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European Drone Defence Initiative: How Ukraine's Drone Ecosystem Can Accelerate the EU's Defence Readiness Roadmap 2030

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Abstract

Drone incursions in the European airspace in September 2025 have highlighted the increasing European vulnerability to countering hybrid threats and the need to reinforce its defence. To address this gap, the European Commission has presented the "Defence Readiness Roadmap 2030", which includes the European Drone Defence Initiative (EDDI). This study explores whether and how Ukraine's battlefield-tested drone ecosystem can contribute to the EU's European Drone Defence Initiative milestones under the Defence Readiness Roadmap 2030. While the EU's defence industrial base suffers from fragmentation and high costs, Ukraine has managed to transform its military needs into a new dynamic system, rapidly developing low-cost, autonomous, and AI-based technologies. This paper uses the lens of ideational agenda-setting leadership theory to analyze how the President of the European Commission, Ursula von der Leyen, strategically framed the threat posed by Russian drones and promoted Ukraine's inclusion as a key ally in the development of the EDDI. Accordingly, the theory explains how, through authoritatively diagnosing the situation, developing a course of action, and mobilizing consensus, leadership can overcome political and institutional obstacles. Ukraine's industrial base has produced important technologies, including, but not limited, to AI-guided swarm systems, acoustic and radar sensor fusion, and low-cost interceptor drones, offering cheaper alternatives to NATO technologies. Thus, implementing the EDDI requires not only EU rearmament, but also adaptability, innovation, and deep cooperation with Ukraine.

Keywords: Drones, Ukraine, Russia, European Union, ideational-agenda setting theory

1. Introduction

"Something new and dangerous is happening in our skies. In just the past two weeks, MiG fighters have violated Estonia's airspace, and drones have flown over critical sites in Belgium, Poland, Romania, Denmark and Germany. Flights have been grounded, jets scrambled, and countermeasures deployed to ensure the safety of our citizens. Make no mistake. This is part of a worrying

pattern of growing threats."[1] With these words, European Commission President Ursula von der Leyen referred to the European Parliament regarding the violation of the EU's airspace witnessed in September 2025, which appears to be related to Russian intervention.[2]

From September 10th, 2025, multiple EU and NATO member states reported the incursion of drones launched from Russia. The first incident occurred in Poland, where around twenty Gerbera surveillance drones were spotted and shut down. A few days later, Romania and Estonia also reported worrying sightings of drones. Similar incidents have since been reported in Sweden, Finland, Latvia, Denmark, Norway, and Belgium.

This recurring pattern has been referred to as "Kremlin hybrid war" by Denmark's Prime Minister, Mette Frederiksen, highlighting EU and NATO vulnerabilities in countering uncrewed aerial vehicles (UAVs, from now on), which are becoming increasingly frequent in European airspace.[3]

In order to respond to these threats, the European Commission, together with the High Representative of the Union for Foreign Affairs and Security Policy, Kaja Kallas, presented on the 16th of October 2025 the "Defence Readiness Roadmap 2030". The document aims to respond to the Council's call for clear objectives and accelerated investment to ensure that all EU Member States are prepared for high-intensity crises by 2030.

The Roadmap outlines four "flagship projects", rebranded from prior initiatives: the Eastern Flank Watch, the European Air Shield, the European Space Shield and the European Drone Defence Initiative (EDDI). The latter seeks to build "a multilayered, technologically advanced system with interoperable counter-drone capabilities for detection, tracking, and neutralisation, as well as capabilities to hit ground targets by leveraging drone technology for precision strikes".[4] According to the Roadmap, the project will be initiated in Q1 2026, reaching initial operating capacity by the end of 2026, and being fully operational by the end of 2027.

This paper intends to investigate European land and air security by addressing the following research question: Can Ukraine's battlefield-tested drone ecosystem contribute to the EU's European Drone Defence Initiative milestones under the Defence Readiness Roadmap 2030? And if yes, how?

In order to answer this question, the paper will first analyse the limits of the EU's ability to counter UAVs. Secondly, through the lens of ideational agenda-setting

[1] Ursula von der Leyen, "Speech by President von der Leyen at the European Parliament plenary debate on a united response to recent Russian violations of the EU Member States' airspace and critical infrastructure", SPEECH/25/2316, October 8, 2025.

