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**EU Defence Industry Transformation Roadmap:  
Unleashing Disruptive Innovation for Defence Readiness**

## 1. INTRODUCTION – THE IMPERATIVE OF SPEED, AGILITY AND RISK-TAKING FOR DEFENCE

**Innovation is a critical component of Europe's defence readiness** <sup>(1)</sup>. Disruptive technologies and their fast development, testing and embedding in defence capabilities are essentials of modern warfare. To build credible deterrence and be ready for the unthinkable, the EU should accelerate its defence industrial transformation and fully unlock the potential of innovation.

**The war in Ukraine is demonstrating how rapidly defence technologies evolve and can alter battlefield dynamics** <sup>(2)</sup>. SMEs, small mid-caps, startups, and scaleups, often with a civilian deep-tech background, are central to Ukraine's defence by swiftly delivering critical capabilities to the armed forces. Innovation and adaptation cycles are becoming increasingly shorter. **High tech and complex systems are combined with low-cost and mass-manufactured products**. Disruptive technologies such as AI, quantum, cyber, and space-based systems are providing rapid tactical change on the battlefield.

More than **230 defence tech startups** were founded in Europe since Russia's invasion of Ukraine in February 2022, and private investment in defence startups reached an all-time high in 2024 <sup>(3)</sup>. These "New Defence" players, some coming from civilian and dual-use markets, are transforming the defence sector <sup>(4)</sup>. They broaden the European Defence Technological and Industrial Base (EDTIB), accelerate the development and deployment of disruptive innovation, and introduce a new operating model based on rapid iteration, agility, cutting-edge innovation, software-first architectures, and greater risk-taking. Private financing enables their fast growth <sup>(5)</sup>. These companies are bringing a new approach to defence. **Bringing together the strengths of New Defence players and established defence industry actors** can drive the transformation of the defence industrial sector, foster more agile and adaptive approaches, and challenge existing procedures to deliver faster, more effective capability development and deployment.

Europe excels in the development of complex defence systems and cutting-edge technologies. Yet, as Ukraine's battlefield experience shows, this is no longer enough in a rapidly evolving threat landscape, where military edge depends not only on advanced technologies but also on the capacity to quickly adapt, iterate, deploy and mass-manufacture cost-efficient solutions. **The EU needs a fundamental change of mindset and procedures inherited from peace time at all levels: Member States, industry and EU institutions**. Agility, speed, collaboration and risk-taking should become the new normal in defence capability development in Europe.

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<sup>1</sup> [Readiness Roadmap 2030 - European Commission](#), 16 October 2025.

<sup>2</sup> For example, according to a *Center for Strategic & International Studies* report, in Ukraine, drones equipped with AI-enabled autonomous navigation have transformed battlefield effectiveness, increasing hit probability from just 10-20% to 70-80%. This leap in accuracy not only enhances military effectiveness but also leads to significant cost reduction.

<sup>3</sup> Dealroom.

<sup>4</sup> 'New Defence' refers to a new paradigm in defence innovation, driven by technological trends such as the leveraging of civilian-dual use technologies, software-defined warfare, and agile innovation cycles, as well as new business models, leading to increased efficiency, reduced costs, and accelerated delivery of defence solutions, with a greater emphasis on risk-taking.

<sup>5</sup> Private investment into European deep tech defence and security startups and scaleups hit a record high of over €5 billion in 2024, marking a fivefold surge compared to 2019. In 2024, these startups received 10% of all venture capital funding in Europe - NATO Innovation Fund and Dealroom Report *Defence, Security, and Resilience in Europe* (February 2025).

This requires systematically leveraging Europe's wider civilian research and deep-tech innovation ecosystem, ensuring that dual-use solutions emerging from the civil side can be rapidly sourced, tested and integrated into defence capability development. EU Member States are responsible for defining and communicating demand signals to industry. Achieving a genuine transformation of Europe's industrial base will depend not only on supply-side measures, but equally on a bold transformation of demand that steers industry toward innovation and readiness to respond to those demand signals. Member States should be equipped to conduct defence procurement in a faster manner, conducive to more openness to new entrants and to rapid integration of disruptive technologies in capabilities across all domains, to face the rapidly evolving threat landscape.

This Roadmap presents clear steps to accelerate the transformation of the EU defence industry and support New Defence players. It focuses on three key objectives: i) **better connect the defence and deep tech communities** to accelerate the development of disruptive solutions and the emergence of New Defence actors, attract skills and talent, and accelerate spin-in benefits; ii) **accelerate the integration of advanced technologies into military capabilities of EU Member States** to achieve EU defence readiness and effective deterrence; iii) **enhance Europe's defence production capacity through disruptive industrial advanced manufacturing solutions** to deliver capabilities at speed, scale and in a cost-effective manner. It complements the Preserving Peace - Defence Readiness Roadmap 2030 of 16 October <sup>(6)</sup>

The first part of the EU Defence Industry Transformation Roadmap provides an **analysis of the lessons learnt from Ukraine** for a new, more agile approach to defence in the EU, including by supporting the emergence and growth of New Defence players. It also underscores how **emerging disruptive technologies profoundly reshape modern warfare** by integrating technologies such as AI, autonomous systems, and quantum technologies into capabilities that are changing the way military operations are conducted. This transformation enables more adaptive, data-driven and resilient defence systems, re-defining modern warfare and deterrence.

