and undermine regional stability. On one hand, collaborative AI projects can strengthen collective security, ensuring that European nations are well-equipped to respond to external threats. On the other hand, disparities in technological capabilities among member states could create tensions, undermining the cohesion of European defence efforts. The risk of an AI-driven arms race within Europe cannot be ignored. As individual nations pursue their defence strategies, the lack of a unified European framework could lead to fragmented developments, reducing overall strategic coherence (European Commission, 2022). To mitigate this risk, Europe must prioritise the harmonisation of AI defence policies, ensuring that advancements serve collective rather than individual interests.

Overall, this section highlights that the integration of AI and AWS into European defence strategies represents a pivotal moment in modern security policy. These technologies offer transformative benefits, including enhanced operational efficiency, cost savings, and the ability to operate in dangerous environments. However, their deployment also raises profound challenges, cybersecurity vulnerabilities, ethical dilemmas, risks of unintended escalation and the potential destabilisation of regional and global security frameworks. To effectively harness AI in defence, European policymakers must navigate a complex landscape of cooperation, competition and ethical responsibility. Within Europe, fostering unity through collaborative initiatives like the EDF and PESCO is essential to ensuring that technological advancement strengthens collective security rather than exacerbates disparities among the member states. At the same time, aligning with global allies, particularly NATO, while reducing dependency on external technologies is critical to maintaining strategic autonomy in an increasingly competitive geopolitical environment. Global

competition with powers like the US, China, and Russia further complicates Europe's position. While Europe must invest in AI to remain relevant, it must do so in a way which reflects its commitment to ethical principles, international law and human rights. The road ahead demands a unified and forward-thinking approach. Europe must invest in robust cybersecurity measures, ensure human oversight in critical decisions and harmonise AI policies across member states. Equally important is the role in shaping global discourse on AI regulation, advocating for treaties that prioritise collective security over unilateral advancements.

ETHICAL CONSIDERATIONS

The integration of AI and AWS into European defence strategies presents profound ethical dilemmas. Balancing the strategic benefits of these technologies with their moral, legal and societal implications is a pressing challenge. This section critically examines the ethical considerations of AI in warfare, focusing on moral and legal frameworks, accountability, human rights, and public opinion within the European context.

IHL, also known as the law of armed conflict, serves as the primary legal framework for regulating warfare (British Red Cross, 2024). Its core principles—distinction, proportionality, and necessity—are designed to minimise harm to civilians and ensure that military actions remain justifiable. However, applying these principles to AI-driven weapon systems raises significant challenges. AWS must differentiate between combatants and non-combatants. While AI can be trained to recognise certain patterns, it lacks the nuanced understanding required for complex battlefield scenarios. For example, an autonomous drone tasked with targeting armed individuals might struggle to distinguish between civilians carrying weapons for self-defence and combatants actively engaging in hostilities (McKendrick & Thurai, 2022). This raises the risk of unlawful civilian casualties, violating IHL. The principle of proportionality requires that the harm caused by military action does not exceed the anticipated military advantage (International Committee of the Red Cross, 2024). AWS operating without human empathy or judgment may struggle to evaluate proportionality in real-time. This creates a potential for indiscriminate harm, especially in densely populated areas where collateral damage is difficult to assess (International Committee of the Red Cross, 2024). Decisions about the necessity of using force often involve moral and political considerations that go beyond algorithmic calculations. AI, programmed to maximise efficiency, may prioritise tactical outcomes over broader humanitarian goals undermining the spirit of IHL.

European nations, which have historically championed IHL, face the challenge of ensuring that AI weapons comply with these principles. This necessitates robust regulatory frameworks and technological safeguards, such as embedding IHL compliance into the design and deployment of AI systems. Traditional ethical theories provide valuable insights into the morality of warfare but

encounter limitations when applied to autonomous systems (Philosophical Bioethics, 2022). The consequentialism theory evaluates actions based on their outcomes. AWS proponents argue that AI can minimise harm by reducing human error and increasing precision (Philosophical Bioethics, 2022). However, consequentialism struggles to address situations where AI systems inadvertently cause harm due to flawed programming or unforeseen circumstances (Philosophical Bioethics, 2022). In such cases, assigning moral responsibility becomes problematic. Virtue ethics focuses on the character and intentions of moral agents (Philosophical Bioethics, 2022). It also emphasises qualities such as prudence, courage and empathy. These traits, inherently human, are absent in AI systems. Delegating life-and-death decisions to entities incapable of moral reasoning conflicts with the European ethical tradition which prioritises human dignity and accountability. While deontological ethics is rooted in duty and rules, this theory aligns with Europe's commitment to IHL. However, the rigid programming of AWS may lead to blind adherence to rules without consideration of contextual nuances, potentially resulting in unethical outcomes.