[2] Although those responsible for the attacks have not yet been officially identified, several European leaders and defence ministries believe that these attacks can be traced back to Russia. See: Danish Defence Intelligence Service, "Assessment of the hybrid threat to Denmark," October 3, 2025.

[3] Seb Starcevic, "Europe is at hybrid war, Danish prime minister announces," *Politico*, September 26, 2025.

[4] European Commission, "JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL AND THE COUNCIL: Preserving Peace - Defence Readiness Roadmap 2030", JOIN(2025) 27 final, October 16, 2025.

leadership theory, it will assess the role of President von der Leyen in promoting Ukraine's centrality in the EDDI. Thirdly, it will outline Ukraine's main technological innovations and how these could be integrated at the EU level. Finally, it will propose policy recommendations to strengthen Ukraine's role in the EDDI initiative.

2. Background Analysis: The EU's defence readiness ambition and its structural deficits

Russia's ongoing war of aggression against Ukraine has prompted the European Union to accelerate its efforts to achieve "strategic autonomy" in the defence sector and strengthen its contribution within NATO.[5] This growing threat has fostered the development of a political consensus that has enabled the adoption of initiatives which would have been unfeasible just a few years ago. One example of these initiatives is the European Defence Industry Reinforcement through the Common Procurement Act (EDIRPA), aimed at leveraging the EU budget to cover the costs of joint procurement of weapons.[6] Yet, despite this unprecedented momentum, new Russian threats on the European continent have highlighted the limits of the EU and NATO in countering hybrid threats.

The deployment of drones has characterised Russia's aggression against Ukraine, and Ukrainian officials have stated that these technologies are primarily responsible for deaths on the front line, both for Russia and Ukraine.[7] The Kremlin's use of drone swarms to overwhelm enemy defences exposes Europe's limited capacity to detect, intercept, and neutralise such attacks.

These deficiencies stem from deeper structural weaknesses within the European defence industrial base. The defence industry in the EU remains fragmented and dominated by national interests, with each member state prioritising its own procurement preferences and technological champions. For instance, Germany supports its home-grown IRIS-T and Patriot, while France and Italy support SAMP/T, showing the challenges of achieving interoperability and cross-border coordination.[8]

At the industrial level, the EU drone production cycle is characterised by costly and slow research and development, as demonstrated by the Eurodrone project.[9] This Medium Altitude Long Endurance Remotely Piloted Aircraft System (MALE RPAS) began its development cycle in 2015 but is expected to be operational by mid-2027, highlighting the slow pace of the EU defence industry compared to the flexible wartime innovations adopted by

[5] For a deeper understanding of "strategic autonomy", see: Charlotte Beaucillon, "Strategic Autonomy: A New Identity for the EU as a Global Actor," European papers, July 27, 2023.

[6] For more information about EDIRPA, consult the website: "EDIRPA | Procuring together defence capabilities," European Commission, lastly accessed on October 6, 2025.

[7] European Parliament Directorate-General for Parliamentary Research Service, "Military drone systems in the EU and global context: Types, capabilities and regulatory frameworks
"Military drone systems in the EU and global context: Types, capabilities and regulatory frameworks," June 4, 2025.

[8] Chris Kremidas-Courtney, "A Sky Shield for Europe," *European Policy Centre*, October 8, 2025.

[9] "EUROPEAN MEDIUM ALTITUDE LONG ENDURANCE REMOTELY PILOTED AIRCRAFT SYSTEMS – MALE RPAS (EURODRONE)", *PESCO Secretariat,* accessed on November 7, 2025.

Russia.[10] Moreover, drone production relies deeply on China, in terms of materials, software and hardware.[11] Although estimates indicated that more than 40% of drone companies had their headquarters in Europe in 2022, the Chinese company DJI controlled between 70% and 80% of the global commercial drone market.[12]

These industrial limitations are further aggravated by diverging national threat perceptions, which jeopardise the speed of decision-making. Frontline states, such as Poland, Estonia, Lithuania, and Latvia, are deeply concerned and advocate for swift action. At the same time, countries like Italy, Greece, and Germany are worried about the costs of this defence innovation.[13]

Europe's lengthy development cycles and risk-averse procurement culture continue to restrict responsiveness, despite the European Defence Fund's advancements in promoting R&D cooperation. The EU's ability to incorporate technical innovation, operational adaptability, and industrial coordination into a cohesive and robust defence architecture will be more important to its long-term security than simply increasing funds.