The second part focuses on the **key challenges to be addressed, and the corresponding actions proposed**. It identifies four main areas for action: supporting the full investment journey of New Defence companies; accelerating the time to market of defence technologies; improving access to contracts and broadening the pipeline of innovative defence solutions; and fostering the skills and talent needed to sustain Europe's defence technological edge. The swift implementation of the actions outlined in this Roadmap will create the conditions for the rapid emergence of a new **defence industrial ecosystem** in Europe, fit for European defence readiness.

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<sup>6</sup> The Preserving Peace - Defence Readiness Roadmap 2030 sets out clear objectives and milestones to achieve defence readiness by 2030, as outlined in the White Paper for European Defence: [Readiness Roadmap 2030 - European Commission](#)

## 2. ADAPTING TO MODERN WARFARE: LESSONS FROM UKRAINE AND EUROPE'S EVOLVING DEFENCE PARADIGM

### 2.1. Learning from Ukraine: agility, innovation and rapid adaptation on the battlefield

The full-scale Russian war of aggression against Ukraine has underscored the centrality of agility, responsiveness, and technological adaptation in modern warfare, alongside the need for ramped-up production and availability of sufficient mass. The EU and its Member States should embrace these lessons for their own defence readiness.

#### *Leveraging dual-use innovation*

**Dual-use innovation** and speedy integration of civilian technologies into military capabilities have been a key factor of success in Ukraine's defence. In this context, building stronger synergies between traditional defence industry actors and the civilian tech sector across the entire research and innovation ecosystem is of strategic importance.

Faced with a numerically superior adversary, which had an advantage in artillery fire power on the battlefield, Ukraine successfully leveraged its innovation ecosystem to rapidly and cost-effectively scale military **drone and counter-drone systems**, particularly First Person View (FPV) drones, and apply them to defence purposes. These inexpensive yet highly effective short-range drones enable Ukraine to inflict serious damage on Russian forces and maintain defensive lines, offsetting persisting shortages in traditional defence capabilities such as artillery. At the same time, **cyber capabilities** have been critical in disrupting adversary command-and-control systems and protecting Ukraine's own communications and intelligence networks.

#### *Prioritising scalable and adjustable systems*

**Software-defined weapon systems** are a defining feature of the Ukrainian response. From real-time data fusion and digital targeting tools to adaptive electronic warfare systems, adaptable software solutions have become the engine of battlefield effectiveness.

**Modularity and open architectures** are key to rapidly reconfigure, upgrade, or integrate defence systems, drawing on commercially available interoperable technologies. Ukraine has been facing the challenge of adapting received weapon systems with limited interoperability to platforms in their inventory. This experience highlights the importance of embedding interoperability and modularity by design, embracing more flexible, scalable, faster and future-proof approaches that ensure weapon systems can rapidly adapt to changing needs. It also underlines the importance of maintaining control over the design authority of defence systems, enabling rapid adaptation and use free of foreign restrictions.

#### *Nurturing an agile ecosystem able to quickly provide operational solutions*

The Ukrainian defence industrial ecosystem, comprising both established industrial actors and a growing cohort of startups and SMEs, can integrate operational feedback in real time, to rapidly develop tailored solutions, and deliver them at remarkable speed. New Defence companies have demonstrated an exceptional ability to deliver drones, secure communication

systems, and other software solutions in a matter of weeks. They can rapidly mobilise **teams, software and hardware to maintain and regain military superiority** on the battlefield.

**Organisational and technological agility** is the direct consequence of procurement models based on bottom-up, decentralised decision-making approaches, quick testing in battlefield conditions, end-user feedback integration into industrial processes, and structured local collaboration between innovators, end-users, and investors.

The BRAVE1<sup>(7)</sup> platform has been central to this process. This is why the Commission has put in place a partnership with Ukraine through **BraveTech EU** <sup>(8)</sup> – to support Ukraine with game-changing solutions while accelerating the transfer of battlefield-driven knowledge and innovation into Europe. This initiative will accelerate the development, testing, and deployment of advanced defence solutions, fostering direct collaboration between Ukrainian and EU companies.

**Ukraine shows that innovation also depends on reliable access to materials - both raw and processed, including advanced materials, and to components.** Scalability depends on timely access to critical components <sup>(9)</sup>. While Ukraine is partially yet successfully filling capability gaps by developing indigenous solutions <sup>(10)</sup>, it keeps facing structural challenges, such as difficulties to mass-produce, in part due to limited availability of key components.

