

# EDM

EUROPEAN DEFENCE MATTERS

## Operational Autonomy A new EU defence landscape takes shape



> ART OR SCIENCE?

How EDA helps identify joint military projects

> POLAND'S PGZ:

The most successful defence company you've probably never heard of

> THE EU'S NEW RAPID DEPLOYMENT CAPACITY

Fast, but not furious

<b>WELCOME</b>	3
<b>COVER STORY: OPERATIONAL AUTONOMY</b>	
› <b>Former High Representative and Head of Agency Josep Borrell</b> Reflecting on a transformative tenure in EU defence and diplomacy	4
› <b>EDA welcomes new HRVP/HoA Kaja Kallas</b>	5
› <b>EDA Chief Executive Jiří Šedivý</b> Five years: from a global pandemic to Russia's invasion of Ukraine	6
› <b>The 2024 EU defence review, and new joint military projects</b> Emerging priorities shaping the next phase of cooperation	8
› <b>Art or science? How EDA nudges Member States closer to joint military projects</b> The history behind this pivotal EU initiative	9
› <b>Polska Grupa Zbrojeniowa (PGZ)</b> A Central European perspective on ramping up armament production	14
› <b>EU Military Committee Chairman Gen. Robert Brieger</b> Guiding the EU's shift in military posture	18
› <b>Reaction force: A visual timeline of Europe's evolving Rapid Deployment Capacity</b>	21
<b>CRITICAL VIEW: MYKHAILO SAMUS</b>	
› <b>How the EU is investing in Ukraine's defence industry</b>	22
<b>SPOTLIGHT: NATO'S NEW ASSISTANT SECRETARY GENERAL FOR DEFENCE INVESTMENT</b>	
› <b>Tarja Jaakkola on coordination among National Armaments Directors</b>	24
<b>INSIDE STORY: MINEFIELDS OF OPPORTUNITY</b>	
› <b>Financing for defence: EDA &amp; EIB</b> An interview with EIB Vice President Robert de Groot	26
› <b>The Joint Deployable Exploitation and Analysis Laboratory (JDEAL)</b> Teaching the art of counter-IED is urgent	30
› <b>PESCO Strategic Review</b> Charting the course for Europe's defence integration: 2026 and beyond	33
› <b>EDA's new RTI Director Nathalie Guichard</b> A fresh perspective on innovation in defence technology	36
› <b>EDA's Defence Data 2023/2024</b> Key findings shaping the European defence landscape	39



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# Winds of change

As the war in Ukraine grinds into its third winter, Kyiv and its partners face a test of their resolve, preparedness, and commitment to European security. Russia's deployment of the Oreshnik, a ballistic missile capable of carrying nuclear warheads, appears calculated to stoke fear.

For the first time in more than half a century, the Swedish government has issued public information leaflets instructing households on what to do in the event of war. Meanwhile, Russia's recent missile barrages targeting Ukraine's energy infrastructure have already left millions without power.

Europe's reliance on U.S. military leadership also faces a moment of reckoning, with U.S. President Donald Trump returning to the White House. His past criticisms of NATO and demands for even greater European defence spending remain unresolved.

In response to Russian aggression, European Union nations are ramping up their defence budgets, with a projected collective spend of €326 billion in 2024. In this edition of *European Defence Matters*, we hear from Polish armaments company PGZ about Poland's emergence as a leader, setting a target of 4.7% of GDP for defence in 2025. Across the EU, defence investments are expected to reach a record 31% of total defence expenditure, with research and technology spending rising to €5 billion in 2024.

However, the spectre of fragmentation continues to haunt European defence efforts. As Josep Borrell, the former head of the European Defence Agency (EDA), writes, too much goes on off-the-shelf purchases from non-European suppliers, undermining attempts to strengthen Europe's Defence Technological and Industrial Base (EDTIB).

Still, there is much progress to celebrate.

The EDA's Director of Capability, Armament & Planning (CAP) Stefano Cont highlights how the EU's 'State of the Union' on defence has broken new ground by fostering collaboration among Member States in areas such as air and missile defence, loitering munitions, electronic warfare, and a possible new combat vessel.

EDA Chief Executive Jiří Šedivý reflects on the Agency's expanding role, while European Investment Bank Vice President Robert de Groot examines the evolving partnership between EDA and the EIB in defence financing. We also mark the 10th anniversary of EDA's counter-IED laboratory, and look to the future, drawing insights from the Strategic Review of Permanent Structured Cooperation (PESCO).

Finally, we warmly welcome former Estonian Prime Minister **Kaja Kallas as the new Head of EDA**, Nathalie Guichard as its new Director of Research, Technology, and Innovation (RTI), and Sean White as its new Director for Industry, Synergies, and Enablers (ISE). All three bring a fresh vision for innovation and unity at a time when the stakes could scarcely be higher.

**Robin Emmott**  
*Editor-in-Chief*

**Lionel Sola**  
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Volodymyr Zelenskyy, President of Ukraine, meets Josep Borrell, then High Representative of the EU for Foreign Affairs and Security Policy and Head of Agency, Kyiv, Ukraine, 11 November 2024.

## With unity and by **acting quickly**, the EU can ensure peace and security

**I** have ended my mandate during dark and dangerous times. My final message is a call for urgent action. As I have often said, the European Union must learn to speak the language of power in global affairs. We have made some progress over the past few years. However, it is far from enough. We all need to step up to ensure peace and security for European citizens.

The Strategic Compass, drawn up at a time when few believed that Europe was in danger, has enabled us to strengthen the EU's role in security and defence. The European Peace Facility (EPF) has allowed us to break taboos by funding arms purchases to help our partners. It has been central in our support to Ukraine.

We have now provided assistance to more than 20 countries and strengthened our 'Security and Defence Partnerships', demonstrating Europe's global commitment to stability. We have also sharpened our capabilities in areas such as countering cyber and hybrid threats, and reinforced our work on space security and defence, as well as maritime security. But we need to do much more.

### Going beyond 2%

More than 1,000 days have passed since the invasion of Ukraine began. Russia's war of aggression remains Europe's greatest security challenge since World War II. Security is the prerequisite for everything else – freedom, prosperity, and stability. If Russian President Vladimir Putin succeeds in Ukraine, the cost to Europe will dwarf the resources we

**"Russia's war of aggression in Ukraine remains Europe's greatest security challenge since World War II. Security is the prerequisite for everything else – freedom, prosperity, and stability"**

are currently providing to Kyiv. An aggressive and heavily militarised Russia would pose an existential threat to the EU. Such an outcome would also undermine the rules-based international order founded on the United Nations Charter, which we advocate globally.

Our military support to Ukraine has already been significant, even if it is not sufficient. Over 65,000 Ukrainian soldiers



**Josep Borrell** has ended his term as Head of the European Defence Agency (EDA) and High Representative/Commission Vice-President, after five years at the helm of European foreign and security policy. He reflects on why the EU needs to strengthen its defences, how far it has come, and the difficulties ahead.

have been trained under the EU Military Assistance Mission in support of Ukraine (EUMAM Ukraine). Unprecedented military support to Ukraine by the EU and Member States has reached over €45 billion. In part, thanks to EDA's joint procurement, we have achieved the goal of delivering one million artillery shells to Ukraine, albeit later than planned.

Looking ahead, I have proposed that the next EPF tranche focuses on direct purchases from Ukraine's defence industry. Supporting Ukraine's industry directly would save costs and accelerate delivery of ammunition and equipment while supporting their innovative, efficient production (see EDM page 22).

However, it is obvious that we need to do more.

After three decades of 'silent disarmament' following the fall of Berlin wall, our defence spending has already significantly increased since 2014 and now reaches 1.9% of GDP. However, in view of Russian and Chinese rearmament on a massive scale, the NATO goal of 2% of GDP is no longer sufficient. To maintain our deterrence, we need to go significantly beyond this threshold.

#### EDA's crucial role

There needs to be closer coordination between the Member States in addressing urgent critical capability gaps, avoiding unnecessary duplication.

We also need to improve the interoperability of our equipment and to become better at purchasing together and purchasing European. We have a lot to do: only 18% of our military equipment purchases are made cooperatively. Our target, since 2007, is 35%. According to some estimates, almost 80% of the additional equipment we have purchased since 2022 has been sourced outside the EU.

EDA will have to play a crucial role, in close cooperation with Member States, to help remedy this. In addition, its work will need to be linked with that of the European Commission as it takes a greater role in support of the European defence industry.

Challenges abound. Our spending on research and development (R&D) pales in comparison to the United States, and fragmentation further weakens our potential. The European Defence Fund (EDF), and the Hub for EU Defence Innovation (HEDI) at EDA, are steps in the right direction to catch up, but they are just the beginning. Much more

investment is needed in these areas, both from the public and private sources.

I am pleased that a large number of Member States have signed letters of intent to work with EDA in strategic areas: integrated air and missile defence (IAMD), loitering munitions, electronic warfare, and the new generation European surface combat vessel (see EDM page 8). These are key capabilities for tomorrow's European armed forces and I hope that these projects will take shape very rapidly now.

#### United we must stand

According to the EU Treaty of Lisbon, the High Representative is not only the foreign minister of the EU, he or she is also in charge of EU security and defence policy. He or she is the one tasked to drive the European

Common Security and Defence Policy (CSDP) with the help of the different structures created in this framework, and in particular the support of the EDA. For five years, I took this part of my role to heart and I am convinced that my successor Kaja Kallas (see below) will do the same.

So to conclude, I believe that to be able to speak the language of power in today's world, we need first and foremost unity and responsiveness. The EU cannot pretend to be a geopolitical power if we do not understand the urgency to act, and to act together as Europeans. Far too often it takes weeks and months to reach a decision, or decisions are simply not taken due to our failure to find consensus. My last call is to work proactively towards more unity and to take decisions quicker. The world will not wait for us. 



**Kaja Kallas is EDA's new Head of Agency.** An Estonian lawyer, politician and former prime minister of Estonia (2021–2024), she made history as the first woman to serve in this role in her country. Her father, Siim Kallas, served as prime minister between 2002 and 2003 before becoming a European Commissioner.

**Head of Agency Kallas has emphasised the importance of investment in defence. On Russia's war of aggression against Ukraine, Kallas said Kyiv's victory was a priority for the European Union. She is a vocal advocate for Ukraine's accession to the EU, describing EU enlargement as a strategic investment in the EU's own stability and future. "In the next five years, we need clear results here," she said in her confirmation hearing for High Representative.**

Born on June 18, 1977, in Tallinn, in what was then Soviet-occupied Estonia, Kallas grew up knowing of her family's harrowing experiences under Stalinist repression. In 1949, her mother Kristi, then only six months old, was deported to Siberia along with her grandmother and great-grandmother as part of Stalin's mass deportations targeting Baltic citizens labeled 'anti-Soviet.' In a moving speech to the European Parliament on March 9, 2022, Kallas recounted how the kindness of strangers helped her family survive. She is married and has three children.

#### Education

**1999:** Earned a law degree from the University of Tartu

**2007:** Completed postgraduate studies at the Estonian Business School

#### Legal Career

**1998–2006:** Attorney at law at Tark & Co

**2006–2011:** Attorney at law and partner at Luiga Mody Hääl Borenius

#### Political Career

**2011:** Joined the Estonian Reform Party

**2011–2021:** Member of the Riigikogu (Estonian Parliament)

**2014–2018:** Member of the European Parliament

**2018:** Elected Chairperson of the Estonian Reform Party

**2021–2024:** Prime Minister of Estonia, the first woman to hold this office



**Jiří Šedivý** has served as Chief Executive of the European Defence Agency (EDA) since May 2020. In a career that included posts as Czechia's Minister of Defence, NATO Assistant Secretary General for Defence Policy and Planning, and Czechia's ambassador to NATO, Šedivý ends his term after five years at the helm of the Agency. He looks back.

## A farewell to arms for one, a call to arms for all

**I**t is often said that we create a new world by sacrificing the old. Little did I expect a global pandemic and the return of full-scale war to Europe – which both marked my mandate – to put an end to old certainties so definitively. Russia has left us in no doubt that the peace dividend of the post-Cold War period, where defence resources could be released for other purposes, is over. Then add China, which has morphed from a trading partner to a systemic rival – plus China supports Russia against Ukraine.