3. Discussion of Findings: The Evolution of the European Defence Drone Initiative and Ukraine Role

3.1 Framing the Drone Challenge: Von der Leyen's Ideational Agenda-Setting Power

The agenda-setting leadership theory provides a valuable lens for analysis to understand President von der Leyen's strategic framing of Ukraine as a European ally in UAV production and defence. As noted by Baracani in her 2023 paper for West European Politics, ideational agenda-setting leadership calls for three consequent tasks: 1) diagnosing the situation authoritatively; 2) devising a course of action designed to resolve or alleviate the problem; and 3) mobilising the political community's support for the prescribed policy response.[14] The success of this process is deeply reliant on the actor's ability to mobilise institutional, ideational and personal resources, to strategically frame the issue and rally consensus for her policy proposal.

As President of the European Commission, Ursula von der Leyen has considerable resources. A firm proponent of European integration, she regards the Commission as a pivotal geopolitical actor. Although the European Commission has no right of legislative initiative in the Common Foreign and Security Policy (CFSP) and

[10] It is the first remotely piloted aircraft system (RPAS) designed specifically for safe and reliable flights in non-segregated airspace, giving Europe its own sovereign capability in this field.
Funded by the European Defence Fund, it was developed by Germany (Airbus Defence and Space), France (Dassault Aviation), Italy (Leonardo) and Spain (Airbus Defence and Space), under the leadership of the Organisation for Joint Armament Cooperation (OCCAR). For more information on how it works, see: "Eurodrone", Leonardo, last access on October 8, 2025.

[11] Jan Joel Andersson, Sascha Simon, "Minding the drone gap: Drone warfare and the EU," *European Union Institute for Security Studies,* October 11, 2024.

[12] Jan Joel Andersson, Sascha Simon, "Minding the drone gap: Drone warfare and the EU."

[13] Sebastian Clapp, "Eastern Flank Watch and European Drone Wall," *European Parliamentary Research Service*, October 21, 2025.

[14] Elena Baracani, "Ideational agenda-setting leadership: President von der Leyen and the EU response to the invasion of Ukraine.", *West European Politics*, no. *46*(7) (2023): 1451–1474.

Common Security and Defence Policy (CSDP), von der Leyen's leadership successfully managed to connect CFSP issues with the external dimensions of internal policies, where the Commission is vested with powers by the Treaties. Moreover, the widely recognized presidentialization of the European Commission allows von der Leyen to cautiously steer the institution's priorities with a smaller group of advisors, instead of relying on the collegiality of the institution.[15]

In terms of ideational resources, which comprehend technical expertise and policy capacity, these allow von der Leyen to understand issues and orient their thinking toward preferred solutions.[16] Furthermore, her personal resources, such as political experience and leadership, have a significant impact on the external recognition of the President's policy expertise. This assertion is further substantiated by the observation that prior crises, such as the 2022 Russian aggression in Ukraine and the COVID-19 pandemic, have significantly increased the external acknowledgment of Presidential powers.

3.1.1 From Idea to Institutionalisation: The Genesis of the European Drone Defence Initiative

Von der Leyen as an agenda-setting leader is evident in three dimensions within the example of EDDI; firstly, by (1) diagnosing Russian drone intrusions as a systemic EU security threat, (2) promoting the drone wall and subsequently EDDI as a policy solution, and (3) enlisting buy-in by initiatives of the Commission, EU funding instruments and closer relations to the Ukrainian digital ministry.

The EDDI project was born at the junction of institutional adaptability, political entrepreneurship, and strategic necessity. Since the start of the Russian full-scale invasion of Ukraine, Ursula von der Leyen has long advocated for Ukraine's fast-track accession to the EU and deeper integration in the European Research and Development sectors. Already in February 2025, during her Statement at the International Summit on the Support of Ukraine in Kyiv, and prior to Russia's drone incursions in the member states, she emphasised how advanced sectors of Ukraine's economy, particularly artificial intelligence and drone technology, could "provide important impulses to Europe's competitiveness."[17] This strategy views Ukraine's integration into the EU not only as a means to protect the country but also as a step to strengthen the EU's goal of enhancing its competitiveness, as outlined in Mario Draghi's report on the future of European competitiveness.[18] Conscious that Kyiv's path to full membership will take time, von der Leyen found other ways to bring Ukraine closer to the EU.