### *Accelerating knowledge-transfer from Ukraine*

To further leverage the lessons from Ukraine's war-time experiences and new management of defence, the Commission and the High Representative (HR), will **strengthen the role of the EU Defence Innovation Office in Kyiv (EUDIO)** to become an EU Defence Industry Office, monitoring military technological developments and frontline defence innovation, in close cooperation with the Ukrainian authorities. It will support the implementation of industrial ramp-up programmes, be a point of contact for Ukrainian authorities and EU stakeholders on funding and cooperation opportunities at EU level related to defence, joint procurement and production initiatives, and provide EU stakeholders with insights into the most recent technological developments on the battlefield. Furthermore, the EUDIO will monitor priority technology areas for joint development, such as drones, electronic warfare, cyber and battlefield medical technologies, as well as liaise with international partners.

Following the provisional agreement reached by the Parliament and the Council on the Regulation to incentivise defence-related investments in the EU Budget, the Commission will start the process to associate Ukraine to the European Defence Fund (EDF). In addition, the

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<sup>7</sup> BRAVE1 is Ukraine's defence technology platform created to accelerate innovation and support the development of advanced military solutions. Launched in 2023 by the Government of Ukraine, it brings together government institutions, industry, and innovators by providing organisational, informational, and financial support to defence tech projects to turn battlefield experience into cutting-edge defence technologies. [Brave1 - Ukrainian Defense Innovations](#).

<sup>8</sup> BraveTech EU aims to boost resilience, reinforce security, and drive strategic investment in Europe's defence industrial base. It brings together the European Defence Fund (EDF), the EU Defence Innovation Scheme (EUDIS), and Ukraine's BRAVE1 defence tech platform to create a unified framework for joint development, testing, and deployment of cutting-edge defence solutions. [BraveTech EU - Defence Industry and Space - European Commission](#).

<sup>9</sup> The Critical Raw Materials Act is a key step in this direction, aiming to ensure the EU's secure and sustainable access to critical raw materials and reduce dependence on third-country suppliers. [Critical Raw Materials Act - Internal Market, Industry, Entrepreneurship and SMEs](#).

<sup>10</sup> Key examples include the Sapsan ballistic missile and the FP-5 Flamingo cruise missile.

Commission, in close cooperation with the European Defence Agency (EDA), will swiftly implement **BraveTech EU** to accelerate the development and deployment of technologies aligned with Ukraine's defence needs, fostering close cooperation between EU and Ukrainian defence innovation ecosystems.

## 2.2. A European defence revolution in the making

The defence investment surge in Europe creates the conditions for the rapid evolution and uptake disruptive technologies and the emergence of New Defence players in the EDTIB. These two trends are driving a revolution in the European defence industry.

### *Technological innovations transform defence capabilities and the way modern warfare is conducted*

Many of the critical technologies that are reshaping defence are inherently dual use in nature. Leveraging the EU's civilian innovation ecosystem will be essential to integrate these technologies at the speed and scale required to achieve EU defence readiness. Taken individually, these technologies have the potential to bring concrete solution to operational issues on the battlefield. At the same time, it is paramount that the potential of these technologies is integrated into more traditional defence capabilities and defence sub systems.

**AI is a strategic driver of military innovation. The future battlefield will be marked as much by algorithms and data as by kinetic capabilities.** AI applications reshape military strategy, accelerate decision-making, and enable precision operations. They enable automation, enhance command-and-control functions, and improve situational awareness through rapid data fusion and analysis, within a human-centric approach. They reduce human exposure to high-risk environments, **contribute to fewer casualties by limiting human combat interactions**, and support real-time operational decisions. Whether it is on drones (air, subsea, ground), counter-drone systems, air defence, precision striking, Command & Control, logistics, and combat ready virtual reality, AI integrated solutions are central to defence superiority.

**Quantum is a key emerging technology for defence capabilities.** Quantum sensors provide unparalleled precision in navigation and target detection, operating even in Global Navigation Satellite System (GNSS)-denied environments. **Quantum communications**, particularly quantum key distribution, enable ultra-secure data transmission, safeguarding military and intelligence information from interception or future quantum-enabled cyber threats. **Quantum computing** will revolutionise operational planning by enabling the rapid processing of complex scenarios, optimising logistics chains, and supporting advanced simulations for materials discovery or battlefield dynamics. With approximately **32% of the world's quantum-specialised companies located within the EU** <sup>(11)</sup>, Europe has a robust technological and industrial base supported by a vibrant ecosystem of research organisations, innovative startups, and established industry players. <sup>(12)</sup>

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<sup>11</sup> The Joint Research Centre: EU Science Hub.

<sup>12</sup> The **Quantum Europe Strategy** further underlines the strategic value of quantum for defence, highlighting its dual-use nature and transformative potential. The EU has already taken measures to ensure that quantum developments are both accessible and aligned with European defence and security priorities.