At a time of rising defence spending, the European Union must seize this moment. As the United States pivots towards countering China, the EU should be ready to shoulder more responsibility. This is not just a necessity – it's a test of the EU's long-held ambition of greater independence in defence, in full complementarity with NATO, and which EDA does its utmost to support.

Much has been said about the goal of 'strategic autonomy'. Yes, we must strive to uphold our European values of democracy and rule of law, and be able to protect our citizens. But as we progress, I believe 'operational autonomy' is a better expression of what we seek.

Because firstly, by no means do we wish to turn our backs on the United States, and secondly Europe is faced with multiple crises in our neighbourhood, from the Middle East to the Sahel.

This is not just semantics. As Chief Executive, I signed an Administrative Arrangement between EDA and the U.S. Department of Defense (DoD) in April 2023 to formalise transatlantic defence cooperation.

I trust that the new U.S. administration will continue this enhanced dialogue in areas such as military mobility, for our troops to move swiftly across Europe, supply chain issues, and the impact of climate change on defence.

### Our coming of age

We at EDA are backing up words with actions. From projects worth barely €200 million a decade ago, we are now managing over €1 billion, including EU-funded programmes and projects in Permanent Structured Cooperation (PESCO). Though a relatively small agency, we have in our way, helped address Europe's immediate challenges, none more pressing than the war in Ukraine. From coordinating military testing to helping chart a way ahead on autonomous systems, EDA is at the heart of European defence cooperation.

My EDA team has reinvigorated the EU's defence review, which is now considered the 'State of the Union' on defence (see *EDM page 8*). We are helping to bring together our Member States to collaborate in areas from air and missile defence to a new naval combat vessel.

Other highlights during my mandate at EDA include:

- Buying 155mm ammunition on behalf of Member States for stockpiles and Ukraine
- Transferring the Agency's Multinational Helicopter Training Centre to Portugal
- Training more than 900 personnel from 14 EU Member States to counter improvised explosive devices (see *EDM page 30*)

- Seeing the Multinational Multi-Role Tanker Transport Fleet (MRTT), an EDA-facilitated project, reach full operational capability to provide air-to-air refuelling, cargo transport, and medical evacuation capabilities worldwide
- Establishing the Hub for EU Defence Innovation (HEDI) within EDA
- Striving for more access to finance for European defence companies

EDA has also helped bring Member States together in areas from Low Earth Orbit (LEO) satellite development to cloud-computing technologies. Supporting aeromedical evacuation and jointly procuring satellite communications are other areas of our work. When it comes to green defence, the Agency helps adopt cleaner, sustainable energy models.

I wish I could say this were enough. Still, I believe I have witnessed a 'coming of age' of EU defence since 2020. Twenty years since EDA was established, we are now doing more than ever to help our Member States research, develop, buy and operate the weapons, systems and technologies they need.

As I leave the Agency, I am acutely aware that it will take yet more resources, more cooperation, and the buy-in of European citizens, to fully embrace the challenge ahead. Leaving EDA marks a personal 'farewell to arms' of sorts, but simultaneously, I issue a 'call to arms' for all, encouraging my successor to carry on the mission with vigilance and commitment, underscoring the enduring importance of our collective effort in the realm of EU defence. [▶](#)

# Highlights of Jiří Šedivý's term as EDA Chief Executive



**CARD**  
*November 2020*

EDA proposes the first overview of Member States' plans and programmes



**European Patrol Corvette**  
*January 2021*

EDA begins its support for the European Patrol Corvette project



**HEDI**  
*May 2022*

Hub for EU Defence Innovation (HEDI) is established within EDA



**European Defence Fund**  
*December 2022*

EDA begins managing projects of the European Defence Fund



**Denmark joins EDA**  
*March 2023*

Denmark joins EDA. All 27 EU Member States are now members of the Agency



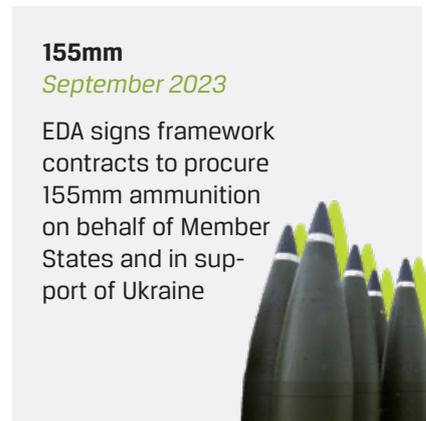
**MRTT**  
*March 2023*

An EDA-initiated fleet of air-to-air refuelling and transport planes reaches full operational capability



**U.S. Administrative Arrangement**  
*March 2023*

EDA signs an Administrative Arrangement with the U.S. Department of Defense



**155mm**  
*September 2023*

EDA signs framework contracts to procure 155mm ammunition on behalf of Member States and in support of Ukraine

**MHTC Handover**  
*November 2023*

EDA transfers its multinational helicopter programme to the Multinational Helicopter Training Centre Sintra, Portugal



**EDA Long-Term Review**  
*May 2024*

Member States cement the Agency at the heart of EU defence with a reinforced mandate



**Joint Projects**  
*November 2024*

Member States sign an EDA scheme to develop critical military capabilities in specific areas





# Teaming up to develop critical military capabilities

Ministers of Defence approved the 2024 Coordinated Annual Review on Defence (CARD) – the EU's 'State of the Union' on defence. The review has found opportunities for EU Member States to develop critical military capabilities together. In a significant development, Ministers of Defence signed letters of intent across four key areas: integrated air and missile defence (IAMD), electronic warfare, loitering munitions, and a combat surface vessel.



EDA Deputy Chief Executive André Denk at the Agency's Steering Board on 19 November, 2024, in Brussels.

**"National efforts, while indispensable, are not enough." So says the 2024 EU defence review. While EU total military spending stands at €326 billion in 2024, equivalent to 1.9% of EU GDP, the sheer scale of modern threats demands a more coordinated approach, the review warns.**

The letters of intent signed by EU Member States in Brussels, though not binding financial commitments, give a political momentum for what could be some of the largest collaborative projects so far. It is not just about spending more; it is about spending together.

For each of the four areas, work is set to develop along several lines, including buying existing weapons together in the short term, and developing new assets jointly in the future. Germany, France and Italy are leading in air and missile defence. Meanwhile, many EU countries have committed to enhancing their electronic warfare capabilities.

Loitering munitions, which can hover over targets for extended periods before striking, have been crucial in Ukraine's defence, and now, EU countries are working together to develop these systems.



**"It's less about imposing what countries should do and more about showing them what's possible if they work together"**



## Art or science? How EDA nudges Member States closer to **joint military projects**

As for the European Combat Vessel, seven EU nations – among them Belgium and the Netherlands – have pledged to develop a next-generation naval ship. This effort, which will begin with harmonising requirements and preparing for joint procurement, aims to have a vessel sailing by 2040.

"The 2024 CARD report emphasises that Europe's defence posture depends on aligning short-term operational needs with long-term strategic goals," says Ralph Briers, Head of Unit, Cooperation Planning in EDA's Capability, Armament and Planning Directorate. "By seizing collaborative opportunities like IAMD, electronic warfare, loitering munitions, and naval power, Member States can strengthen both national and collective security through technology, enhanced interoperability, and sustainable capability development."

*European Defence Matters* sits down with **Stefano Cont**, the European Defence Agency's (EDA) Capability, Armament and Planning Director, to discuss the origins of CARD, and his idea to generate momentum around new joint military projects through letters of intent.

It was Paris, the year: 2016. The defence ministers of France, Germany, Italy and Spain had gathered for a meeting in the format of the 'E4', the four most powerful EU countries, joined by the EU's top diplomat. Was it striking that, in a military world, they were all women? That was certainly on the mind of Italy's then Minister of Defence Roberta Pinotti – and one of the few men in the room, then Italian defence adviser Stefano Cont. "Today, don't say a single word, OK?" Pinotti turned, and smiling, whispered to Cont, he recalls. →

**What made the E4 meeting significant was not just the shattering of the 'glass ceiling' for women at the top political level in defence, but also that it laid the basis for a far-reaching assessment process of Member States' defence planning cycles and capability development.**

"That moment in Paris marked a new chapter in Europe's defence cooperation, which was one of great aspirations and, I will admit, some frustration," says Cont, sitting in his office at EDA, where his military general's jacket hangs on a stand in the corner. Cont says that the rationale for an EU defence review at the political level was simple: that the European Union needed to stop to reflect after steady progress since 2013. Russia's illegal annexation of Crimea in 2014 brought a sharpened focus on the EU's

combined defence capabilities, which were in a weakened state after years of defence spending cuts, according to the early CARD reports.

"It was then German Minister of Defence Ursula von der Leyen, now European Commission President, who was asking for a structured EU MoD (Ministry of Defence) annual review on defence," Cont says. Agreement was unanimous among Italy's Pinotti, Spain's then Minister of Defence Maria Dolores de Cospedal, French Armed Forces Minister Florence Parly and EU High Representative Federica Mogherini, who was also head of EDA.

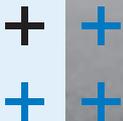
#### Double or nothing

Formally approved in May 2017, EDA concluded a test cycle in late 2018 before kicking off the first full CARD cycle in September

2019, over a period of 10 months. While envisaged as a yearly review, the workload proved best suited to a two-year cyclical approach. For better or worse, the name Coordinated Annual Review on Defence stuck.

CARD took its place in the constellation of EU defence cooperation tools: the EU priorities for capability development, the Permanent Structured Cooperation (PESCO) to plan, develop and invest in shared capability projects – another result of the E4 meetings – and the European Defence Fund (EDF).

From the outset, the goal of CARD was straightforward: identify where European defence interests overlap and foster cooperation. Collaborative opportunities are also crucial. Without them, CARD risks becoming little more than a well-intentioned exercise without measurable impact.



## LOITERING MUNITIONS



© WB Electronics SA

**Versatile systems combining surveillance with precision strikes, proven to have disruptive potential in recent conflicts.**

So far, 17 Member States have signed letters of intent to buy these systems together in the short term, and to work on their further development over the medium to long term. They will also work to define what loitering munitions are, as well as conducting joint training, exercises, and testing.

Loitering munitions are gaining traction among Member States. "The war in Ukraine has demonstrated the diverse use of these systems, from destroying tanks to targeting critical infrastructure," says Giuseppe Dello Stritto, Head of Unit Land and Logistics at EDA. However, the technology's novelty and lack of standardisation pose challenges for procurement and integration.

Member States are now discussing both urgent needs and longer-term strategies for loitering munitions. "Some Member States are planning acquisitions soon. But without coordination, European industries might lose out to mature technologies from non-EU countries," Dello Stritto says.

Loitering munitions allow unmanned navigation, offering flexibility in combat. "Their ability to loiter over targets, gather intelligence,

and engage with precision makes them unique to support ground forces from the air," says Dello Stritto. Yet, defining and integrating these systems remains complex. "Unlike artillery shells, there is no established doctrine or taxonomy for loitering munitions," he adds, emphasising the need for training, testing, and concepts of operations that everyone agrees to.

Efforts are also underway to strengthen European industry. While companies such as Germany's Rheinmetall are already in the market together with Israeli firms, EU officials want to see a robust European supply of weapons and allow the growth of home-grown assets from smaller companies. Helsing, a defence company specialising in artificial intelligence, has already delivered drones to Ukraine's armed forces. "Without a lot of EU countries placing orders, European companies may lack incentives to prioritise these capabilities to be produced at scale," Dello Stritto says.

The goal of EDA's letters of intent are clear, Dello Stritto says. "We want to agree what Member States' militaries need on the ground, then look for the proper technology and European producers, so as to give us a European edge in the new field."

But the initiative's early cycles taught EDA's officials hard lessons. EDA project officers recall the futility of trying to push fully formed ideas onto Member States. "We went with a list of pre-selected ideal projects and it didn't work," Cont says. EDA had to recalibrate, moving from asking for governments' agreement to suggesting possibilities – soft pitches instead of firm proposals.