Decision-Making and Accountability

One of the most contentious issues surrounding autonomous weapons systems is the 'accountability vacuum' (Pain, 2020). An accountability vacuum refers to a situation where there is a lack of clear responsibility or oversight within an organisation or system, leading to inefficiencies, misconduct or a breakdown in trust (Pain, 2020). When an autonomous system makes a decision that results in harm, determining responsibility becomes highly complex. Potential actors include the programmer who developed the algorithm, the manufacturer who produced the system, the operator who deployed it and the state which authorised its use. This diffusion of responsibility undermines accountability, a cornerstone of both European legal systems and IHL. For example, if an AWS mistakenly targets civilians, who should be held responsible? The absence of clear answers jeopardises trust in these technologies and complicates legal recourse for victims.

To address accountability concerns, the concept of 'meaningful human control' has gained traction (Trabucco, 2023). This principle advocates for retaining human oversight over critical decisions, ensuring that humans, not machines, remain the ultimate arbiters of life-and-death scenarios (Trabucco, 2023). In Europe, the debate over meaningful human control is a central focus of policy discussions on AI in defence (United Nations, 2024). Germany in particular has emphasised the importance of human oversight, advocating for strict regulations that prohibit fully autonomous lethal systems (United Nations, 2024, p.51).

Human Rights

The deployment of AWS raises significant concern about potential human rights violations, particularly in areas such as targeting civilians and data misuse. If improperly programmed or deployed, AWS may inadvertently target non-combatants, violating the right to life and other fundamental rights. Moreover, AI systems rely on vast amounts of data for training and operation, rising privacy

concerns, particularly in surveillance operations. Unauthorised or unethical use of such data could infringe on individuals' right to privacy and freedom of movement.

AI-driven surveillance tools, increasingly used in European defence strategies, present additional ethical dilemmas. While these tools can enhance security, they risk encroaching on civil liberties if not properly regulated. Mass surveillance enabled by AI could infringe on privacy rights, particularly in democratic societies that prioritise transparency and accountability. The potential misuse of surveillance data for purposes beyond defence, such as political repression, contradicts core European values of human dignity and freedom. To mitigate these risks, Europe must establish clear guidelines for the use of AI in surveillance, ensuring that its applications are lawful, necessary and proportionate.

Public Opinion and Political Will

Public opinion plays a critical role in shaping defence policies. Surveys and studies reveal that European citizens are often sceptical of autonomous weapons systems, citing ethical concerns and fears of losing control. A poll conducted by Human Rights Watch Survey in 2019 revealed that 73% of respondents favoured their country working towards an international ban on lethal AWS, reflecting significant ethical apprehensions (Human Rights Watch, 2019). Similarly, a survey indicated that 71% of Germans opposed delegating weapons control in warfare to AI, underscoring fears that are related to the loss of human oversight (Sauer, 2019). The European Parliament passed a resolution calling for an international ban on lethal AWS, highlighting ethical and legal concerns while emphasising the necessity of human control in decisions involving lethal force (Conn, 2018). Public concerns also extend to AI surveillance, with citizens expressing apprehension about privacy violations and the potential for misuse (ÜNVER, 2024). These attitudes influence political decision-making, as governments must balance technological innovation with public trust. Policies perceived as prioritising military efficiency over ethical considerations risk eroding public confidence in both national and European institutions.