**Space-based technologies** increasingly underpin multidomain operations by **providing the data backbone for decision superiority** and operational coordination <sup>(13)</sup>. Space-based technologies provide advanced solutions for geo-spatial intelligence and situational awareness, secure communication on the battlefield as well as enhanced prevision for defence capabilities. Initiatives such as IRIS<sup>2</sup>, Galileo's Public Regulated Service, and the planned Earth Observation Governmental Service, together with the growing number of new space actors in the EU, will lead to further integration of space-based solutions in defence capabilities while de-risking and reducing dependencies. Moreover, **secure and resilient connectivity technologies**, including for quantum and AI-powered defence systems, where Europe has a strong competitive edge, are an essential enabler for defence.

Cyber, as the fifth domain of warfare <sup>(14)</sup>, is a central element of European and national defence and security strategy. Dual by nature, cybersecurity and cyber defence capacities are already defining the military might in the battlefield but are also central for the protection of critical infrastructures such as the communication network (terrestrial or space-based ones), the energy infrastructure or transport and the financial sectors. Cyber is a key component in any hybrid warfare campaign, designed to sow division and destabilise Europe. As outlined in the White Paper <sup>(15)</sup>, developing and deploying cyber defence and cyber offensive capabilities is paramount.

Over the recent years, the **EDF** has funded the development of numerous defence technologies and products leading to innovative solutions in AI, robotics, hypersonic weapon systems, cloud, new advanced materials, space-based technologies and quantum-based technologies. The EDF dedicates **4–8% of its annual budget** to disruptive technologies.

To further boost their development and enhance technological sovereignty, the **Commission** will further **simplify and accelerate** the EDF's R&D grant application and evaluation procedures for disruptive technologies <sup>(16)</sup>. The Commission will also reinforce its defence **tech-watch capacity** with its own Joint Research Centre (JRC) <sup>(17)</sup> and in close cooperation with the EDA and Member States, to enhance EU-wide information-knowledge on emerging defence technologies, including with EU defence industry. In addition, the Commission will strive to ensure the maximum support possible from EU defence instruments to capability development within the Capability Coalitions.

***The rise of new actors drives changes in industrial practices and operational approaches, introducing greater agility and responsiveness***

**The emergence of New Defence actors, such as innovative SMEs, small mid-caps and startups, is transforming how defence capabilities are developed, produced and deployed.** By complementing established industry players, these companies are driving agile development processes, faster iteration cycles, and novel approaches to capability delivery, helping Europe's defence sector respond more rapidly to changing operational needs.

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<sup>13</sup> The *EU Space Strategy for Security and Defence*, adopted on 10 March 2023, underlines the growing strategic importance of space as a contested and competitive domain, calling for **enhanced protection of European space assets** and the development of dual-use technologies supporting defence missions.

<sup>14</sup> Along with land, sea, air and space.

<sup>15</sup> [White paper for European defence - Readiness 2030 - Defence Industry and Space](#)

<sup>16</sup> [Defence Readiness Omnibus - Defence Industry and Space](#).

<sup>(17)</sup> Within the mandate given by the programme funding it

Several initiatives have been launched at national, EU and NATO level to support new entrants to the defence industry ecosystem, their integration into defence supply chains, and their collaboration with established players.

The European Defence Industry Programme (EDIP) <sup>(18)</sup> aims to strengthen Europe's defence industrial base, including the emergence of innovative SMEs, and enhance their competitiveness and resilience including through industrial reinforcement actions.

The European Defence Innovation Scheme – EUDIS <sup>(19)</sup> - is the first EU initiative to provide targeted support to new entities in the sector. Launched in 2022, EUDIS empowers and accelerates a new generation of defence companies across Europe. It is set to dedicate up to €1.5 billion until 2027 to foster game-changing technologies and strengthen connections between emerging innovators and established industry players through regular defence hackathons, a defence business acceleration programme, matchmaking, targeted R&D calls and access to equity financing. In addition, the Hub for EU Defence Innovation (HEDI), launched by the EDA in 2022, acts as a platform fostering close collaboration among Member States and EU stakeholders on defence innovation matters. The NATO's DIANA programme <sup>(20)</sup>, the NATO Innovation Fund <sup>(21)</sup> and the recently launched Rapid Adoption Action Plan <sup>(22)</sup> also aim to accelerate the adoption of new defence technologies and support new defence actors. <sup>(23)</sup>

To leverage the transformative potential of New Defence actors in support of EU Defence Readiness, **the Commission should provide substantial support to innovative SMEs as part of the defence-related activities of the European Competitiveness Fund** and include measures facilitating their access to defence supply chains.

### 3. TURNING THE EU INTO A NEW DEFENCE POWERHOUSE

Transforming the EU defence industry by incorporating lessons from Ukraine's experience and harnessing the potential of both disruptive technologies and New Defence players requires addressing a set of structural challenges.

#### 3.1. Supporting the full investment journey of defence companies

The new generation of European defence players is attracting growing interest from private investors.