#### EDA: No Ace of Spades

Perhaps the most significant lesson from the CARD initiative has been that cooperation is as much an art as a science. For all the data-crunching, assessment, and diplomatic caution, success lies in building a shared understanding of what each country brings to the table. EDA cannot seek radical shifts in national priorities. Instead, the Agency presents a new perspective on familiar interests, nudging countries to see shared goals through a lens that would work for each of them individually.

Such efforts must constantly balance between a strategic vision and the finer points of politics. The insights drawn from this complex evaluation have been instrumental. It has allowed EDA to go to individual Member States not just with pre-selected project ideas – often a doomed approach – but with targeted, well-researched recommendations that anticipate a country's own self-interests.

Much of EDA's work with CARD has hinged on deep, interpretive reading of national policy. A patchwork of national defence documents, NATO assessments, and PESCO goals have provided the raw material. Member States might also have multi-year plans, each a 400-page document, written for parliament. "If you know how to read them, it becomes a map to that country's ambitions," Cont says.

EDA has learned that the challenge is not to obtain a 'yes' from everyone immediately; it is to keep doors open long enough for collaboration to feel inevitable. And while NATO had its own method of assigning targets to its members, the EU's defence cooperation remains a different creature. "NATO works in a totally different way," Cont notes. "They set up their requirements, divide them, and assign targets to countries. We in the EU work from the bottom up, what defence ministries want to do."

Of course, the EU lacks NATO's top-down authority and must rely on →

## INTEGRATED AIR AND MISSILE DEFENCE (IAMD)



**Essential for safeguarding Europe's infrastructure, urban areas, and forces from threats such as ballistic missiles, cruise missiles, and drones.**

So far, 18 Member States have signed a letter of intent, declaring their intention to collectively fill urgent capability gaps in the short term by procuring counter-unmanned aerial systems (C-UAS), ground-based air defence (GBAD) and ammunition. In the medium term, Member States aim to develop technologies to counter swarms of drones and high-velocity threats. In the long term, they plan to build a robust missile defence architecture.

A missile strike on a city in the European Union is still a distance prospect. But current air and missile defence capabilities, even those integrated within NATO, fall short of offering comprehensive protection for critical infrastructure and do not cover all of the EU. Ukraine has shown that building air defences quickly is possible, but it is an expensive undertaking. For Europe, GBAD costs billions of euros, making large-scale investment a daunting prospect for many nations.

Defence is also sovereign, with EU countries maintaining control over strategic assets. Yet, as the threat escalates, public support for better European defence integration has grown, prompting renewed discussions on common air defence.

In 2023, Poland and Greece urged the EU to deepen collaboration and funding for air defence, highlighting the need for joint procurement, standardisation, and system interoperability to strengthen NATO and EU security. Germany has proposed the European Sky Shield Initiative (ESSI), aiming to create a robust, Europe-centred missile defence architecture, but France has reservations about a heavy reliance on U.S. and Israeli technology.

Europe will need a multi-layered air and missile defence, encompassing both low- and high-altitude defences, as well as battle management, communications, command and control, early warning sensors, radars, and a range of interceptors.

To take forward the work in a coherent way, the EDA's letters of intent aim to promote working together, as well as interoperability, and pool resources at the EU level, using frameworks such as the Permanent Structured Cooperation (PESCO). In doing so, Europe would fortify its resilience against geopolitical risks and improve its capacity to act, alone if necessary.

"EDA's letter of intent offers a general, cooperative approach that would allow Member States to build architecture to respond to all kinds of air threats and over all time horizons," says EDA's Chief of Staff Etienne de Durand.

## ELECTRONIC WARFARE



**Electronic warfare, at its core, involves manipulating the electromagnetic spectrum to disrupt, degrade, or redirect enemy signals – whether they be radio waves, infrared emissions, or radar transmissions.**

So far 14 Member States have signed letters of intent to jointly improve their capabilities by buying equipment together, establishing data-sharing platforms, and developing a common doctrine, as well as training, exercises, and facilities. In the long term, they will focus on developing future systems, particularly for jamming and counter-jamming.

In Ukraine, an invisible conflict unfolds daily across the electromagnetic spectrum, as Russian efforts to jam Ukrainian drone signals clash with Kyiv's successes in crippling Russia's own electronic warfare systems.

The stakes are high: securing communications against jamming or deception is critical, as are support operations that enable precision targeting, destructive strikes, or intelligence gathering. Signals intelligence, too, is part of the contested electromagnetic arena.

But in European defence cooperation, electronic warfare capabilities have been underexplored, says David Byrne, Head of Unit Information Superiority at EDA. "For a long time, command-and-control systems and cyber capabilities dominated the agenda. Now priorities are shifting. EDA is helping Member States with the complexities of what is a very broad field," he says.

Aiming to act as a catalyst, the EDA's initial steps have been to gauge the interest of Member States and narrow the focus. Areas such as training, platforms, systems, and doctrine are now under discussion. This momentum has set the stage for further work to refine priorities and identify areas for collaborative development.

While some EU countries, such as France and Germany, have relatively advanced electronic warfare systems, others, particularly smaller nations, lag significantly. Certain states might operate aircraft without modern jamming capabilities or rely on outdated systems for maritime escorts. The goal is not only to overcome these shortcomings but to ensure interoperability by buying assets together, and in the longer term develop them together.

"Defensive capabilities are the focus," Byrne says, underscoring that offensive electronic warfare remains the purview of individual nations.

Looking ahead, the project is divided into short-term and medium-to-long-term objectives. While immediate efforts will focus on procuring existing technologies, the long-term vision involves developing next-generation systems like standoff jammers and advanced Intelligence, Surveillance and Reconnaissance (ISR) platforms.

### Possible areas of collaboration

- Common Electronic Warfare Training (*Short to Medium Term*)
- Procurement of Electronic Warfare, Intelligence, Surveillance and Reconnaissance (ISR) and Tactical Communication Systems (*Short to Medium Term*)
- Joint Development of Electronic Warfare Jamming Systems (*Short to Medium Term*)
- Standardised EW Doctrine (*Short to Medium Term*)
- Escort Support Jamming (*Medium to Long Term*)
- Standoff Jamming (*Medium to Long Term*)
- Communications Jamming (*Medium to Long Term*)

consensus-building. For EU defence collaboration to work, it has to be attractive rather than mandated, offering Member States a voluntary stake in collective security. "It's less about imposing what countries should do and more about showing them what's possible if they work together," Cont says.

### A full house

Cont is also clear about what constitutes really working together. "If you're thinking about collaboration in the short term," he says, "you can just reduce it to joint procurement – buying the same product together." But real cooperation, he argues, is more like building a house together, requiring joint planning, aligned objectives, and a shared sense of purpose that persists over time.

That is clear in the need for a cohesive missile defence architecture in Europe. If realised, EDA would not merely support Member States' one-off projects, but could "achieve a structure capable of addressing bigger problems, to foster projects of real significance," Cont says.

Achieving this European vision, however, will require joint planning, a coordination of both timing and financial commitment among Member States.

And this is where cooperation often stalls. Countries operate on different timetables and financial constraints. The new CFM mechanism could help. (*See EDM page 29*)

As Cont puts it: "It's like a group of friends planning a trip – if one wants to travel in August and the other in February, it's not going to work." Continuity between governments and policies is also critical for any coherent strategy. "For defence capabilities, there can't be gaps. You can't have an air force that stops functioning for five years and then trying to buy it new aircraft," Cont says.

Ultimately, cooperation could help European Union defence better reflect the bloc's economic weight. "The EU's defence budget is one-third of the United States, but do we have one-third of American capabilities? If the answer is yes, then EDA can close tomorrow because we will have reached our goal." 

For the full CARD report, please go to: [eda.europa.eu/what-we-do/EU-defence-initiatives](https://eda.europa.eu/what-we-do/EU-defence-initiatives)

## THE EUROPEAN COMBAT VESSEL



© EUNAFVOR

**A modular, multipurpose warship vital for Europe's maritime security and ability to address overseas conflicts, given its reliance on sea trade.**

So far, seven Member States have signed letters of intent to develop the next generation of vessels using a systems-to-hull approach. They plan to agree on what they require the vessel to do, develop a business case, and prepare to purchase the vessel together by 2040.

The development of the European Combat Vessel (ECV) is a major undertaking aimed at creating a next-generation, multipurpose naval platform.

Unlike current vessels, the ECV should be able to address multidimensional threats of the mid-21st century, integrating new capabilities to defend against submarines, cyberattacks and unmanned systems. With an anticipated operational debut in the 2040s, the ECV will be a manned naval vessel, although its design is still to be agreed upon.

"I see right now in terms of a frigate-size, or destroyer-size platform," says Elvira Bermudez, Project Officer Naval Combat and Maritime Interdiction. "Countries around the world have plans to develop the next-generation frigates, but it is difficult to plan and develop for the

challenges that you're going to be facing in the future. And 20 years ago, we did not envision what we're seeing right now. If you look at contexts like the one we have in the Red Sea, if you apply the lessons identified from Ukraine to a sea context, we need innovation in naval design."

The ECV will differ significantly from traditional vessels, prioritising a modular design so that the new class of ship can meet varied operational needs, from protecting critical infrastructure to countering advanced undersea threats, and for specific operational environments, whether in the Mediterranean, North or Baltic seas. The ECV is also likely to rely on existing EU defence projects, including PESCO initiatives, for its design.

The ECV also represents a departure from smaller, regionally focused vessels like the European Patrol Corvette under development after work with EDA. Such corvettes are primarily tasked with littoral defence. Instead, the ECV could, for instance, ensure the security of sea lines of communication and project power globally.

"For us, the ECV is more than a ship – it is the way we go forward together in preparing for European naval warfare in the future," Bermudez says. "That reflects the EU's commitment to autonomy and resilience."

### The EU's defence review 2024 finds that:

- › Defence spending is rising, projected to have increased by more than 30% in 2024, but that this alone will not be enough to prepare the EU for high-intensity warfare.
- › EU countries need to simultaneously address short-term operational needs and long-term strategic priorities by investing in technology while ensuring sufficient production of reliable systems for sustained, high-intensity operations while maintaining long-term planning.
- › EU countries will need to prioritise investment in land, air, and maritime capabilities for high-intensity warfare. Key areas include replenishing stockpiles, modernising defence systems, and enhancing cybersecurity, interoperability, and strategic enablers like satellite communication.
- › The EU needs to collaborate in defence procurement and research to bolster the European Defence Technological and Industrial Base (EDTIB), not always purchasing abroad.
- › Ministries of Defence will need to better align their national defence plans with EU and NATO priorities, and use EU frameworks such as PESCO and the collaborative opportunities. This would enhance efficiency, foster innovation, and ensure the EU's strategic readiness for crises.



**State-owned Polish Armaments Group PGZ** is the main partner of the Polish military, providing assets, weapons and equipment for all branches of its armed forces. With more than 14 years of European defence experience, Jan Grabowski joined PGZ's management board in June 2024, having been European missile-maker MBDA's General Delegate to Poland since 2018. From his Warsaw office, Grabowski talks to *European Defence Matters* about Polish-made radars, learning from foreign contractors, and balancing a transatlantic and European approach to defence collaboration.

# PGZ: Homegrown innovation and strategic alliances in defence of Poland, Ukraine and Europe

**I**n the world of rock music, every fan has an opinion on 'the biggest band you've probably never heard of'. In defence, PGZ might be the most successful European armaments company you've probably never heard of.

And perhaps with good reason. As a conglomerate with nearly 60 firms under its roof, PGZ is not an easy company to digest, even though it produces almost everything that the Polish armed forces need, from equipment and ammunition through to missiles and frigates.

What's more, management board member Jan Grabowski says, PGZ was established a decade ago – conceptually in 2013 and operationally from 2014. It has had its present structure since then.

As a state-owned enterprise, PGZ's main client is the Polish Ministry of National Defence, which accounts for approximately 80% of annual revenue. But it is not just about Poland's defence; PGZ aims to be a strategic partner across Europe, seeking a balance between national defence needs and growing its export market.

"We do export, and as the newly appointed management board, one of our objectives is to increase the proportion of revenue from international markets," says Grabowski, who joined the company in June from European missile-maker MBDA.