Public opinion shapes not only policy but also funding decisions. European governments, aware of their citizen's ethical concerns, often allocate resources to research that prioritises accountability and transparency. The EDF supports projects that incorporate ethical considerations into AI design, reflecting public demand for responsible innovation (Turek, 2024). National governments have also established ethical advisory boards to oversee AI developments in defence, ensuring alignment with societal values. Building public trust requires transparent communication about the capabilities and limitations of AWS, as well as robust oversight mechanisms to prevent misuse. Engaging citizens in the policymaking process can further enhance legitimacy and acceptance.

Overall, this section demonstrates that the integration of AI and AWS into European defence strategies presents complex ethical, legal and societal challenges. IHL provides a foundational framework, but its principles of distinction, proportionality and necessity encounter significant limitations when ap-

plied to AI-driven technologies. The absence of human empathy and nuanced moral reasoning in autonomous systems raises critical concerns about compliance with ethical standards and European values. Addressing the 'accountability vacuum' is essential to ensuring trust and legal clarity. The concept of 'meaningful human control' emerges as a cornerstone in policy debates, reflecting the importance of maintaining human oversight in critical decisions. Balancing innovation with human rights protections, particularly regarding civilian targeting and data privacy, requires robust safeguards to prevent potential abuses. Public scepticism toward autonomous weapons underscores the need for transparent communication, ethical oversight, and citizen engagement in defence policymaking. Ultimately, the path forward for Europe lies in harmonising technological advancement with its deep-seated commitment to human dignity, legal accountability, and democratic values. By fostering responsible innovation and prioritising ethical principles, European nations can navigate the complex intersection of AI and warfare while upholding the moral imperatives that define their collective identity.

CASE STUDIES: EUROPEAN AND NON-EUROPEAN APPROACHES TO AI AND AUTONOMOUS WEAPONS

The development and deployment of AI and AWS in defence strategies vary significantly across nations. European countries adopt distinct approaches based on their historical, ethical and strategic priorities. Comparing these approaches with those of non-European powers provides valuable insights into the global landscape of AWS and potential lessons for European defence policy.

European nations demonstrate diverse perspectives on AI and AWS, reflecting their differing geopolitical positions, defence priorities and ethical considerations. France adopts a pragmatic yet ethically informed approach to AI in defence (United Nations, 2024, p.47). As one of Europe's leading military powers, France recognises the strategic importance of AWS while emphasising the need for human oversight (United Nations, 2024, p.47). France views AWS as essential for maintaining technological superiority and strategic autonomy, especially within NATO and the EU (United Nations, 2024, p.47). French policymakers advocate for 'meaningful human control' over autonomous systems, aligning with IHL. France is also a key proponent of the EU's guidelines on trustworthy AI, which emphasise transparency, accountability and safety (European Commission, 2019). Balancing strategic ambitions with ethical constraints can slow development timelines, potentially leaving France at a disadvantage compared to less restrictive competitors like China and Russia.

Germany takes a cautious approach to AWS, driven by its historical commitment to peace and ethical governance (United Nations, 2024, p.51). Germany strongly opposes the deployment of fully autonomous lethal systems, emphasising the moral implications of delegating life and death decisions to machines (United Nations, 2024, p.51). This

stance aligns with Germany's broader emphasis on human rights and adherence to IHL. Germany has called for international regulations to govern the use of AWS, advocating for a ban on systems that lack human oversight (United Nations, 2024, p.52). This position is reflected in its leadership role within the UN's Group of Governmental Experts on Lethal Autonomous Weapons Systems. Germany's cautious stance may limit its ability to contribute to joint European defence initiatives, particularly if other nations prioritise rapid technological advancement over ethical concerns.

The United Kingdom adopts a more assertive stance on AWS, prioritising innovation and strategic investments to maintain its global military relevance (United Nations, 2024, p.111). The UK's 'Defence AI Strategy' highlights the importance of AI in enhancing military capabilities, from autonomous drones to AI-driven decision support systems (UK Parliament, 2025). The UK also collaborates closely with the US, leveraging transatlantic partnerships to advance its autonomous weapons systems capabilities (U.S. Department of Commerce, 2024). While the UK supports the principles of IHL, it takes a more flexible approach to meaningful human control, focusing on integrating semi-autonomous systems into its arsenal (United Nations, 2024, p.111). The UK's focus on innovation risks alienating European partners with more cautious approaches, potentially complicating joining defence initiatives.