The EU's role should go beyond nurturing early-stage New Defence companies. These innovators are a key pillar of the EU's strategic autonomy and therefore should be able to find

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<sup>18</sup> [EDIP | A Dedicated Programme for Defence](#).

<sup>19</sup> Launched and funded under the European Defence Fund.

<sup>20</sup> [DIANA | Home](#) - The Defence Innovation Accelerator for the North Atlantic supports startups and researchers developing dual-use technologies for defence and security.

<sup>21</sup> [The Nato Innovation Fund | NIF](#) - A €1 billion venture capital fund investing in early-stage companies working on emerging and disruptive technologies with defence and security applications.

<sup>22</sup> The Rapid Adoption Action Plan aims to significantly accelerate the pace at which the Alliance adopts new technological products, in general to within a maximum of 24 months.

<sup>23</sup> The NIF is a multi-sovereign venture capital fund of EUR 1bn, backed by 24 Allies, investing in defence and deep tech startups.



in Europe the investment they need to scale and compete globally. Without such opportunities, they risk turning to foreign investors, undermining the EU's security and defence interests.

Ensuring both early-stage and late-stage funding for defence companies in Europe is an urgent priority. While the EU is already home to several defence unicorns, the growing number of new defence companies calls for greater investment efforts and access to capital. The EU should mobilise its entire financial ecosystem, including private equity, venture capital, pension funds, investment funds and asset managers, to support defence innovation from early-stage research to large-scale industrial production as needed for defence readiness 2030.

The Commission has taken significant steps aimed at improving access to finance for defence companies, including small mid-caps, startups, scaleups and SMEs. Central to these efforts is the **Defence Equity Facility**, a Fund-of-Funds co-financed by the Commission and the EIF, expected to channel over €500 million in equities into EU defence companies by 2026 <sup>(24)</sup>. The **European Investment Bank (EIB)** is increasing its support to defence companies, including a dedicated envelope to support access to **debt** for SMEs in defence industry supply chains.

Additionally, changes proposed in the Defence Readiness Omnibus will enable InvestEU to increase its financial support for the defence sector. The Commission is also building **stronger synergies between defence and civilian focused funding programmes** at EU level. Horizon Europe and its **European Innovation Council (EIC)** play an important role in supporting companies for the development of disruptive innovations such as quantum technologies, biotechnologies, robotics and AI. From 2026, the EIC Accelerator will be able to support dual-use projects, while the STEP Scale-up Scheme will support innovation in critical defence technologies. The Commission's proposal for the next Horizon Europe Framework Programme (2028–2034) aims to build on these efforts to further strengthen Europe's integrated innovation ecosystem. Moreover, the mid-term review of Cohesion Policy enables Member States to voluntarily use cohesion funds to support defence and dual-use industrial capacities and technologies.

Yet, the **lack of growth capital** is a persistent gap in the European defence innovation journey. This reflects a broader structural shortcoming in European capital markets, but it is particularly concerning in the field of defence, given its strategic nature and implications for European security.

#### ***Proposed action***

Together with EIB/EIF, the Commission will **support the launch of an up to €1 billion Fund of Funds** to provide **growth capital to defence-related innovative SMEs and scale-ups** and consolidate defence supply chains, with the support of private funds (venture capital, private equity, private credit, infrastructure), by Q1 2026.

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<sup>24</sup> The Defence Equity Facility (DEF), launched in January 2024, combines €175 million in funding co-financed by the European Commission and the European Investment Fund (EIF) under InvestEU.

### 3.2. Turbo-boosting the time-to-market of defence products, technologies and systems

**Testing and validation are essential steps in the journey to commercialisation of defence systems and technologies.** Research and technology infrastructures provide the essential capacity to accelerate this process, enabling disruptive technologies to reach operational readiness more quickly. Yet, the defence innovation cycle from ideation to capability remains very slow and cumbersome, falling short to meet the defence readiness Europe needs to achieve by 2030. Europe needs a **fundamental shift to rapidly turn ideas into game-changing solutions for armed forces.**

**Manufacturing capacity is also crucial to bring defence technology to market. However, it is expensive and requires major upfront investments.** New Defence companies are often hesitant to commit such resources without clear commercial prospects, which slows time-to-market and erodes their competitive edge. Such companies would benefit from agile and flexible approaches to manufacturing, such as manufacturing-as-a-service, including through the temporary repurposing of the manufacturing capacities of non-defence industry. In practice, larger companies from any sector could make available their manufacturing capacity and secured facilities available to the EU defence industry, providing ready-to-use, scalable, and secure resources. The development of manufacturing capacity also requires secure access to a resilient, sustainable and competitive supply of downstream products, materials and technologies. The ability of the defence industry to scale up is closely linked to a secure, circular and resilient supply of critical raw materials <sup>(25)</sup>.