With war quite literally on the Polish border, Poland has become a significant spender in Europe, committing 4.7% of GDP to defence in 2025. This funding, more than double the 2% NATO guideline, means PGZ has strong demand from its main client to equip Polish forces and extend support to Ukraine, which Grabowski notes as a top priority.

PGZ focuses its cooperation with Ukraine on supplying and maintaining their equipment, with its own Krab self-propelled howitzers being at the top of their list. PGZ also handles repairs on-site in Ukraine, while complex overhauls are conducted in Poland. The combat experience with PGZ-built ordnance, including, but not limited to Krab SPHs provides valuable insights for future upgrades, he says. PGZ aims to support Ukraine's defence needs further but keeps specific details confidential due to the conflict.

## Combat readiness, air defence shield

For Grabowski, who oversees PGZ's maritime division, whether it is 4.7% or 7%, such a level of spending is a sign of the times and a must for all European countries to raise their investment levels in defence.

"Like many EU countries, a substantial portion of our budget is dedicated to supporting Ukraine and bolstering our own defences," he says. "We are providing resources to our neighbour, from rifles and





... we endeavour to rebuild the Polish defence industry and develop national competences in the armaments sector

machine guns to highly complex systems such as the Krab self-propelled howitzers or Rak mortars."

Poland has indeed initiated an unprecedented defence buildup, purchasing advanced U.S. systems for security and NATO alignment.

### "Looking at the history of Europe, it is not that the threats go away. They are just silent"

This includes a \$4.6 billion contract for 32 F-35A jets, \$10 billion for 96 Apache helicopters, and hundreds of Abrams tanks. These acquisitions support rapid interoperability with U.S. forces, as well as immediate combat readiness.

But many assets are made in Poland. One of PGZ's projects is a missile defence shield over the central European country. "It's heartening to see elements of this defence system already operational, including the first batch of the launchers that are fully integrated and deployed. The progress here is very much in line with Poland's commitment to a secure Europe."

Grabowski adds: "Our short-range air defence radars are entirely Polish made, which underscores our technical capabilities."

This radar expertise complements PGZ's missile systems, including Man-Portable Air

Defence Systems (MANPADS) and Spike anti-tank missiles, produced in partnership with Israeli firms.

To ensure Poland's air defence remains robust, PGZ is also collaborating on integrated systems. PGZ partners with MBDA UK, as well as Northrop Grumman, Raytheon, and Lockheed Martin of the United States, to create the multilayered air defence system over Poland.

"We're producing launchers for the Patriot system and working with MBDA on a short-range system that merges European technology with Polish innovation," Grabowski says. These partnerships are essential to achieving a multi-tiered air defence shield, integrating

three layers of crucial area denial capabilities."

Poland also aims to build a self-sufficient ammunition production. "Poland's production capacity – specifically in the manufacturing of 155mm artillery shells – has been pushed to its limits and we're focused on multiplying our potential in this area," Grabowski explains.

According to a legislative bill published in November 2024, in which the Polish government is planning to invest 3 billion zlotys (€695 million) to boost ammunition production, with a focus on expanding large-calibre production. In fact, ammunition production is one of PGZ's most intense areas of focus. "Manufacturing shells is complex," says Grabowski, who also worked at Nexter Systems earlier in his career. →



© Wojciech Król

PGZ's stand at the 31st International Defence Industry Exhibition, on 5 September, 2024.



A PGZ photo shows a SA-35 anti-aircraft gun. SA-35 is a 35mm automatic gun mounted on a truck chassis, designed entirely by Polish engineers.



As the European Defence Agency (EDA) 155mm joint procurement efforts have shown: "It's not just about the casing; we're talking about propellants, explosives, fuses."

#### Peace in 24 hours?

Almost three years of war in Ukraine have galvanised Poland perhaps like no other country. It has given refuge to millions of Ukrainians fleeing the conflict. But not all nations share the compelling sense of a cause. What if, as incoming U.S. President Donald Trump pledged to do as an election candidate, the Ukraine war is over next year?

Grabowski says the EU's task is to be ready for any scenario. "Looking at the

history of Europe, it is not that the threats go away. They are just silent," he asserts.

Some NATO officials have suggested that within five to eight years, Russia could be militarily prepared to launch an attack on allied countries, assuming it successfully rebuilds its forces. Moscow rejects any notion that it would contemplate an attack on NATO.

PGZ is certainly not hedging its bets. Poland's largest defence expo, MSPO, held annually in Kielce, has become a major platform for PGZ to showcase its innovations. This year, the SA-35 anti-aircraft gun and the Heron 6x6 armoured vehicle featured prominently.

The SA-35 is a 35mm automatic gun mounted on a truck chassis, designed entirely by Polish engineers. "It's fully Polish, right from the research and development to final assembly, and it's intended as an integral part of our layered air defence system," Grabowski says.

With a role alongside the U.S Patriot systems and Polish NAREW missiles, the SA-35 illustrates Poland's ambition to be self-sufficient in its critical defence systems, he adds.

When it comes to the Heron: "The vehicle's design reflects lessons from the war in Ukraine. It's based on a chassis from Czechia, and the internal design has been tailored to meet our unique needs. I certainly think it could become one of our export products."

#### All for one, and all for ... Europe

On NATO's eastern flank and with recent memory of life under Soviet rule, Poland is keenly aware of the threat to the east. NATO membership and its close bilateral relationship with the United States are paramount for Warsaw.

**"In times of conflict, a strong domestic defence industry is essential. The EU has realised this and we are moving to shore up our capabilities"**

Still, Grabowski believes PGZ can work within Poland's transatlantic approach to further EU initiatives to strengthen the European Defence Technological Industrial Base (EDTIB). "Missile-maker MBDA is proof that European companies can consolidate and successfully collaborate," he says.

PGZ has extended this collaborative approach to its maritime division, where it is working on new frigates in cooperation with Babcock from the UK, even if Grabowski concedes Britain is no longer in the EU. He, like many others, rues Britons' decision to leave.

The Arrowhead 140 frigates, based on the UK's Type 31 design, are being constructed in Polish shipyards. "These frigates will have a Polish identity but benefit from British shipbuilding legacy and expertise," says Grabowski.

Similar partnerships exist with French and Dutch companies, where PGZ integrates radar technology from Thales branches in the UK, France and the Netherlands to enhance the reconnaissance, recognition, tracking and targeting capabilities of its products.

Poland's defence ambitions are tied not only to equipment but also to skills and knowledge transfer. "Every time we engage in a partnership, we ensure there's a technology transfer component. Our collaborations with South Korean, British and U.S. partners are structured so that we don't simply buy equipment; we acquire the know-how to maintain and improve it," Grabowski asserts.

"In times of conflict, a strong domestic defence industry is essential. The EU has realised this and we are moving to shore up our capabilities," he says.

### Six types of tank

For Grabowski, building a European defence framework requires more than funding and equipment. "EDA, the Visegrad Four and the Weimar Triangle of France, Germany, and Poland, facilitate cooperation," he says. "But we need political will."

During his time with Nexter, Grabowski witnessed French efforts to involve Poland in the future tank development project. He believes cooperation is crucial, not only for cost-sharing but also for strategic unity. "Europe has six different types of battle tank, and it's clear that less duplication could really enhance our collective strength. Centralised command systems on different tank systems would help enormously."

A united European defence capability is the ideal, but as Grabowski has pointed out, it requires political and industrial commitment. "Even outside of the EU, our partnership with the UK on frigates started when Britain was an EU member. Such partnerships must transcend politics if Europe is to stand strong." 



Polish armed forces participate in NATO's Steadfast Defender-24 exercise on 5 March, 2024.

### PGZ at a glance

- > PGZ is Poland's primary defence contractor
- > Supports Ukraine's defence, supplying and maintaining the Krab howitzers
- > Plays a central role in building Poland's multi-layered air defence systems
- > Manufactures launchers for the Patriot system and collaborates with European and U.S. firms on short-range air defence solutions
- > Domestic ammunition production is a short-term major focus area
- > Has recently developed the SA-35, a 35mm automatic gun on a truck chassis
- > Its Heron is based on a Czech chassis, but tailored for Polish needs and for export opportunities
- > Partners with Thales for radar technologies to enhance its products' surveillance and detection capabilities

- Established in 2001, EUMC directs all military activities within the EU framework
- EUMC gives military direction to the EU Military Staff (EUMS), which plans and executes EU missions
- EUMC also provides military advice and makes recommendations directly to the Political and Security Committee (PSC), which is made up of EU ambassadors who are specialised in defence and security

## Guiding the EU's shift in military posture for an unstable world

**T**he phrase "a civilian power in an uncivil world," generally attributed to Dutch political scientist Alfred Pijpers, captures the view in the 1980s and 1990s that the European Union was a force for stability through diplomacy, aid and economic cooperation – not hard power.

With his long career in both Austria and in international EU-led operations, General Robert Brieger remembers a time when even walking between EU institutions in military uniform was ominous. "But now we are part of the system," says the highly decorated general whose military advice is regularly sought by the EU's leadership.

Having served in command roles with Austria in NATO's Kosovo Force (KFOR) and with the EU in EUFOR Althea in Bosnia and Herzegovina, Brieger has, perhaps more than many in the defence community, lived the evolution of the EU's international role. With a military career that began in 1975, he witnessed the breaking of a long-standing taboo that the EU, as a trading bloc, should stay out of defence.

Nothing, however, marked a turning point quite like Russia's war of aggression in Ukraine. "We've had to learn that conventional warfare in Europe is back," he says from his office in Brussels' European Quarter. "European institutions and decision-makers have had to acknowledge that there is a new challenge which demands the full attention of the Union."

### Shelter from the storm

After decades of EU military, police and border assistance missions from the Balkans to Sub-Saharan Africa, not to mention

anti-terrorism operations, the question is now inevitably: should the EU also be doing territorial defence? French President Emmanuel Macron has been a long-standing advocate for Europe's collective defence and "strategic autonomy."

Brieger is adamant that NATO is, and will remain, the cornerstone of European defence. But, there is an important role for the EU, he believes, whether that is in the form of a 'European Defence Union' as suggested by European Commission President Ursula von der Leyen, or under some other name.

The Coordinated Annual Review on Defence (CARD) certainly points to a shift in posture (see EDM page 8) highlighting the "resurgence of protracted, high-intensity wars with operations spanning all domains." The last Capability Development Plan (CDP) revision took place in 2023, leading to the definition of EU priorities, which include:

- Next generation, multi-layered air and missile defence
- Space services for better situational awareness
- Full spectrum cyber defence
- Military mobility and strategic air - and sealift capabilities
- Autonomous systems and AI
- Chemical, Biological, Radiological, and Nuclear (CBRN) defence

"There is no NATO army, there is no EU army. We have a single set of forces, and Member States – NATO allies or not – are sovereign," says Brieger. "So by working together in the EU, by enhancing our



**General Robert Brieger** has been serving as the Chairman of the European Union Military Committee (EUMC) since May 2022. Before handing over authority as Chairman in May 2025, the EUMC will advise EU ambassadors at the Political and Security Committee (PSC) to declare the new EU Rapid Deployment Capacity operational. After half a century in the military, General Brieger sits down with *European Defence Matters* to discuss the war in Ukraine, changing U.S. priorities and the necessary shift in the EU mindset.



General Brieger chairs a meeting of the European Union Military Committee in May 2023.

capabilities, our infrastructure and our readiness, we contribute to European defence, including territorial defence. Given the risk of conventional attack against the continent, then we need both the EU and NATO to be ready to secure our democratic way of life."

At a time of growing great power rivalry, few would disagree that the world is more unstable and dangerous. Russia's war in Ukraine, Iranian missile strikes and the Hamas attack on Israel all highlight instability near the EU's border.

Authoritarian regimes across the globe are pushing aggressive policies worldwide, using political, economic, and military power – along with disinformation and cyber attacks – to undermine democratic societies.

The elected U.S. President Donald Trump could test NATO's unity.

"We don't yet know what incoming President Trump's new policies will be, but we know that U.S. priorities lie not only in Europe," Brieger says. "It's an additional incentive to do more in Europe in a more cooperative way with strategic autonomy."

