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Securing Europe's Strategic Autonomy: Strengthening EU Defence and Industrial Value Chains in a Fragmented World

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Introduction

The European Union is confronting a decisive moment in its strategic evolution. Faced with a shifting global order marked by renewed great power competition, the resurgence of conventional warfare, and the rise of hybrid threats, the EU must urgently address its vulnerabilities primarily in security and defence but also including effects for other (civil) sectors. The war in Ukraine, mounting tensions in the Indo-Pacific, persistent instability in the EU's southern neighbourhood, and systemic threats such as cyberattacks, disinformation, and energy coercion have all revealed deep weaknesses in Europe's security architecture. Compounding these challenges is a broader shift in the global balance of power and a renewed emphasis on hard power, where authoritarian states like Russia and China are actively setting a new power-based order, using economic, technological, and military tools in a comprehensive strategy of power projection.

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This increasingly multipolar and volatile environment is further complicated by the evolving posture of the United States, which continues to pivot towards the Indo-Pacific and adopts a more transactional foreign policy approach. According to the National Security Strategy of the United States of America from November 2025, the US is urging Europe to, as a group of aligned sovereign nations, take matters of defence and security in its own hands. The European Union finds itself in front of a systemic challenge amidst the rapidly changing security environment. The future of Europe depends on its pace and capability to construct new power mechanisms in order to rebuild its strategic posture in the world. While transatlantic cooperation remains vital, its long-term reliability can no longer be assumed. This creates a twofold imperative for the EU: to deepen coordination with NATO where interests align, and simultaneously to build the capabilities necessary for autonomous strategic action. Crucially, Europe must reduce its dependence on external actors - be they allies or adversaries - by transforming its defence value chains into a source of resilience and sovereignty. Having shown a long tradition in implementing exceptional industrial value chains all over the world, the current challenges should be addressed through a dual-use lens that recognises the interdependence of civilian and defence sectors.

The Main Challenges

The European defence sector finds itself under scrutiny. The security threats require action from both ministries of defence and decision-making capacities at the EU level, and from industrial manufacturers. Even though the EU has been evolving and developing its security and defence policies, especially since 2022, there are still significant challenges ahead.

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First, coordination between European nations remains limited which materially constrains interoperability between allied EU Member States. The European countries are struggling to coordinate their defence strategies which has led to immensely fragmented defence production, defence procurement and to duplication of efforts and capabilities. Therefore, European governments direct significant shares of their defence spending to non-European actors, highlighting the lack of a consistent strategy at the EU level to establish a joint sovereign

regional defence posture. The fragmented defence posture of the EU has generated interoperability constraints among EU nations that have competing national strategic objectives. This has led to the current state of multiple defence capacities that are very difficult to incorporate into a wider common European defence framework. For example, while the US has only one main battle tank, at the EU level there are 17. One example that clearly illustrates this discrepancy is the NH-90 helicopter. In the original design for NATO it had only two variants, now there are approximately 47 variants of the NH-90 helicopters.

Secondly, the cooperation between the government and the defence industry is very weak. Most European defence sectors face misalignment between the government and the industry owing to siloed strategic planning, fragile budgets and unrecognized military requirements. The latter is a product of poor insight into current capabilities and readiness levels. The unclear requirements, lack of reliability and flexibility, and decentralised funding, discourage the European defence industry entities to make long-term investments and de-stimulate innovation cycles.

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Third, the defence industry is a notable consumer of critical raw materials that are mainly outsourced from non-NATO countries. Even though Europe had its own capacities for refining critical raw materials in the past, the last few decades it has primarily outsourced mining and processing projects, being a helping hand for China in practically creating a monopoly in this field. This makes the EU heavily dependent on unstable supply chains of critical materials for its defence and security. The EU imports 75% to 100% of its metals, which makes it reliant on countries like China. Critical raw materials will inevitably be a platform for new conflicts, as well as leverage in the increasingly competing security environment. Therefore, it is of utmost importance to assess the current state of supply chains in the EU and to propose and develop mechanisms that will reduce the EU's dependence on foreign actors.

The Current State of EU's Strategic Value Chains

Today, the EU's strategic value chains - particularly in defence and dual-use technologies - are highly fragmented, with weak central oversight and significant external dependencies. Value chains in key areas such as semiconductors, advanced electronics, rare earths, propulsion systems, and AI-enabled defence applications are largely globalised, exposing the EU to systemic vulnerabilities. The European Commission has made important strides through initiatives like the Critical Raw Materials Act and the European Defence Fund, but control remains limited.

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It is estimated that 39% of EU defence equipment spending will be directed to suppliers outside the purchasing country or regional industrial base in the next 8 years. In the case of rare earth elements and permanent magnets essential for precision-guided weapons and drones, dependence on China exceeds 98%. This dependence is not just upstream: the EU holds less than 1% market share in the midstream and downstream stages of rare earth permanent magnet production. For advanced semiconductors, the EU relies almost entirely on supply chains rooted in East Asia - particularly Taiwan and South Korea - for manufacturing, and on the United States for chip design. Even in seemingly benign sectors like satellite components or advanced optics, more than 50% of the supply comes from non-EU actors.