**The operational testing of technologies in a relevant environment is essential for defence companies. However, access to testing infrastructure is often limited. Capacity constraints and lack of cross-border mobility across the EU create significant obstacles for new entrants, particularly SMEs, startups, scaleups and small midcaps.** This significantly delays time to market for defence technologies. Moreover, the EU defence market is highly fragmented, with different regimes for certification and validation of technologies across Member States. Evaluation and implementation processes are already lengthy and burdensome, and fragmented certification procedures further slowdown the adoption of innovative defence solutions. Limited access to shared data for defence also constrains the development of advanced software-based capabilities, such as cutting-edge AI solutions for defence.

With recent regulatory proposals, the Commission has taken significant steps aimed to further strengthen the integration of SMEs, small mid-caps, startups and scaleups into major defence projects by introducing more agile and accessible funding mechanisms in the EDF <sup>(26)</sup>. This includes the use of Financial Support to Third parties (cascade funding) in R&D projects, shorter project durations, and simplified application and evaluation procedures tailored to disruptive technologies and SMEs. A more innovation-friendly regulatory and investment environment, as foreseen under the forthcoming European Innovation Act, will help bring

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<sup>25</sup>It will be facilitated through the implementation of the Critical Raw Materials Act and the forthcoming Advanced Materials Act. The REsourceEU initiative will also contribute to this effort and frontload some of the deliverables of the Critical Raw Materials Act, such as the Critical Raw Materials Centre, and ensure that strategic projects within EU and around the world speedily transform into operational reality.

<sup>26</sup> [European Commission proposes Regulation to incentivise defence-related investments in the EU budget - Defence Industry and Space; Defence Readiness Omnibus - Defence Industry and Space.](#)

innovations to market faster and enable more streamlined procurement processes. The Commission will complement these efforts by proposing new measures that would accelerate the time-to-market for new entrants and offset part of the risks that they encounter when crossing the ‘valley of death’<sup>(27)</sup>.

### ***Proposed actions***

The Commission will:

Propose a **pilot instrument for agile rapid defence innovation [AGILE]**, driven by speed, responsiveness and greater risk-taking. It will propose a set of activities, including challenges, with time-to-result not exceeding 6-12 months. The pilot will enable the testing and refinement of targeted actions to better facilitate the entry of innovative companies into the defence sector and the deployment of game-changing solutions for armed forces. It will accelerate the time-to-market. It should also catalyse the development of innovative solutions, featuring low-cost advanced technologies and products, in support of European readiness flagships. The pilot instrument should test new ways of engaging with new defence entrants and enable to draw lessons ahead of the next MFF. The Commission will table a proposal in Q1 2026.

**Facilitate access to EU infrastructures**, such as the Commission’s JRC’s facilities and AI Factories/GigaFactories, chips pilot lines, quantum facilities and infrastructures, and Member State owned operational testing environments, including regulatory sandboxes, to New Defence players, to facilitate the rapid validation and development of defence technologies, increasing fast-track and cross-border access. This will complement the **EU network of testing facilities**, building on EDA’s existing defence test and evaluation support [starting in 2026].

Support **responsive and flexible manufacturing capacity** by proposing a **Manufacturing-as-a-Service and Security-as-a-Service initiative**. These approaches would allow defence companies (particularly SMEs) to leverage existing industrial and security capacities, reducing upfront investment needs and accelerating production scale-up. This model would enable faster deployment of innovative solutions, help companies scale production efficiently, and strengthen the resilience and responsiveness of the EDTIB [Q2 2026].

**Reinforce and leverage the potential of the 28th regime concepts to support defence companies in overcoming barriers to setting up, accessing finance, scaling, and operating across the Single Market**, building on ongoing work in this area. The Commission will **propose mutual recognition schemes** to align certification and validation of defence technologies across the EU. It will develop, in close cooperation with HEDI (EDA), policy guidance and best practices for Member States, to **foster coherent regulatory frameworks for the acceleration of operational testing and experimentation** and support the rapid development and adoption of emerging technologies [by end 2026].

In line with Data Union Strategy, propose the establishment of a trusted, secure, and interoperable data environment with the creation of a **European Defence Data Space** [by

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<sup>27</sup> European startups often encounter two ‘valleys of death’. The first occurs when innovations fail to become marketable products, while the second, particularly challenging in Europe, happens when companies struggle to scale. [EU Startup and Scaleup Strategy](#).

2028], in close coordination with industry, Member States, and EDA, to facilitate the development of game-changing capabilities for defence such as AI models, digital twins, and predictive maintenance <sup>(28)</sup>. The Commission will launch a reflection process with Member States and industry.

### 3.3. Enhancing access to new defence capabilities

**Access to contracts**, whether from public authorities or from private companies, **is the holy grail of any startup**. It generates significant positive spill-over effects, helping companies to attract new investors and customers. Recent EU initiatives such as **Security Action for Europe (SAFE)** and **EDIP** are significantly increasing funding for defence and promoting joint procurement across Member States. Yet, SMEs, small mid-caps, startups and scaleups still face barriers to access defence contracts and fully benefit from this surge in defence investments.