Has there been a shift in the European defence mindset, after decades of relying on the United States for European protection? "I am not sure if it has been fully adopted

across all areas of government, but the process has clearly begun since Russia's aggression against Ukraine. There are many other pressing issues, such as the economy, healthcare, and social demands. But security must be prioritised, as without it, nothing else can function."

**"It can be challenging. You need partners to be successful by fostering the EU's own autonomy"**

#### Military diplomacy, a tool of statecraft

Brieger concedes that even with the momentum created by Russia's invasion of Ukraine, it has not been easy to act swiftly as Chairman of the European Union Military Committee (EUMC).

"My role is to provide advice and expertise; EUMC is an advisory body representing the national chiefs of defence," Brieger says. "It can be challenging. You need partners to be successful by fostering the EU's own autonomy."

With all major decisions requiring unanimity, each military representative must return to their home capital to negotiate support from their political masters, which complicates reaching timely agreements. "We

are a union of independent nations with diverse interests, and yet the crises we face demand a strong, unified European response."

Brieger, as former chief of defence in Austria before his assignment as Chairman of the EUMC, knows full well that each country will defend its national interests "The highest art remains: finding a viable compromise – for everyone".

Following Russia's invasion of Ukraine, European countries have allocated an unprecedented amount of military support to Kyiv over the last three years. The EU Military Assistance Mission in support of Ukraine (EUMAM Ukraine) demonstrates that the EU has been able to act decisively, training more than 65,000 Ukrainian soldiers so far.

But despite directly funding arms through the European Peace Facility for Ukraine, questions for the EU remain. Should the EU train Ukrainian soldiers directly in Ukraine? Should the EU have first-hand contact with Ukrainian commanders through a special liaison cell in Kyiv? How can the EU become a more capable and stronger ally in supporting Ukraine?

"The EUMC handles all military activities within the EU framework, which means everything from planning to actually running missions. So we've got to be able to take quick decisions," he says. →

## The EU Rapid Deployment Capacity



The first live exercise (LIVEX) of the Rapid Deployment Capacity (RDC) took place 16-22 October 2023, in Spain. Nine countries (Austria, Spain, France, Hungary, Ireland, Italy, Malta, Portugal and Romania) contributed with 2,800 military personnel, equipment, and strategic enablers.

# Fast, but not furious

**The Strategic Compass is an ambitious plan to reinforce the EU's security and defence policy by 2030. Within the Compass, the EUMC and the EUMS have had the major task of:**

- Establishing a EU Rapid Deployment Capacity (RDC) of up to 5,000 troops for various crises
- Strengthening the Military Planning and Conduct Capability (MPCC) to take on command and control (C2)
- Conducting regular live exercises on land and at sea

More than two decades after EU leaders sought to set up a 50,000-60,000-strong force – the Helsinki Headline Goal – the RDC is the most concrete EU effort to create a deployable, standalone military force to intervene in a range of crises, not relying on U.S. assets.

The RDC is set to combine EU Battlegroups, where a 1,500-strong force is on standby for half a year, with logistical support across all the domains, creating a joint force capable of responding to crises outside Europe. The RDC has five generic scenarios:

- Initial Phase of Stabilisation
- Rescue and Evacuation
- Military Support to Humanitarian Assistance and Disaster Relief
- Conflict Prevention
- Peace Enforcement

The two battle groups stand by on a five-day and on a 20-day readiness. For a specific mission scenario, the right force will be based on these operational structures, reinforced through enablers and modules as required.

Though 5,000 troops may seem limited, the RDC is designed for initial responses, with follow-up forces needed for longer engagements.

"When it comes to operations, if there's a commitment of more than 60 days, you will have to have a follow-on force. So, the RDC is foreseen as a first responding mechanism," General Brieger says. "Then European armed forces (EU RDC) would need a follow-on EU force, or it could be a United Nations force, depending on the situation."

Brieger expects the PSC to declare full operational capability in early 2025.

### Use it or lose it?

NATO has its spearhead force: the Very High Readiness Joint Task Force (VJTF) that can be deployed most rapidly. Brieger says he knows both the EU and NATO must avoid duplication. However, both organisations have their remits, too. "In the case of an evacuation of EU citizens, it could be a clear task for the EU RDC, rather than NATO."

The question remains whether the new deployment capacity will be more successful than the EU Battlegroups, which have been operational since 2007 but never deployed.

Brieger is hopeful because the deployment capacity should benefit from some shared European financing. He is also sanguine. "The success of the RDC depends on its use, to underline Europe's true capacity," he says. "Member States do know that this is their tool to act. I am sure we will not be afraid to use it in future." [K](#)

# REACTION FORCE

## EUROPE'S EVOLVING RAPID DEPLOYMENT CAPACITY

### OPERATIONAL SCENARIOS

#### INITIAL STABILISATION

Establishing control and stabilising regions in crisis

#### RESCUE & EVACUATION

Facilitating safe evacuation of civilians, particularly EU citizens

#### HUMANITARIAN & DISASTER

Military support to humanitarian assistance and disaster relief

#### CONFLICT PREVENTION

Preventing escalation of tensions into armed conflict

#### PEACE ENFORCEMENT

Ensuring adherence to peace agreements through military presence

### COMPOSITION

# 5,000 TROOPS

incorporating EU Battlegroups, which are 1,500-strong forces maintained on standby for six months. The force will be modular, **including land, air and maritime components, as well as strategic enablers.**

### READINESS INTERVALS



**Rapid Response**  
20 days



**Express Response**  
10 days



**Emergency Response**  
5 days



**Mykhailo Samus, head of the New Geopolitics Research Network**



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Mykhailo Samus is head of the New Geopolitics Research Network, an independent, nonpartisan think-tank. With over two decades of experience in the media, as well as international relations and defence analysis, Samus also served 12 years in the Ukrainian armed forces. In October 2024, Samus hosted a panel at Kyiv's DFNC2 International Defence Industries Forum, an event bringing together the world's leading defence companies to strengthen the development of the Ukrainian defence industry. He talks to *European Defence Matters* about why investing in Ukrainian armament production is less politically sensitive than sending weapons.



# "Let Ukraine build the missiles with EU money"

**EDM: Before Russia's unjustified war of aggression against Ukraine, what was the level of industrial cooperation between Kyiv and European countries?**

Before the conflict, there were initiatives to build industrial ties between Ukraine and Europe. For instance, France's DCNS (now Naval Group) collaborated with Ukraine on the Corvette programme from 2007, sharing development with European countries such as Italy, Germany and the Netherlands. Companies like MBDA and Thales were involved, and it made for a substantial partnership. But this ended when the pro-Russian president, Viktor Yanukovich, took office and halted the programme in 2010. Other efforts included plans to modernise Ukraine's Mi-24 helicopters with France's Safran. While there was intent, sadly many projects failed to progress.

**EDM: Since Russia's invasion, has it become easier for Ukraine and Europe to collaborate on industrial projects?**

Definitely. Cooperation has strengthened. Previously, Ukraine's political

instability, Europe's defence budget cuts after the 2008 financial crisis, and competing defence priorities threw up all sorts of barriers. Some European countries even maintained defence exports to Russia.

Ukraine's Administrative Arrangement with the European Defence Agency (EDA) in 2015 only got so far, as the Europe Union had a limited focus on Ukraine, compounded by fragmented defence markets. Ukraine was also seen as a competitor. At the time, Ukraine primarily exported arms to non-European markets, worth around \$1 billion annually.

**EDM: So, what has changed?**

Since the illegal annexation of Crimea in 2014, and especially since February 2022, the EU has embraced Ukraine as a partner and as an ally. If you look at Ukraine's expertise in drone technology, that's proven invaluable. This year, Ukraine produced over a million drones – soon to be four million in a year – including thousands of long-range types used in strategic operations against



A Ukrainian soldier operates a Leopard tank during a training course in Świętoszów, Poland, in April 2023. Ukraine is focusing on repairs of essential battlefield equipment, such as Leopard tanks donated by Germany. Croatia is set to send more.

© NATO

Russian assets. Ukraine's knowledge of electronic warfare, tested in real combat, is a valuable asset that it now shares with European partners.

Then there's Ukraine's tactical warning system, Delta. Delta enables real-time battlefield data sharing via a secure, cloud-based platform accessible to soldiers through Starlink or military internet setups. This innovation has reshaped battlefield awareness, and Ukraine is prepared to share this experience with European defence industries.

**EDM: How would you describe the current collaboration between Ukraine and European countries?**

The collaborative atmosphere has been incredibly productive. We've had two International Defence Industries Forums. With the second forum in 2024, building on last year's inaugural event, you can see how it has moved from exploratory talk to real projects. European, Ukrainian and North American producers have gathered, engaging in real discussions about overcoming specific challenges. For instance, the Kyiv General Staff is engaged in repair-and-maintenance programmes, focusing on battlefield-essential equipment such as Leopard tanks and Panzer Howitzers. Additionally, joint ventures for ammunition production are underway to meet Ukraine's very pressing needs.

**EDM: What specific outcomes do you expect from this collaboration? Will there be joint EU-Ukraine arms, or is this more about EU financing for Ukrainian production?**

I'd say the Industries Forum initiative is clearly focused on production, combining EU resources with Ukrainian capabilities. You know, rather than facing delays in sourcing equipment, some European countries find it more effective to invest in Ukrainian facilities that can produce systems quickly. With funds from Denmark, a Ukrainian plant has swiftly produced 18 Ukrainian self-propelled Bohdana howitzers at a speed that European facilities have not been able to match.

Similarly, Ukraine's Stugna anti-tank missiles and Ukraine-made Neptune cruise missiles have proven to be truly cost-effective alternatives that can be produced locally with European investment. Maybe that's a better way for Germany, say, to invest. Maybe it is less politically sensitive than sending German Taurus missiles to Ukraine. I really believe more opportunities lie in joint ventures producing European-designed equipment within Ukraine. When it comes to the urgent need for maintenance and repair, Rheinmetall is already establishing projects in Ukraine, making repair logistics faster and more practical.

**EDM: Trust is always an issue in sensitive defence investments. Ukraine has also scored poorly in corruption perception rankings in the past. Does corruption factor into European partners' concerns?**

Trust is indeed a factor, though a bigger issue is in fact the raw material shortages for ammunition production. Many nations are ramping up production, which has strained global supply chains. Both Europe and Ukraine need reliable access to critical materials, as production facilities often face bottlenecks due to these shortages.

Concerns about corruption were actually absent at the last industry forum. Ukraine's defence industry has become more transparent, and when you are dealing directly on a company-to-company basis, you are not relying solely on government channels. I think this approach has fostered

trust and helped coordination. What's more, Ukraine's Ministry of Digital Transformation has introduced the collaborative platform Bravel, reducing bureaucratic obstacles in procurement. Challenges do remain, especially with annual budget approvals that can delay domestic contracts, but I'd say that these impact foreign partnerships much less.

**EDM: Do you expect an impact from incoming U.S. President Donald Trump's more protectionist agenda?**

I think it will be even more important to develop cooperation between European and Ukrainian defence industries, given possibly negative developments stemming from new U.S. policies.

**EDM: Finally, do you think there should be Ukrainian ties to EDA?**

Absolutely. EDA and European defence would benefit. The Agency typically focuses on long-term projects, while Ukraine's needs, for a country at war, are immediate, especially in areas like drones and electronic warfare. So the battlefield in Ukraine serves as a testing ground for defence innovations, necessitating constant adaptation to counter electronic interference.

One example is how Ukraine has developed cheap, First Person View (FPV) drones with a video feed, built from scratch. Ukrainian forces adapt these drones' communication frequencies on a daily basis to counter Russian jamming. Another example is that Ukrainian engineers created a kind of FPV fighter drone to combat high-altitude reconnaissance Unmanned Aerial Vehicles (UAVs). Ukrainian naval drones have completely changed the nature of naval combat. I am sure that these military systems can be very interesting for the EU defence industry.

So what's to stop the EU from proposing that Ukrainian defence experts share their knowledge at EDA? I don't think it is too much to ask. This collaboration would help European partners keep up to date on technological advances on the front line, as well as deepening our strategic relationship as Ukraine progresses towards EU membership. 