[15] Kassim Hussein, Sara Connolly, "Managing the House: The Presidency, Agenda Control and Policy Activism in the European Commission," *Journal of European Public Policy*, no. 24(5) (2017), 653-74.

[16] Oran Young, "Political Leadership and Regime Formation: On the Development of Institutions in International Society," *International Organization*, no. 45(3) (1991), 281-308.

[17] Ursula von der Leyen, "Statement by President von der Leyen at the International Summit on the Support of Ukraine in Kyiv," SPEECH/25/602, February 24, 2025.

[18] For more information on the EU strategy for increasing its competitiveness, see: "Competitiveness Compass," *European Commission*, lastly accessed on November 10, 2025.

The following events revealed the urgency of her vision. The need for a coordinated European-wide defence was highlighted by Russian drone incursions into EU member states, which revealed Europe's susceptibility to hybrid aerial threats. Von der Leyen diagnosed the threat as a systemic European challenge, rather than isolated national incidents.[19] Starting as a series of Baltic and Polish suggestions to strengthen NATO's eastern airspace, multiple rounds of meetings between the European Commission, the European Defence Agency, and Ukraine's Ministry of Digital Transformation developed into a more comprehensive framework at the EU level. Translating regional initiatives into a European agenda for collective technology resilience was made possible in large part by von der Leyen's conversations with Ukrainian Minister Mykhailo Fedorov in April 2025.

Von der Leyen later presented the Eastern Flank Watch proposal and referred to a "drone wall" for the first time.[20] However, different priorities and threat perceptions posed major impediments to von der Leyen's plan. On the one hand, French President Emmanuel Macron and German Chancellor Friedrich Merz criticised the feasibility of securing a 3,000-kilometre border and questioned the very definition of a "wall" during the Meeting of the European Political Community in Copenhagen on October 2, 2025. On the other hand, Polish Prime Minister Donald Tusk acknowledged that a drone wall could not eliminate all threats but could provide a crucial deterrent layer. This clear-cut division was further strained by Southern member states, such as Italy and Greece, who argued that since EU-level funding would be adopted to implement the initiative, these defence investments should benefit the entire Union rather than concentrating on its Eastern flank.

These concerns prompted President von der Leyen to reframe the drone wall into a more cooperative and comprehensive European Drone Defence Initiative, calling for a shift from border control to collective security innovation. The ultimate policy presented in the Defence Readiness Roadmap 2030 aligns with her broader strategic vision of deeper European integration and autonomy. This evolution allowed the President to enhance consensus over her policy proposal and mobilise consensus over a shared idea on drones at the heart of the Union's new security and industrial paradigm.

3.2. Ukraine's Drone Ecosystem: From Wartime Innovation to Industrial Powerhouse

The transformation of Ukraine's drone industry demonstrates how wartime necessity can give rise to industrial capacity, providing inspiration to other countries.

In order to respond to the Russian aggression in 2014, the Ukrainian Armed Forces have relied heavily on drones, integrating these technologies in command, control,

[19] "This is not random harassment. It is a coherent and escalating campaign to unsettle our citizens, test our resolve, divide our Union, and weaken our support for Ukraine. And it is time to call it by its name. This is hybrid warfare, and we have to take it very seriously." Ursula von der Leyen, "Speech by President von der Leyen at the European Parliament plenary debate on a united response to recent Russian violations of the EU Member States' airspace and critical infrastructure."

[20] Ursula von der Leyen, "State of the Union Address," SPEECH/25/2053, September 10, 2025.

communications, computers, cyber-defence, combat systems, intelligence, surveillance, and reconnaissance.[21] However, the trends in drone production underwent significant changes between 2014 and 2022. What began as a fragmented and volunteer-driven effort in 2014 has evolved into one of the world's fastest-growing defence innovation ecosystems.