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This dependence poses both economic and strategic risks. European defence manufacturers face rising order backlogs as demand accelerates, reflecting limited surge capacity and fragmented production networks across European supply chains. China has already demonstrated its willingness to weaponize interdependence through export restrictions and coercive industrial policies. The United States, while still a close ally, increasingly prioritises its Indo-Pacific posture and has shown readiness to impose export controls or withhold technology under national interest exceptions. Russia, meanwhile, remains a threat primarily through energy leverage, cyber disruption, and disinformation targeting EU defence industries and institutions. To meet these challenges, the EU must overhaul its defence industrial ecosystem and manage it as an integrated, innovation-led system, with linkages to the private/civil sector. That begins by recognising that innovation drives competitiveness, competitive pressure accelerates innovation, and targeted industrial policy can orchestrate the value-creation ecosystem to amplify both. The defence sector is uniquely fertile for breakthroughs because mission stakes are existential, governments shape demand, and hybrid warfare increasingly fuses economic and military domains.

U.S. practice shows how predictable public funding and steady revenue pipelines derisk R&D, sustain prototyping, and pull capabilities to scale. This divergence is reflected in defence R&D intensity: EU defence R&D spending as a share of GDP remains a fraction of US levels, limiting Europe's ability to convert procurement demand into scalable, dual-use technological capacity. As advances diffuse through supply chains and innovation networks, they are repurposed into dual-use applications that lift productivity across the wider economy. Accordingly, Europe needs

continuous mapping and monitoring of strategic value chains - from raw materials to systems integration - to surface vulnerabilities and hidden strengths. A permanent EU-level mechanism should own this picture and translate it into coordinated industrial policy interventions. On that basis, the EU should build a more robust and responsive production base, with instruments to scale manufacturing, secure critical inputs, and surge resources in crises. Delivering this requires EU-level regulatory and financial tools, including legislation for emergency coordination and rapid investment as well as adaptive regulatory instruments such as sandboxes.

Conclusion

Europe must secure long-term access to the raw materials and technologies that underpin defence capabilities. This includes reinforcing the EU's Critical Raw Materials framework, supporting domestic extraction where possible, and negotiating supply agreements with like-minded partners. At the same time, greater investment is required in research and development, particularly in areas such as AI, quantum computing, and hypersonics. European firms and institutions must be empowered to innovate independently of foreign tech giants, and intra-EU industrial partnerships must be strengthened to deliver interoperable and scalable platforms.

Innovation needs to be institutionalised, but not over-regulated. Recognising the dual-use nature of key enabling technologies requires an integrated approach to regulatory and policy design. The EU should remove cross-DG barriers and reduce siloed decision-making, not only to strengthen its innovation capacity but also to secure sustainable growth and technological sovereignty. To achieve this, the EU should create a dedicated agency to oversee defence innovation, streamline funding, and fast-track the deployment of new technologies. This agency would serve as a hub for European startups and SMEs working in defence-related fields, helping to bring cutting-edge capabilities to market faster by reducing market frictions and transaction costs experienced by high innovation projects. A secure, EU-wide defence technology cloud should also be established to facilitate collaboration, protect intellectual property, and improve procurement and development cycles across Member States.

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Reducing dependence on foreign actors also requires the EU to apply more rigorous regulatory tools without impeding the foresight and adaptivity necessary to foster innovation. A European-level screening mechanism must be fully implemented and enforced to prevent strategic takeovers of defence, aerospace, and cyber companies. This extends to strengthening Europe's domestic financing capacity by mobilising public funds and crowding in domestic private capital to scale innovation in European dual-use capabilities. Simultaneously, the EU should develop a tailored export control regime to govern the transfer of sensitive dual-use technologies, reinforcing internal capability

without eroding global competitiveness.

It is important to note that the EU has extremely narrow possibilities when it comes to its own rare earth materials that are crucial for developing a resilient defence industry and resistant supply chains. It will therefore be necessary to formalise supply chain partnerships through industrial security compacts that include joint development, shared stockpiling and crisis coordination with third countries such as Canada, Japan, South Korea and Australia. Within the EU, mechanisms for joint procurement and shared strategic reserves of critical components should become standard.

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Ultimately, this transformation must be accompanied by a shift in strategic mindset. Europe must embrace its role as a geopolitical actor, capable of shaping its environment rather than merely reacting to it. Strategic autonomy should be positioned not as an alternative to NATO but as a necessary complement in a world where alliances are increasingly fluid and uncertain.

This is not merely about securing supply chains; it is about securing Europe's future. Strategic value chains are no longer just economic instruments - they are the foundation of sovereignty and power in a contested world. Only by mastering these enablers can the EU ensure its relevance, resilience, and strategic freedom in the decades ahead.

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