Tarja Jaakkola became NATO's Assistant Secretary General for Defence Investment in September 2024, the first Finn in such a senior position, following Finland's entry into the alliance in April 2023. She leads a team helping develop allied materiel capabilities, including air and missile defence. A former deputy director at the European Defence Agency (EDA), Jaakkola has also worked in high-level roles at the Finnish Ministry of Defence, including as Finnish National Armament Director. She talks to *European Defence Matters* about the debate between industrial and defence policy in Europe, and finding herself in charge of old colleagues as head of the alliance's Conference of National Armaments Directors.



Rheinmetall's four-legged 'robot dogs' and an unmanned ground vehicle were on display in September 2024 at REP Maritime Uncrewed Systems), an annual NATO-led exercise in Portugal. EDA has formally become a co-organiser.

## Jaakkola's Journey: From non to chairing allied cooperatio

**T**arja Jaakkola is disarmingly honest about becoming one of NATO's principal officials: it had not really occurred to her. With hindsight, her journey from Finnish National Armaments Director to chairing the NATO Conference of National Armaments Directors might seem logical. But a few years ago – with Finland outside the alliance and public support for membership below the threshold for joining – Helsinki seemed set to continue its role as a non-allied contributor to collective defence in Northern Europe.

So for Jaakkola, as well as other Finnish national security professionals, Russia's war of aggression against Ukraine, and Finland's ensuing NATO membership, caused a major shift in career.

On 28 February 2022, just four days after Russia's invasion of Ukraine, a majority – 53% – of the Finnish population supported NATO membership for the first time in history. "There was a new sense of urgency, a fundamental reshaping of the debate around Finland's security policy," Jaakkola says. "That, in part, brought me here," she says from her office at NATO headquarters in Brussels.

Being a Finnish national is not merit enough for the post. Though as a former judge, senior adviser at the Finnish Rail Administration and attorney-at-law,

Jaakkola's CV would have been impressive had she not worked a single day in defence. What she brings are years of experience in senior roles in the Finnish Ministry of Defence focused on capability development and delivery for over two decades, including at EDA from October 2011 to September 2017. Not to mention the years working with the Finnish Defence Forces, and with the European defence industry.

Jaakkola benefited too from the fact that Finland had been a close partner to NATO, and she sat in on many allied armament meetings, even if some were reserved for allies only. Now she has that valuable thing: perspective.

"I've been here as a national representative and look at the same topics from the alliance's viewpoint. I can see the need for blending domestic priorities with broader alliance needs," she says. She also has longstanding relationships with her former colleagues, the National Armaments Directors, around the table. "That can help discussions – also in an informal way and even on sensitive topics," Jaakkola says. She can approach discussions with candour.

### How to spend it

Allied discussions on the 2% of GDP annual spending pledge of 2014, reaffirmed at the Washington Summit in July 2024, are



MUS (Robotic Experimentation and Prototyping using

- Over half of NATO's committees and working groups, stemming from the Conference, revolves around armament and capability development, underscoring their significance.

For Jaakkola, navigating the intersection of policy and industry is something of a professional calling. Initiatives such as the Defence Production Action Plan, approved at NATO's Vilnius Summit in July 2023, and the NATO Industrial Capacity Expansion Pledge, adopted at the Washington Summit, are central. "These address the gaps in defence production and strive to make sure supply chains are stable and reliable, particularly as nations replenish stockpiles depleted by support to Ukraine," she says.

**Full-circle moment**

As NATO and the EU pull together in defence of Ukraine and the Euro-Atlantic area, Jaakkola has a sense that her work is coming full circle. She now is set to represent NATO at the next meeting of EU National Armaments Directors and those of the alliance. NATO's 32 allies, and the EU's 27 Member States (23 of whom are also NATO allies) are grappling with similar challenges: ramping up defence capabilities, addressing industrial capacity, and replenishing stockpiles of armaments sent to Ukraine.

However, their mechanisms differ.

- NATO's NDPP provides targets for its allies. NATO does not take a position on where allies should source their equipment from. For NATO, the most important factor is ensuring allies have the right capabilities.
- The European Union's Capability Development Priorities, and the Coordinated Annual Review on Defence (see EDM page 8), are in coherence with NATO, yet seek to develop the European Defence Technological and Industrial Base (EDTIB).

"Of course there is a strong case for developing defence industries in the European Union. But at the same time, allies need to have the freedom to acquire the capabilities that meet requirements and targets – and time is of the essence here," Jaakkola says.

As a Finn, and a European, Jaakkola is also fully aware of the debate about whether there should be a European pillar within NATO. On this, she will not be drawn. "NATO remains the cornerstone of collective defence, and EU initiatives to bolster industrial and defence capabilities do complement the alliance's goals," she says. "What really matters is deterrence and defence of the Euro-Atlantic area." [K](#)

# -alignment n

not directly part of Jaakkola's portfolio. While the pledge sets a benchmark for national contributions, it does not specify how funds should be allocated. The NATO Defence Planning Process (NDPP) defines the capability targets the allies are expected to fulfil. "That's where our work comes in – ensuring that allied investments align with the capabilities that NATO needs," Jaakkola says.

Also under her remit in the Defence Investments Division is:

- NATO's role in safeguarding allied airspace. Air and missile defence has been a longstanding priority – NATO's work encompasses everything from policy to capability development, and from air policing to ballistic missile defence – but Russia's missile attacks on Ukraine have brought home the potential threat to Europe.
- The work is done through NATO's Conference of National Armaments Directors. It is the engine room where allied capabilities are conceived and developed. "We have a web of working groups composed of technical and operational experts both from allies and the defence industry, setting everything from interoperability standards to advancing the NDPP," Jaakkola says.



A 'quadcopter' drone manufactured by Beyond Vision was displayed in September 2024. The high-performance drone is designed for long flight times and relatively high speeds, ideal for long-range surveillance.

**• NATO'S Conference of National Armaments Directors at a glance:**

- Established in 1966, the Conference seeks multinational cooperation to develop interoperable military capabilities for NATO operations
- It reports to the North Atlantic Council, NATO's top decision-making body, looking for collaborative opportunities for research, development, and to advance industrial production of military equipment, such as air and missile defence
- It meets twice a year at the level of National Armaments Directors, and has a vast sub-structure, including army, air force and naval armaments Groups, the NATO Industrial Advisory Group, and the recently established Defence Industrial Production Board.

# From lines of sight to lines of credit: EIB and EDA take aim



On October 3, 2024, the European Defence Agency (EDA) and the European Investment Bank (EIB) updated their partnership agreement. The revised agreement allows EDA to take a prominent role in advising the EIB on 'dual-use' projects that serve both civilian and military purposes. EIB Vice President **Robert de Groot** explains.

**"We're open," says EIB Vice President Robert de Groot of the bank's new €8 billion defence fund. "We're awaiting proposals, awaiting clients," he adds.**

So far, so normal for the world's largest multilateral lender. Prior to the October 2024 agreement with EDA, there was one missing ingredient, however. How might the EIB invest in security and defence projects by the end of 2027? Who would decide, beyond the obvious criteria – that projects must be for both civilian and military use – which projects to support?

De Groot, a senior diplomat with a long career at the Dutch Ministry of Foreign Affairs, is clear why the EIB needed EDA's help. Its typical business, with no less than €84 billion in loans in 2023, involves financing railways, trams, energy grids, wind farms and companies conducting research into new materials, just to name a few areas.

With a substantial technical department and hundreds of engineers, the Luxembourg-based lender has plenty of people to guide it on sound investments. "But when it comes to European defence, we don't have any generals to help prioritise crucial areas," de Groot says. "This is why the Memorandum of Understanding is essential, as it provides us with the expertise, network and collective European defence objectives we need to evaluate projects."

**"The EDA's advice is the most important"**

#### All shapes and sizes

The EIB's €8 billion envelope, called the Strategic European Security Initiative (SESI), aims to attract companies big and small. For existing clients like Italy's Leonardo, the

- In May 2024, the EIB broadened its mandate to support dual-use projects, allowing financing for technologies with both civilian and military applications.
- The EIB has €8 billion for security and defence-related initiatives, supported by its Security and Defence Office.
- EDA will help improve project assessments, financing solutions, and funding access.



“EU financing needs: The EU requires €500 billion in defence investments over the next decade” Source: European Commission

EIB's new involvement is a chance for deeper partnerships in the security sector. It is also an opportunity to reach new firms.

The EIB has a history of working with small and medium-sized enterprises (SMEs), among others, through its subsidiary the European Investment Fund (EIF), and it hopes to broaden this reach within the defence sector. The EIF's Defence Equity Facility provides €175 million in equity to support venture capital and private equity funds investing in European companies with dual-use technology potential.

The EIB's financing terms - long-term loans at low interest rates - are well-suited for defence assets with a long lifespan, de Groot argues.

For instance, if multiple EU Member States collaborate on satellite or drone procurement, they could set up an entity to manage data access, with the EIB financing up to 50% of project costs.

This approach, the EIB's modus operandi, can spread costs over a 25-year period, a financing model the EIB has used in other sectors. "That's 50% less pressure on government budgets," de Groot says.

**Living the triangle**

Working with the EIB is new for EU defence companies and defence ministries too. Unlike in the energy sector, they are not

used to the so-called triangular discussions typical in the energy sector that bring together companies, promotional banks and governments.

"Your advice is the most important," he says of EDA. "When a Member State approaches us with a project, we need confirmation that it aligns with European

priorities. High-priority projects come first. That's where EDA becomes essential."

De Groot, who holds a master's degree in monetary economics, stresses that he is not sitting in Luxembourg waiting for the telephone to ring.

"I meet with defence ministers, state secretaries and the like, to explain what →



An autonomous underwater vehicle was displayed and tested in September 2024 at REPMUS.



EDA Chief Executive Jiří Šedivý signs a revised partnership with EIB Vice President.

the European Investment Bank can offer," de Groot asserts, noting that these discussions often lead to new ideas, such as collaborative projects for satellites, drones, or critical infrastructure. However, the EIB does not initiate projects directly; rather, it provides guidance and suggestions, while ministries, associations or companies develop their own project proposals.

#### AAA - the highest and the most reliable

Russia's invasion of Ukraine has left defence ministries busier than ever. So, de Groot will typically follow up on ideas after about six weeks, supported by the bank's Security and Defence Office. He tempers expectations, saying, "I expect progress, but not by 2024," describing this as a phase of "mutual familiarisation."

Has the EIB's entry into the security and defence sector impacted its triple-A credit rating?

Banks seek to respect Environmental, Social and Governance (ESG) criteria, and investing in defence contractors is seen as taboo, even as Member States provide massive financial, humanitarian, and military aid to Ukraine.

## Is defence a sustainable business? The financial dilemma facing European industry

**Financial barriers:** Defence companies in Europe face significant financial challenges due to investor reluctance, as many banks and financial institutions are pulling back from supporting them, citing ethical concerns related to weapons production. This has led to difficulties in securing credit or new loans for defence contractors.

**Ethical investment dilemmas:** The defence sector is often grouped with industries like tobacco, alcohol and gambling in terms of 'ethical' investments, which makes it difficult for defence companies to attract investment despite the urgent need for military supplies in the context of the Ukraine war. This raises the issue of whether the defence industry should be exempt from sustainability criteria.

**EU and NATO support for the defence industry:** The EU and NATO have defended the moral legitimacy of the defence industry, stating that without industry, there can be no effective defence,

deterrence or security. This aligns with the growing recognition in European capitals that peace requires defence, and defence requires an industrial base.

**Defence as a sustainable industry:** The debate is over whether the green transition and the pursuit of Environmental, Social and Governance (ESG) goals can coexist with the operational needs of the defence industry. EU experts warn that ESG regulations could hinder the industry's ability to meet security demands, potentially undermining Europe's overall defence.

**Sustainable finance:** While ethical investments have grown significantly since the 2008 financial crisis, the defence sector has not been included in many ESG frameworks. There is a push from EU policymakers to establish a 'social taxonomy' that would address the unique role of the defence industry in Europe's security, resilience and competitiveness while considering ESG criteria.