Early examples developed right after the Russian illegal annexation of Crimea, such as PD-1 UAV or Skif UAV, exemplify Ukraine's initial limited pace. In fact, although these technologies were developed respectively in 2014 and 2016, they received official clearance in 2018 and 2021.[22]

Until 2022, the industry was still in its embryonic stage, with most producers being small, volunteer-driven teams that answered the call for immediate battlefield needs. By 2023, the landscape began to shift when these small teams started transforming into companies, managing to attract private investments. For instance, firms such as Buntar Aerospace and Himera were among the first to secure funding, representing a viable business environment. In 2024, hundreds of new companies entered the market and government contracts could no longer sustain the entire sector. Now, Ukraine has developed one of the world's most dynamic drone industries, comprising more than 500 manufacturers, assemblers, and component suppliers, producing around 4 million drones annually.[23] President Zelenskyy highlighted this transformation, projecting that the domestic drone industry could reach a potential value of $35 billion in 2026, with approximately 40% of the weapons deployed on the frontlines manufactured locally or with the participation of local companies.[24]

The speed of this transformation stems from a distinct innovation model: highly decentralised, user-driven, and focused on field-level problem solving. One major contribution of the industry to the battlefield has been the ability to shift from manual remote piloting of UAVs to semi- or fully autonomous systems using AI, machine learning, and sensor fusion. Moreover, AI integration has been able to incorporate computer vision systems in UAVs, allowing the systems to interpret their surroundings, navigate autonomously and identify targets.

Ukraine has become a testing ground for the EU's own defence strategy against Russia, having firsthand experience with the Kremlin's strategies and technologies.

3.2.1 Integrating Ukraine into Europe's Defence Industries

It is this rapid development that has sparked considerable interest among European companies and governments in Ukrainian drone technology. At the 2024 EU-Ukraine Defence Industries Forum, EU officials emphasised that cooperation would benefit both sides, as European industries learn how to develop and deploy technologies in wartime while Ukraine believes that a joint Ukrainian and European defence technological and

[21] Mykhailo Samus, "Lessons learned from the war in Ukraine. The impact of drones.", *New Strategy Center,* 2024.
[22] Mykhailo Samus, "Lessons learned from the war in Ukraine. The impact of drones."
[23] Ulrike Franke, "Drones in Ukraine: Four lessons for the West," *European Council on Foreign Relations,* January 10, 2025.
[24] Elisabeth Gosselin-Malo, "Combat mass and speed: Europe moves to unlock Ukraine's drone insights," *DefenseNews,* October 9, 2025.

industrial bases would serve as a long-term deterrent against Russia.[25] Through this collaboration, the donor-recipient relationship is changed to a two-way resilience-building.

Several European countries have already established industrial partnerships with Ukraine in order to collaborate and innovate their own production processes jointly. For instance, the Belgian company Thales Belgium is currently manufacturing anti-drone systems in collaboration with Ukraine, while the German firm Quantum Systems has opened a drone factory and development hub in Ukraine.[26] Lithuanian defence firms have already tested their UAVs in Ukrainian warfare, and more recently, the UK announced "Project OCTOPUS" in partnership with Ukraine, focused on the mass production of low-cost interceptor drones designed to neutralise Russian UAVs.[27] Similarly, in September 2025, the Netherlands and Ukraine signed a memorandum of understanding to co-produce drones.[28]

At the EU level, the EU Defence Innovation Office in Kyiv, hosted by the EU Delegation to Ukraine, was opened in 2024 as part of the implementation process of the European Defence Industrial Strategy.[29] Bringing together officials from the European Commission's Directorate-General for Defence Industry and Space (DG DEFIS) and the European External Action Service (EEAS), the Office serves as the EU's first defence innovation hub outside its own territory.[30] The Office does not only support Ukraine's military and defence R&D needs, but also helps build a more innovative and competitive European defence industry.

Building on these initiatives, the European Commission, under the leadership of Ursula von der Leyen, has proposed a "Drone Alliance with Ukraine", institutionalising this emerging consensus on Ukraine's leading role in UAV manufacture. In her 2025 State of the Union speech, President von der Leyen suggested using €6 billion from the interest generated on immobilised Russian assets to link purchases "for Ukraine, with Ukraine, and from its industry" in order to further integrate Ukrainian and European businesses.[31] The initiative should be backed by both the Strategic Autonomy through Flexible Engagement (SAFE) framework and the European Defence Investment Programme (EDIP). The program aims to create a long-term institutional mechanism for

[25] Daniel Fott, "Integrated arsenals? Mapping defence industrial relations between Europe and Ukraine," *IRIS Armament Industry European Research Group,* December 4, 2024..