**Firstly, most new entrants often face a knowledge and information gap when trying to venture into the defence sector.** Many of them do not have direct access to end users, such as armed forces, prime contractors, or system integrators. They often lack basic information, for example on operational needs, that would enable them to adjust their solutions effectively to meet Member States' defence capability requirements.

**Secondly, defence procurement processes remain lengthy and complex to navigate, particularly for new entrants.** They were designed in peace time and for large system integrators. Defence procurement processes are also very often fragmented along national silos. Achieving a genuine EU defence single market is key for creating an environment in which startups, SMES and small-mid caps can develop, thrive and ultimately remain in Europe. New entrants lack the specialised knowledge, resources, and experience that larger established players possess to effectively manage procurement demands, often resulting in an uneven playing field. This also limits their ability to scale their solutions widely across the EU.

To fundamentally resolve these challenges, the EU must pivot from viewing procurement as a transactional process of **buying products** to a strategic act of **investing in industrial capacity and resilience**. Public procurement, accounting for approximately 15% of the EU's GDP <sup>(29)</sup>, is the most powerful, underutilised lever for building the resilient, innovative, and scalable industrial base required for EU Defence Readiness by 2030. This strategic shift requires not only faster processes, but also a complete redefinition of “value” in defence contracting, moving beyond lowest cost to prioritise long-term industrial strength, technological sovereignty, and workforce development.

Finally, there is a notable **disconnect between defence R&D efforts**, including many collaborative projects supported by the EDF, and procurement processes. Improving the link between defence R&D and procurement, particularly for EDF-backed projects, brings a

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<sup>28</sup> The European Defence Data Space could build on the feasibility study conducted by EDA on the establishment of an EU Data Space for Defence use cases, to be published by end 2025.

<sup>29</sup> [Register of Commission Documents - SWD\(2025\)332](#).

significant opportunity to accelerate the uptake of these promising technologies and strengthen EU defence readiness.

The Commission has launched several initiatives to improve access to contracts for the defence industry, in particular SMEs, small mid-caps, startups and scaleups, such as EUDIS Matchmaking and Business Accelerator. At national level, dedicated innovation units or hubs within Ministries of Defence have been set up to act as intermediaries between armed forces and the New Defence ecosystem <sup>(30)</sup>.

### ***Proposed actions***

The Commission will:

Launch **EUDIS Tech Alliances**, setting up a network of defence startup/scaleups and end-users (armed forces) around priority capability areas, aligning with SAFE's investment priorities. Alliances will enhance transparency on needs of armed forces, facilitate closer collaboration between innovative companies (including from Ukraine) and end-users to enable direct feedback. This will help companies to better address Member States' needs, with an initial focus on European readiness flagship projects [pilot launch by Q4 2025].

Create a **marketplace for EU backed defence technologies and products** that would facilitate a fast-track procurement for EDF-backed projects and companies (with a particular focus on SMEs, small mid-caps, startups and scaleups) allowing Member States to procure directly from these companies. This will enhance more rapid procurement processes and increase the visibility and adoption of EU-supported projects and innovative defence technology solutions [by Q4 2026].

**Leverage its role as a potential customer** of new dual-use companies, initially focusing on companies in the field of space [by Q4 2026], for example by purchasing services or products such as geospatial data from commercial suppliers. This will send a strong signal to the market, demonstrating demand for innovative capabilities, while attracting further contracts and private investment, thereby accelerating the growth of those companies in the EU.

Encourage Member States to allocate at least **10% of armament procurement budgets to emerging and disruptive technologies**. To achieve this, it will work closely with the EDA to provide Member States with targeted advisory support to enhance the procurement of disruptive technologies and innovative defence solutions (e.g. via EDA's Defence Acquisition Expert Network and HEDI) [by Q2 2026].

**Support the transformation of defence procurement by revising the Directive 2009/81/EC Defence and Sensitive Security Procurement**. The revision will contain measures to facilitate Member States investments in defence through faster, more streamlined and more transparent

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<sup>30</sup> For instance, some countries have created dedicated innovation units or hubs within their defence ministries, which focus on rapidly prototyping emerging technologies and streamlining contracting procedures. These initiatives are supported by substantial, ringfenced budgets and procurement strategies that allocate a significant share of resources to novel technologies such as AI, quantum computing, and autonomous systems. Examples include the United States' *Defense Innovation Unit* established in 2015, recent initiatives in the United Kingdom, and similar structures established in EU Member States such as Greece, France and Germany, all aimed at accelerating the integration of cutting-edge solutions into defence capabilities and better connecting with the broader innovation ecosystem.



procurement procedures. The revision should propose measures towards user-friendly and faster procurement for innovative SMEs, fast-track procurement for low-cost products, fast onboarding of innovative disruptive technologies and products and rapid adaptation of defence capabilities. Emphasis will be placed on engaging with startups, scaleups, and SMEs in the defence sector to ensure their perspectives and interests are adequately represented.