**"This is why the Memorandum of Understanding is essential, as it provides us with the expertise, network, and collective European defence objectives we need to evaluate projects"**



© EIB / Oscar Romero

## CFM finally operational: Mitigating the mismatches

Not to be confused with cubic feet per metre, or even a Belgian radio station with the same initials, CFM is the Cooperative Financial Mechanism that is set to allow inter-state support and outside lending from the EIB. First envisaged in 2020, it achieved the full political support it needed to operate in July 2024 and is now finally operational. It seeks to overcome the snags faced by Member States in collaborating on defence projects because of differing annual budget cycles and the pressure on ministries to spend unallocated funds before deadlines.

With both a state-to-state lending mechanism – allowing national defence ministries to lend unused budget resources to support collaborative projects – and the possibility of loans from the EIB, each participating EU country will have its own CFM bank account to manage contributions and lending. EDA will oversee the funding requests and monitor compliance, ensuring the mechanism operates within EU regulations. Through the CFM, the EIB can also offer short-term loans, while other Member States can provide reimbursable advances or deferred payments to help bridge these funding gaps.

"What the CFM is trying to do is to remove the financing obstacles," says Oliver Cusworth, Senior Policy Officer at the EIB Permanent Representation in Brussels. "So, you can imagine two ministries, two different Member States, that have a joint project in mind. With a loan from the EIB, we can provide that bridge finance for the partner that is outside of a budget cycle to therefore go ahead with the joint projects," he says.

To gain support for the CFM, it was essential to convince national finance ministries to endorse a framework that aligns with EU treaties and respective budgetary regulations. The innovative aspect of the CFM lies in its approach, allowing countries to use funds – whether newly allocated or remaining from the year-end budget – in a multi-year capacity to foster cooperation. Once a Member State opts to participate, its contributions remain available across fiscal years, no longer subject to automatic return to the national treasury. This capability represents a significant political milestone for EU collaborative projects.

Carl-Johan Lind, Policy Officer at EDA in charge of managing the CFM, reiterates: "Looking at our own project pipelines, we see significant challenges faced by Member States in spending their research and technology budgets due to delayed implementation of projects. The CFM will now enable Member States to make better use of their budgets, allowing their money to be used for collaborative projects."

If successful, the CFM could enhance collaborative defence efforts in Europe by allowing countries to better utilise their budgetary resources for joint projects.

The answer, so far, is no.

"Our yearly turnover is over €80 billion, with security and defence comprising about €8 billion through 2027, so the relative scale is modest. Rating agencies visit us annually for standard reviews, and our rating has remained stable."

Additionally, the EIB maintains strict guidelines on non-lethal funding, explicitly excluding weapons, ammunition and other short-term consumables from its financing criteria. Instead, its investments focus on durable assets like military hospitals, bridges and roads – projects that support strategic infrastructure without conflicting with the EIB's broader mission.

The EIB is seen by some in the defence industry as too cautious. It's dual-use policy still falls short of lifting all restrictions in financing defence.

"Shareholders could lift all limits tomorrow," de Groot says, who is a Dutch reserve infantry officer. "But I don't see the necessity. Defence budgets are rising, so there isn't a funding shortage for munitions."

History shows, he argues, that bullets and bombs have been funded by taxation or government bonds, so adding EIB financing for such purposes would not significantly alter the funding landscape. "We are a promotional bank. We try to finance the transition of our economy to make Europe more resilient, more innovative. What is innovative about bullets? Very little." 



NATO forces eventually learned how to deal with improvised explosive devices (IEDs) in Afghanistan, while EU militaries also faced the IED threat in the Sahel. Once again, teaching the art of counter-IED (C-IED) is urgent, as Ukraine clears mines along its frontlines and confronts IEDs dropped from the air. In 2024, the European Defence Agency (EDA) marked 10 years of operations in the Netherlands with its deployable military facility to help counter IEDs: the Joint Deployable Exploitation and Analysis Laboratory (JDEAL).

## One step ahead

**J**im Blackburn was not the only one to notice a horrifying aspect of the early years of the Afghanistan war – that IEDs were causing around 80% of allied military casualties. However, he was in a position to try to stop it. The year was 2007, and Blackburn, a British Army veteran, was working at EDA in Brussels on capabilities.

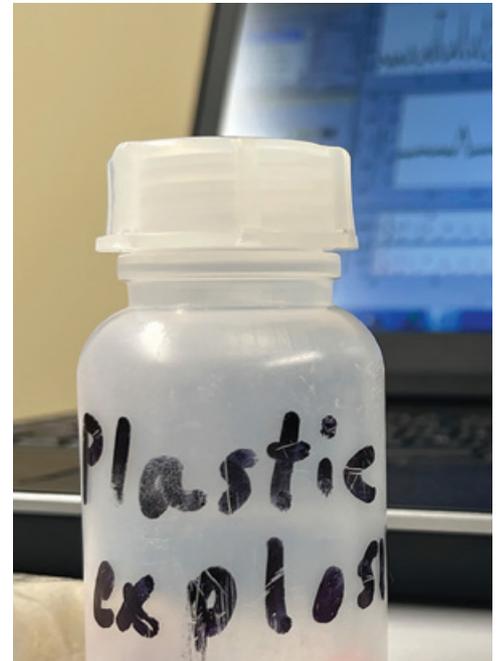
What was needed to counter the threat, he believed, was a way to gather as much information as possible about who was making the IEDs, where the components came from, and who was supporting the supply and construction network. If allies knew that, the IED networks could be interdicted, saving the lives of soldiers and civilians alike.

An IED is a homemade bomb that can come in all shapes and sizes, triggered in various ways. Countering IEDs is not only about dealing with a bomb that is already set to detonate, but also about finding and dismantling the groups that make them.

In Afghanistan, EDA was in a position to design a forensic laboratory for deployment, but EU Member States needed to back it,



A small pressure plate, made from a bicycle tyre inner tube or wrapped in duct tape, triggers the explosion for the kind of IED used against NATO forces in Afghanistan. Today IED's can be delivered by aerial drones.



## d of the bombmakers: JDEAL

finance it, and provide the personnel. "There was a lot of hesitation. EDA was largely unproven, having been founded just three years before," Blackburn says. "We at the Agency said, 'Let's use EDA's Operational Budget to fund a one-million-euro exploitation lab and send it to the NATO-led mission in Afghanistan.' And we did."

Thus, the Multi-National Theatre Exploitation Laboratory (MN TEL) was born.

### "We need to integrate C-IED back into EU intelligence gathering"

C-IED in EDA initially took off with the 'Military Search' activity (*see page 32*) where the Italians were supportive and helped draw up the concept in Rome, Blackburn recalls. France later offered to lead the MN TEL project in 2010, and the lab was tested in Spain at the NATO Centre of Excellence. Luxembourg would later fly the lab to Kabul, and it was operational by September 2011. In all, personnel from Austria, France, Ireland, Italy,

Luxembourg, the Netherlands, Poland, Romania, Spain, and Sweden took part.

"The lab had an immediate impact, supporting the International Security Assistance Force (ISAF) and the Afghan National forces," Blackburn says. "The Netherlands then approached the EDA to ensure the lab became more permanent, with expertise that would endure."

#### In the pine trees of Soesterberg

Fast-forward to today, and the EDA project that was once called MN TEL is now permanent. Located in a joint training facility amid the pine trees of Soesterberg in the Netherlands, and comprising two deployable laboratories equipped with tools such as a Rapid DNA machine, the Joint Deployable Exploitation and Analysis Laboratory (JDEAL) has trained over 900 personnel from 14 EU Member States. JDEAL began operating in mid-2014.

If the lab's name sounds off-putting, it should not be. Exploitation, also known as technical exploitation, refers to the recording and analysis of IEDs. Commander JDEAL

Robert Breen, a major now at the Dutch Ministry of Defence, says: "This can be in support of military intelligence and even in support of battlefield evidence. The project is not limited to the investigation of IEDs. As the world changes, JDEAL is able to execute technical exploitation in a broader scope. Not only forensics but also, documentation, chemicals, electronics, media and UAV exploitation."

Still managed by EDA and led by the Netherlands, JDEAL also brings together Austria, Belgium, Finland, France, Germany, Hungary, Italy, Luxembourg, Portugal, Romania, Spain and Sweden – as well as Norway. The United States, the United Kingdom, and the NATO Counter-IED Centre of Excellence have also sent observers during the project's lifetime. The facility can be deployed with five days' notice, either as a container or a tent, depending on field conditions.

#### Lab to Ukraine, 'Military Search'

Now, the facility and its expertise may have a wider application. The Netherlands →



Personnel from JDEAL, EDA and the Royal Netherlands Armed Forces celebrate the project's 10th anniversary on 13 September, 2024.

The JDEAL project covers all aspects of analysing and understanding IEDs:

- Visual inspections and capturing high-quality images
- Biometric analysis; recovering fingerprints
- Examining electrical and electronic components, particularly radio parts
- Retrieving data from ID documents and on mobile phones often used to trigger IEDs
- Conducting chemical analysis
- Fast DNA analysis and identifying weapons or tool marks

is donating one of the deployable laboratories to Ukraine and will partly finance the cost of its replacement, ensuring that two laboratories remain operational for the Member States.

What's more, JDEAL is not the only EDA project focused on counter-IED. Through the Military Search project (MSCB), various Member States learn from each other's best practice and experience, and synchronise their efforts to search and detect IEDs – the first step to be able to neutralise and investigate them.

Through its centre in Vienna, the EDA-managed European Centre for Manual Neutralisation Capabilities (ECMAN) also trains personnel from Member States to manually defuse highly-complex IEDs when necessary. It is one of the most mentally and technically challenging jobs performed by anyone in the armed forces.

#### 'Midwife' to military projects

Given the progress, might this be the moment for EDA to hand over JDEAL to Member States?

After all, EDA has acted as midwife to the birth of many EU military projects, such as

the Multinational Helicopter Training Centre (MHTC), shepherding them through their development before handing them over to a Member State.

Not just yet. So says Danny Heerlein, EDA's Project Officer for Counter-IED, who is also a specialist in counter-IED threats, serving in both Afghanistan and Mali. "JDEAL can provide the capability of so-called 'In-Theatre Level 2 Exploitation' in mission areas. But before we deploy this capability to a real operation, we need to verify that this capability fits seamlessly into NATO and the NATO counter-IED exercises we attend," Heerlein says.

Since 2013, EDA has been closely involved in the multinational live exercise known as Bison Counter, which brings together C-IED teams and capabilities from European countries and the United States. It is the largest counter-IED exercise in Europe.

#### Dirty bombs

Another goal for EDA before handing over JDEAL to Member States is perhaps the hardest to grasp. "We need to integrate C-IED back into EU intelligence gathering," Heerlein says. One challenge, he adds, is that

procedures between ECMAN and JDEAL are not yet fully synchronised. "We need closer management to ensure that all C-IED capabilities complement each other and align with NATO."

A further milestone for JDEAL involves addressing the threat of chemical, biological, radiological, and nuclear (CBRN) materials, which is particularly challenging due to the risk of contaminating laboratories – not to mention the deadly danger to lab personnel. This is not just theoretical either.

In Ukraine, the United States has accused Russia of deploying chemical weapons, notably the choking agent chloropicrin. So-called dirty bombs, combining conventional explosives with radioactive materials, could be detonated. Academics in the C-IED community have also raised the issue of whether JDEAL's work could be used to provide evidence against Russian aggression at the International Criminal Court in The Hague.

"We have to ask the question: how does JDEAL fit today when we have war in Europe?" says Paul Vos, Chairman of the JDEAL Management Committee. "What kind of future are we preparing JDEAL for?"

# Grand designs: the EU's ambitions for defence integration

Now, almost seven years on from the EU summit that launched PESCO, this framework is undergoing a scheduled health check. It is timely. The world has changed dramatically since PESCO was first conceived. The EU's attention is more focused on high-intensity warfare, in coherence with NATO, following three years of Russia's war of aggression in Ukraine.

The review highlights PESCO's crucial role in shaping EU defence, but suggests it is time to refresh its commitments. The focus should be on setting clear, measurable targets in areas such as defence spending and industrial collaboration, the review suggests. Future joint projects under PESCO should align with collaborative opportunities identified in the EU's defence review (*see EDM page 8*).