[26] Daniel Fott, "Integrated arsenals? Mapping defence industrial relations between Europe and Ukraine."

[27] Gov.UK, "Groundbreaking Ukraine tech sharing agreement to deliver drones and support jobs," September 10, 2025.

[28] *"Ukraine and the Netherlands launch joint production of long-range drones under the 'Build with Ukraine' initiative,"* Ministry of defence of Ukraine, October 10, 2025.

[29] European Commission, "JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, A new European Defence Industrial Strategy: Achieving EU readiness through a responsive and resilient European Defence Industry," JOIN(2024) 10 final March 5, 2024.

[30] "EU Defence Innovation Office", *European External Action Service,* lastly accessed on November 8, 2025.

[31] Ursula von der Leyen, "State of the Union Address."

co-production, joint financing, and Ukraine's long-term integration into Europe's defence-industrial base.[32]

4.3. Ukraine's Battlefield Lessons as inspiration for EDDI Acceleration

Ukraine's layered and networked approach to drone warfare, integrating visual, acoustic, radar, and radio-frequency sensors, demonstrates how modern air defences must combine detection, classification, and neutralisation within a unified system. Ukraine's success in intercepting up to 85% of Russian drones, even under massed attacks, illustrates the possible operationalisation of this model.[33] Projects such as Zvook, which employs acoustic sensors to identify drone engine signatures, and networked command tools like Delta and Virazh, have drawn considerable interest from NATO and EU observers for their efficiency and adaptability.

The rapid Ukrainian developments of swarm technology in the country could further contribute to European coordination without individual human operators and allow surveillance and defence of strategic infrastructures. Contemporarily, electronic warfare drones could allow EU member states to interfere with Russian communications, block drones' GPS signals and neutralise them.

Another major innovation is the improvement of fibre-optic drones, which are immune to enemy interference and faster at communicating data. In addition, the Kinet counter-drone systems adopted by Ukraine are also effective systems for countering drone incursions. These can incorporate radar to detect drones and a function to target and neutralise the threat.

This success rate is further accentuated by the Ukrainian production's ability to maintain low production costs for first-person-view drones (around €1,500 per unit) and interceptor drones (around €4,200 each).[34] The latter are provided with an explosive charge that detonates near a target. Cost-effectiveness is an important feature that determines the feasibility of the defence project. For instance, NATO fighter jets recently used AIM-9X Sidewinder missiles to shut down Russian Gerbera drones' incursion in Poland.[35] However, these cost around €350,000 each, an expense that significantly exceeds the estimated cost of Russian drones (approximately €9,000), showing the need for developing affordable counter-UAV systems.

Therefore, Ukraine can teach the EU many lessons for the implementation of EDDI. Primarily, the EU must reduce the time required for testing, certification, and procurement of UAVs. Secondly, a thorough analysis of the costs of the technologies must be carried out in order to maintain cost-effectiveness. Finally, it is imperative that production focuses on technologies that have already been implemented in Ukraine. This will ensure that the lessons

[32] For more information about SAFE financing, see: "SAFE," European Commission, lastly accessed on November 8, 2025.

[33] "Analysis: Ukraine air defence stretched but coping with increased attacks," BBC Monitoring, June 7, 2023.

[34] Igor Kossov, "Ukraine already built Europe's "drone wall"—here's how it actually works,"*Euromaidan Press,* September 23, 2025.

[35] Sascha Vakulina, "Defending the Skies: How Can Ukraine Help Europe Build Its Drone Wall?" *Euronews*, October 2, 2025.

learned on the front lines can be leveraged and a multilayered model of objective success can be adopted. This model must integrate visual, acoustic, radar, and RF sensors.

4. Policy Recommendations

By reaching an agreement on Ukraine's inclusion in the European Defence Fund on November 7 2025, negotiators from the European Parliament and the Council have achieved a significant milestone that will increase the prospects for Ukrainian enterprises to engage in European research and development cycles.[36] However, the two institutions have not yet formally voted on their approval. Using Ukrainian expertise and expanding assistance for the Ukrainian front is crucial to enable gradual integration into the European Defence Technological and Industrial Base (EDTIB) and ensuring increased innovation in European defence.

However, persisting limitations are still in place. Ukraine's military expertise and technological advancements have shown that simply restocking Europe's depleted arsenals is insufficient. Without a corresponding commitment to innovation, adaptation, and the rapid integration of new technologies into operational philosophy, such investments risk exposing structural flaws rather than strengthening resilience.