Comparisons with Non-European Approaches

The strategies of non-European powers highlight different priorities and methodologies, providing valuable contrasts to European approaches. The US leads global efforts in AWS development, prioritising technological innovation and strategic dominance. The Department of Defence has updated its directive on autonomy in weapon systems, underscoring the importance of integrating advanced technologies into military operations (Garamone, 2023). Programmes like 'Project Maven,' which was implemented in 2017, aim to deploy computer algorithms to extract objects from massive amounts of moving or still imagery, thus enhancing the ability of weapon systems to detect objects (Pellerin, 2017). Moreover, the Joint Artificial Intelligence Center was created to deliver AI solutions for specific problems faced by the services, including surveillance, reconnaissance and targeting systems (Tucker, 2018). The US military emphasises the rapid deployment of semi-autonomous and autonomous systems to maintain its technological edge (Department of Defence, 2022). This strategy involves integrating advanced technologies into various aspects of defence operations, including surveillance, reconnaissance and combat (Department of Defence, 2022). While the US acknowledges the importance of ethical considerations, it prioritises operational effectiveness (United Nations, 2024, p.114). This approach often contrasts with Europe's more cautious stance, as seen in debates within NATO. The US's focus on rapid innovation underscores the importance of investment in research and development, a lesson for Europe to remain competitive.

Concurrently, China views AI as a tool to counterbalance the technological superiority

of Western powers, focusing on asymmetric warfare strategies. China's military prioritises the development of swarming drones, autonomous submarines, and other AWS designed to exploit vulnerabilities in adversaries' defence (Wong & Choi, 2024). These systems align with China's broader strategy of leveraging technology to offset traditional military disadvantages (Wong & Choi, 2024). China's AWS development operates with fewer ethical constraints, enabling faster progress but raising concerns about compliance with international norms. An example of this is China's use of AI-driven surveillance in Xinjiang which highlights the potential for human rights abuses (Human Rights Watch, 2019). China's approach underscores the risk of falling behind in AWS development, emphasising the need for Europe to balance ethical leadership with strategic competitiveness.

Russia focuses on integrating AWS into its broader strategy of hybrid warfare, emphasising deterrence and psychological impact (Bilal, 2024). Russia has invested heavily in autonomous systems such as the Uran-9 combat robot and AI-powered tools to deter adversaries, particularly in Eastern Europe (Bendett et al., 2021). Russia's approach often disregards international norms, raising concerns about the potential for misuse of AWS in destabilising actions, such as disinformation campaigns and cyberattacks. Russia's focus on deterrence underscores the importance of maintaining robust defences, particularly for nations bordering Russian territory.

The strategies for non-European powers offer valuable insights that can inform European approaches to AI and AWS. The US's emphasis on innovation demonstrates the importance of sustained investment in research and development. Europe must enhance funding for AI projects, particularly through collaborative initiatives like the EDF. While China's rapid progress highlights the dangers of overregulation, Europe must find a balance between maintaining ethical leadership and avoiding technological stagnation. Russia's use of AWS in hybrid warfare underscores the need for Europe to develop capabilities that address both conventional and non-conventional threats. The divergent approaches within Europe risk undermining collective defence efforts. Greater coordination among EU and NATO members is essential to ensure that Europe remains a cohesive and competitive force in AWS development. Europe's emphasis on an ethical framework positions it as the global leader in responsible AI development. This leadership can be leveraged to advocate for international norms and treaties, ensuring that AWS are deployed in ways that uphold human rights and global stability.

The diverse approaches to AI and AWS among European nations reflect an array of historical, ethical and strategic priorities. France, Germany and the United Kingdom embody varying perspectives that highlight the tension between ethical considerations and the imperative for technological and strategic competitiveness. France's balanced yet strategically ambitious stance, Germany's ethically driven caution, and the UK's assertive focus on innovation underscore the complexity of achieving a unified European policy on autonomous weapons systems. Comparisons with non-European powers like the US, China and Russia illuminate the global dynamics shaping AWS

development. The US's focus on rapid innovation, China's pursuit of technological asymmetry, and Russia's integration of AWS into hybrid warfare strategies offer critical lessons for Europe. These examples stress the need for robust investment, strategic agility and ethical vigilance to maintain relevance in the global defence landscape.