### 3.4. Generating the defence skills and talents

Defence is a booming industry that is currently experiencing unprecedented growth and undergoing a profound transformation. The defence sector faces labour and skills gaps and a critical talent challenge that threatens its operational capabilities and hence impacts EU's security. In this context, a shortage of skills risk is a major bottleneck. Both established defence companies and new entrants compete to attract and retain talent, while the defence sector faces competition from other industries.

**On the supply side**, the sector faces difficulties attracting and retaining professionals with the advanced skills needed for developing disruptive technologies for defence, including artificial intelligence, quantum computing and autonomous systems, as well as for production and maintenance. Competition for skilled professionals is intense. High-quality jobs with competitive wages and good working conditions as well as support to workers through ongoing transitions will strengthen the supply side.

Security clearance requirements, including citizenship requirements, limit the mobility within EU, as well as access to global talent pools. Women are also under-represented in the workforce. The Commission will support stakeholders engaged in the **Large-scale Skills Partnership in Aerospace and Defence** under the Pact for Skills to pursue their work on skills forecasting, upskilling and reskilling programmes, and talent engagement, with the aim to support Member States and industry actors in **upskilling** of around 12% of the existing aerospace and defence workforce each year and in **reskilling** 600,000 people for the defence industry by 2030.

**On the demand side**, shortages arise within armed forces and procurement bodies that require sufficient expertise to specify, acquire and integrate complex and innovative defence systems effectively, as well as for innovative and fast procurement. Without these skills, technological advancements risk not being fully operationalised. To address this, the EDA is planning to offer targeted training programmes aimed at building the necessary expertise within armed forces and procurement bodies.

#### ***Proposed actions***

The Commission will:

In the framework of the Union of Skills, set up a **Skills Guarantee pilot**, that will help workers at risk of unemployment or in professional transition from the automotive sector and its related supply chains move into jobs in strategic and growing sectors such as defence [as of Q4 2025].

Set up a sector-specific **EU Defence Industry Talent Platform** to support traineeships in dual-use and defence SMEs, small mid-caps, startups and scaleups, through vouchers, with the



purpose of increasing visibility of employment opportunities for young professionals in the defence sector and improving cross-European access to talent for defence SMEs, small mid-caps startups and scaleups <sup>(31)</sup>. [by Q4 2026].

Leverage **existing EU online academies** (such as the EUSPA Space Academy and Digital Skills Academies) to foster defence-related skills in line with EU industry needs and strategic priorities [starting Q2 2026]. Building on this foundation, explore the establishment of a standalone **EU Defence Industry Skills Academy** [from 2028 onward]. <sup>(32)</sup>

#### 4. CONCLUSION – THE IMPORTANCE OF A NEW DEFENCE INDUSTRIAL ECOSYSTEM

The European defence industry is a strategic resource to achieve the objectives of the Defence Readiness Roadmap. Yet, it needs to go through a **profound transformation process**, and **shift of mindset from peacetime to defence readiness**.

Ukraine has managed to put in place a “**state-of-the-art**” **defence industrial ecosystem**. The Ukrainian defence industry is pushed to continuously innovate, not only to develop new or complex systems, but also to develop low-cost solutions and to enhance the military edge of existing defence capabilities. Ukraine has transformed its defence industry and created the conditions for game-changing solutions to be quickly delivered to its armed forces, and for new defence entrants to play a central role in this effort, alongside established players.

**Europe must learn from Ukraine.** Development and adoption of disruptive innovation should no longer be a nice-to-have policy. It must become instrumental to push agility, speed and scale in the defence industry that Europe needs. The role of EU Member States in transforming capability demand signals is unique and crucial, guiding industry toward greater innovation, competitiveness, resilience, and readiness. The Commission is committed to providing the necessary support to incentivise and accelerate this transformation.

**New Defence players can accelerate this trend**, due to their appetite for disruptive solutions, new approaches, and risk-taking. It is imperative to create the conditions for their rapid emergence and their collaboration with established players. Europe needs a **transformed defence industrial ecosystem that brings together established industry leaders, New Defence players, and the broader tech community**. This transformed ecosystem should be able to fully unleash its industrial strength and innovation power, and deliver defence capabilities with unmatched speed, scale, and efficiency.

The Defence Industry Transformation Roadmap proposes clear steps towards achieving that goal. It is therefore a key enabler for Europe’s defence readiness 2030, including in supporting defence flagships. The Commission will immediately launch the proposed actions outlined in this Roadmap to initiate the transformation of Europe’s defence industrial ecosystem, and scale them up as of 2028. To monitor its implementation, foster the sharing of best-practices between Member States and incentivise the rapid development of measures at national level, the

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<sup>31</sup> Supported by existing EU instruments, including ESF.

<sup>32</sup> Taking into account the ongoing EU Skills Academies review.

Commission will organise an Annual Strategic Dialogue on Defence Industrial Transformation, bringing together Member States, the defence industry and the EDA.