Moreover, when faced with hybrid threats, the European Union's own security can be seriously jeopardised by its complex bureaucratic structures and slow decision-making process. Long-standing inefficiencies, such as expensive development and manufacturing costs, fragmented procurement procedures, poor interoperability, and inadequate capacity to counter large drone swarms, continue to undermine Europe's defence capability.

In light of these limitations, some policy recommendations can be made to accelerate the implementation of the EDDI initiative. These policy recommendations focus on strengthening EU-Ukraine cooperation in terms of knowledge transfer, co-production and industrial integration within the EDDI and the Drone Alliance initiatives.

4.1 Institutionalising operational knowledge transfer

Ukraine has a unique amount of human capital in addition to its economic and technological resources. A huge resource for research, development, and training is its 1.5 million registered veterans, many of whom have substantial expertise with electronic warfare, drone use, and frontline innovation. To institutionalise this capability inside the European defence ecosystem, the EU should establish joint EU-Ukraine training and innovation centers focused on networked defence operations, drone warfare, and artificial intelligence.

These facilities should collaborate closely with the NATO-Ukraine Joint Analysis, Training, and Education

[36] "EU investments in defence: Council and Parliament agree to support faster, more flexible and coordinated investments in European defence," *The General Secretariat of the Council,* November 8, 2025.

Center (JATEC), which was established in 2025 as a hub for collecting, analysing, and disseminating lessons learned from the Ukrainian battlefield. Through coordinated cooperation between JATEC, the European Defence Agency (EDA), and the EU Military Staff, the EDDI could integrate Ukrainian battlefield knowledge into its training programs, capability development plans, and doctrine updates.

4.2 European–Ukrainian Defence Co-Production Quota Agreement

By 2026, the European Union should establish a European-Ukrainian Defence Co-Production Quota Agreement as part of the Drone Alliance and the European Drone Defence Initiative (EDDI). This agreement should include dedicated rewards for programmes integrating Ukraine technologies. As a minimum threshold, all companies whose UAVs incorporate at least 20% of components, sensors, and command and control software from authorized Ukrainian companies should receive preferential access as manufacturers during the EDDI and Drone Alliance procurement process. Projects that don't meet this requirement would need to demonstrate an equivalent contribution through knowledge transfer, joint training programs, or investments in Ukrainian research and development.

5. Conclusions

The analysis presented in this article contributes to the ongoing debate on Ukraine's role in fostering EU security and defence preparedness.

Since the Russian full-scale invasion of Ukraine, the latter has been able to increase efficiency and lower drones' costs of production. Wartime demands have asked Ukraine to innovate quicker than its opponent. To achieve this, Ukraine has invested in groundbreaking technologies, including AI-driven swarm systems, acoustic and radar sensor fusion, and low-cost interceptor drones.

The 2025 drone incursions within the European airspace have highlighted the urgency of reinforcing the Union's readiness to respond to such hybrid threats. The expertise acquired by Ukraine throughout the war is now functioning as a doctrine for the EU, inspiring its next defence innovations. The European Drone Defence Initiative, referring to a multi-layered defence system, has already integrated tactical lessons from Ukraine.

The policy suggestions made, such as creating a co-production quota agreement and institutionalizing operational knowledge transfer through joint training centers, represent a proposal toward an innovation-driven approach to security cooperation. This paradigm acknowledges that in today's world order, security does not only mean rearmament but also recognising the need for deeper human cooperation.

"The founding mission of the European Union is to preserve peace. And today, that means having the capacity to deter aggression and provocation", said Ursula von der Leyen during her speech at the European Parliament

plenary debate.[37] The EU was born as a peace project, but remaining true to its original nature in times of growing crisis requires a combination of adaptability and deep scrutiny. Future research should carefully analyse the extent to which the European Commission's proposed "Defence Readiness Roadmap 2030" has been accompanied by ethical safeguards, democratic oversight and a coherent regulatory framework that balances progress with international legal obligations.

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All remaining errors and interpretations are entirely my own.

[37] Ursula von der Leyen, "Speech by President von der Leyen at the European Parliament plenary debate on a united response to recent Russian violations of the EU Member States' airspace and critical infrastructure."

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