To remain competitive while adhering to its values, Europe must harmonise its internal approaches to AWS development. Collaborative initiatives such as the EDF and stronger coordination within NATO are essential to bridge policy differences and enhance collective defence capabilities. Europe's leadership in ethical AI provides a unique opportunity to influence global norms and treaties, ensuring that AWS advancements align with IHL principles and contribute to global stability. In navigating the challenges of AWS development, Europe must strike a careful balance: preserving its ethical leadership while avoiding technological stagnation, fostering innovation while maintaining human oversight, and pursuing strategic competitiveness while championing global cooperation. These efforts will position Europe not only as a leader in responsible AI development but also as a formidable player in the evolving global defence landscape.

CONCLUSION

The integration of AI and AWS into defence strategies has sparked profound debates about their strategic utility and ethical implications. For Europe, the challenge lies in navigating this technological transformation in a way that upholds its commitments to human rights, international stability, and ethical governance. This conclusion synthesises the key findings of the study, emphasises the need for a balanced approach, offers actionable recommendations, and reflects on the future role of AI in global and European security.

AI and AWS offer substantial strategic advantages, including enhanced operational efficiency, precision and adaptability. These technologies can transform military decision-making, logistics and battlefield dynamics. However, they also introduce significant risks, such as over-reliance on technology, cyber vulnerabilities, and the potential for unintended escalation in conflicts. Europe faces unique challenges in integrating AWS into its defence strategies while adhering to IHL and ethical norms. Issues such as accountability, human oversight, and compliance with human rights demand careful attention. In addition, public opinion across Europe reflects deep concerns about the moral implications of delegating life-and-death decisions to machines, underscoring the importance of societal engagement in shaping defence policies. While international organisations like the UN and NATO have initiated discussions on AWS, significant gaps remain in binding regulations. Europe's fragmented defence landscape complicates efforts to develop a unified approach, but the EU has made strides in promoting ethical AI through initiatives like the EDF. A balanced approach is essential to harnessing AI's strategic benefits while adhering to Europe's ethical prin-

ciples and international commitments. This balance requires strategic investments, ethical leadership and regulatory cohesion. Strategic investments ensure that Europe remains competitive in AI and AWS innovation through sustained funding and collaboration. Ethical leadership maintains Europe's global reputation as a leader in responsible AI governance by promoting transparency, accountability, and human oversight. Regulatory cohesion addresses fragmentation among EU member states creating a unified and enforceable policy framework for AI in defence.

The role of AI in global and European security will only grow in significance as technological capabilities evolve and geopolitical tensions persist. Several reflections emerge from this analysis; while AI has the potential to enhance Europe's strategic autonomy and defence capabilities, its misuse could destabilise global security and undermine international norms. The development of AWS must, therefore, be guided by principles of restraint and responsibility. Europe's emphasis on ethical AI provides an opportunity to shape global standards. By demonstrating that technological innovation can coexist with human rights and international stability, Europe can serve as a model for other regions. Of course, addressing the challenges of AI and AWS requires collective action. This is why Europe must prioritise multilateral initiatives to bridge regulatory gaps, prevent arms races, and promote shared accountability. The fast-paced nature of AI development necessitates adaptive and forward-thinking policies. Europe must remain vigilant, continuously revisiting and refining its regulatory frameworks to address new risks and opportunities.

Finally, AI and AWS represent a transformative force in modern defence, offering unparalleled opportunities as well as challenges. Europe's path forward demands a delicate balance between strategic innovation and ethical governance. By strengthening collaboration, developing cohesive regulatory frameworks, addressing public concerns, and leading global advocacy, Europe can position itself as a leader in responsible AI defence. At the same time, it must remain proactive in anticipating future challenges, ensuring that its policies evolve in tandem with technological advancements. The future of AI in European and global security hinges on the ability to align technological progress with humanity's core values. In navigating this complex landscape, Europe cannot only enhance its strategic autonomy but also set the standard for a world where AI serves as a tool for peace, stability, and ethical progress.

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