The European Defence Agency (EDA) is part of the PESCO Secretariat.

Krista Salo, EDA's Head of Unit, PESCO, and Project Officers Dorota Sliwa, Giuditta Morandi and Georgios Karaferis, as well as outgoing Project Officer Ana Rodrigues, sit down with *European Defence Matters* to discuss how the flagship defence framework is faring so far.

**I**t is permanent, it is structured and it is about cooperation. The EU's defence framework sounds so straightforward. Understandably in the EU's multinational setting, and at a time of war in Europe, the reality is more complex.

It is permanent, it is structured and it is about cooperation. The EU's defence framework sounds so straightforward. Understandably in the EU's multinational setting, and at a time of war in Europe, the reality is more complex.

"The beauty of PESCO," says Krista Salo, "is that it is a framework where 26 nations sit together regularly to discuss the cooperative efforts (Malta is not in PESCO). But the challenge lies in turning those ideas into concrete capabilities."

To understand the significance of PESCO's strategic review, it is important to consider its origins. PESCO was inspired by a recognition that Europe needs to do more in the field of defence. Member States realised that a more structured approach to defence cooperation was necessary.

So far, PESCO has focused broadly on projects in areas such as military →



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concepts, training, capabilities and materiel. It remains a work in progress. "We have a very different security environment now," Salo says. Russia's illegal annexation of Crimea in 2014 and its full-scale war of aggression against Ukraine have forced the EU to rethink its strategic priorities. Instability, terrorism and failing states on the EU's borders have made it clear that Europe's traditional approach to security is no longer sufficient.

"PESCO, initially designed to facilitate increased collaboration gradually, is now in need of greater urgency," says Salo.

#### Time for a 'Strategic Review'

Launched in 2023, the review aims at reassessing PESCO's objectives and commitments and at ensuring that its projects meet today's security needs. "We've gained seven years of experience in implementing the commitments agreed upon then," Salo says. "Now it's about turning this into action. The time for broad conceptualisation is over."

The review seeks to refine PESCO's strategic focus, ensuring that defence projects are aligned with both immediate and long-term threats, says Giuditta Morandi, who is part of Salo's team. "The aim is not just to create a framework for discussion but to produce real-world results – defence capabilities that are operational, scalable, and aligned with the EU's broader strategy," Morandi says.

### "We've gained seven years of experience. Now it's about turning this into action. The time for broad conceptualisation is over"

The review of PESCO has been multifaceted, with several key areas being addressed to enhance the initiative's effectiveness. One of the primary goals is to ensure that PESCO projects are more tightly aligned with the EU's defence priorities, which have shifted in response to Russian aggression.

"This review pushes for more from PESCO. We need projects to be more coherent with collaborative capability development in the EU," says Dorota Sliwa, who is also part of Salo's team.

#### Time to commit

Under the framework of PESCO, EU countries have committed to planning together, sharing resources, and investing in joint capability development. The initiative aims to fill gaps in military capabilities that no single country could manage alone.

These include:

- Committing to annual increases, in real terms, in defence spending
- Investing in joint projects addressing critical capability gaps

- Modernising armed forces to meet operational standards, within the EU and with NATO
- Providing personnel, equipment, and support for EU missions and operations
- Boosting defence industry integration and support innovation in the defence industry

"In the review, we've looked at where we stand with the implementation of these commitments so far," says Sliwa. "Progress has been mixed, but the achievements are encouraging and provide a foundation for the next phase, which will be based on a refined set of commitments and clear objectives."

From its inception, PESCO has been a cornerstone of the EU's emerging defence architecture, and what makes it special are the commitments. "We are updating the commitments to reinforce PESCO as an overarching framework," Sliwa says.

#### A permanent road trip

PESCO projects have been criticised for their slow progress, with some of them remaining in the planning phase for years. "The review aims to shorten the timeline from concept to delivery, so that projects can move from early-stage development to prototypes within a feasible timeframe," Morandi says.

Currently over 60 PESCO projects are being developed, with more in the pipeline.

Each of the projects is carried forward by varying groups of PESCO participating Member States (project members) and is coordinated by one or more of them (project coordinators).

While progress in each PESCO project unfolds at its own pace, and with military capability development inherently a long-term endeavour, the initiative is delivering results.

"PESCO projects have demonstrated adaptability to challenges from the COVID-19 crisis to Russia's war of aggression against Ukraine," says Georgios Karaferis, another member of Salo's team.

With many signalling readiness for operational use by 2025, most PESCO projects have advanced steadily. Several projects are already operational:

- **The EUFOR Crisis Response Operation Core** has refined EU force sensing systems, crucial for the emerging Rapid Deployment Capacity (see EDM page 20).
- **The European Medical Command** has established the Multinational Medical Coordination Centre – Europe, a permanent resource that supported COVID-19 responses and aid to Ukraine.
- **The Cyber Threats and Incident Response Information Sharing Platform** offers a cutting-edge software prototype to strengthen EU cyber defence.
- **The Cyber Rapid Response Teams and Mutual Assistance in Cyber Security** develops specialised teams to respond to cyber incidents.

Karaferis says: "While the fundamentals of PESCO are under review, the cooperation in a new set of PESCO projects already demonstrates a positive and ambitious direction for the future of the initiative."

The second phase of PESCO is set to start in 2026.

EDA believes that for PESCO to be truly successful, a cultural shift is needed, where Member States fully embrace collaboration. "They need to come together, assess gaps and launch projects that align with both EU priorities and their own national interests, in complementarity with NATO," says Ana Rodrigues, an outgoing project officer who has been responsible for tracking individual PESCO projects and providing updates of their progress. 



### A recipe for success

**More focus on impactful projects:** Showcase PESCO's value: Driving impactful and strategic projects that matter to the EU and its Member States

**Increased cooperation:** Gather at least three Members States to launch a project and unlock the power of stronger cooperation

**Strategic alignment:** Projects should align with European defence priorities

**Solid preparation:** Focus on laying a strong foundation from the start to ensure a successful project journey

**Strengthen the PESCO Secretariat's role:** Advice and support from EDA, the EU Military Staff (EUMS), and the European Union External Action Service (EEAS), could help to filter out low-impact projects



**Nathalie Guichard**, a brigadier general and distinguished military engineer, joined the European Defence Agency (EDA) as Director of Research, Technology, and Innovation (RTI) in May 2024. A graduate of France's L'École Polytechnique and ISAE-Supaéro, she talks to *European Defence Matters* about what it means to stimulate European-wide defence research, including through the Hub for EU Defence Innovation (HEDI), at EDA.

## EDA fosters a **military research culture** beyond the Franco-German core

**W**ar is a driver of innovation, often in stark and brutal terms. European nations entered World War II with piston-engine planes and exited with fighter jets. Tanks, too, underwent a jaw-dropping evolution, transforming from infantry support to the modern main battletanks that have dominated the land domain ever since. And then there's the sea: the once-mighty battleship was overshadowed by the further development of submarines and aircraft carriers.

No pressure, then, on Nathalie Guichard, EDA's new Director of Research, Technology, and Innovation (RTI). She joined the Agency as full-scale war returns to Europe with Russia's war of aggression against Ukraine. Not to mention the competing national interests in European Union defence collaboration.

"It might sound like a cliché, but cooperation is essential for Europe to advance its defence research. We need ideas, funding, and to connect our Member States," says Guichard, whose career has taken her from DASA (later part of Airbus) in Germany as a trainee to managing France's Rafale naval aircraft sustainment system. Guichard then went on to deal with European Union structural funds and innovation support, before returning to the French Ministry of Defence to become the managing director of a military aircraft maintenance facility.

### Franco-German spending – a driving force

With France and Germany accounting for more than 80% of the EU's defence research and development (R&D) spending, the lion's share of Europe's technological advancements rests on the shoulders of these two nations. But that needs to change.

"The challenge, of course, is that many other EU nations must step up," Guichard says. Some nations fear the loss of technological autonomy and are wary of sharing their cutting-edge capabilities with others. "Without broader investment and coordination, we risk losing the power of unity in Europe's defence innovation."

According to EDA defence data, defence R&D spending reached €11 billion in 2023, more than doubling the amount spent in 2016, when defence R&D was at a record low. Yet the United States and China outclass the EU when it comes to investments in defence R&D, highlighting the increasing importance of this activity, given the potential for conflicts with technologically sophisticated adversaries.

- Defence Research & Technology (R&T) expenditure (a subset of defence R&D expenditure covering basic research, applied research, and technology demonstration for defence purposes) is estimated to have reached €4 billion in 2023.
- Since 2016, Member States have nearly tripled their outlays on defence R&T.
- Member States allocated 1.4% of total defence expenditure to defence R&T, falling short of the 2% benchmark.
- In 2023, Member States collectively allocated €242 million to European collaborative R&T projects, representing 6% of total defence R&T expenditure. This remains below the 20% collective benchmark agreed by the EU.

### 'Massive team effort'

Guichard was at the heart of the Rafale fighter plane programme in the 1990s.

It is a symbol of French technological prowess. It too encapsulates the tensions of European defence development. Though primarily now considered a national project, the Rafale's development started with numerous European partners, before France proceeded with its own programme.

Still, Guichard described it as "a massive team effort," requiring input from specialists across numerous disciplines – a reflection of the intricacies of multilateral military innovation that can apply today. "An aircraft involves many specialists across various fields. It's not just about the technology, but about coordination, patience, and a shared understanding of what we're trying to achieve."

That sounds familiar to EDA, where, from automating air-to-air refuelling systems to launching very low earth orbit satellites, R&D also involves specialists from across the board. "Take unmanned systems. They are not just a new capability; they represent a whole new way of thinking about warfare and so we need the experts to come together," says Guichard. "We're taking it forward, through experimentation. It's about understanding and meeting military needs. After all, the military is the end user."

### Innovation trinity: HEDI, EUDIS, DIANA

Still, the journey from R&D to a fully deployable technology is fraught with obstacles. These include differences in national procurement strategies, concerns about intellectual property, and varying technological maturity across Member States. "There is a pipeline, yes, but it's not always a smooth one," Guichard says. "It takes time, resources, and a willingness to engage with each other across borders. →

# EUROPEAN DEFENCE INNOVATION DAYS

KRAKOW POLAND  
13-16 MAY 2025



EUROPEAN  
DEFENCE  
AGENCY



Ministry of National Defence  
Republic of Poland

Over **3** days and with **750** participants

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## EXHIBITION

80 STANDS

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## BREAKOUTS

83 SESSIONS, 60 PRESENTATIONS

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## CONFERENCE

30 HIGH-LEVEL SPEAKERS

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## MAKEATHON

25 TEAMS

The military needs are urgent, but so is the need for careful planning."

It is here that the European Defence Innovation Hub (HEDI) comes into play. Its role aims to advance the EU's defence innovation ecosystem, directly contributing to the EU's wider objectives of strategic autonomy and enhanced defence capabilities. HEDI's activities are tightly aligned with the EU's broader goals of fostering resilience, technological advancement, and cross-border collaboration, Guichard says.

Through its network of Member States, industry and academia, HEDI has established itself as an important player. HEDI also works with the European Commission's EU Defence Innovation Scheme (EUDIS) to meet Member States' innovation needs, as well as with traditional and arguably less traditional defence firms, institutes and the like.

"Start-ups bring a level of agility that large organisations simply can't match. They allow us to explore new frontiers in defence technology with a speed and creativity that's crucial in the face of emerging threats," Guichard says.

Meanwhile, NATO's Defence Innovation Accelerator for the North Atlantic (DIANA) is focused on dual-use civilian firms whose ideas could help the military. EDA is focusing directly on the military. "DIANA is an accelerator for companies, focusing on their structures and their economic model, while we focus on specific innovations and help companies adapt them to military needs."

The ongoing success of collaborative initiatives like EDA's Capability Technology Groups – where Member States, industry, and academia come together to discuss and refine ideas – furthers the work.

Whether through flagship programmes or emerging technologies, Guichard says that the European Union has the potential to lead the world in defence innovation – provided it can find a way to bridge the gaps between its fragmented national approaches and its collective ambitions.

"The future of European defence lies not with individual nations, but with our collective breakthroughs. Together, we can do what no one country can do alone," Guichard says. 

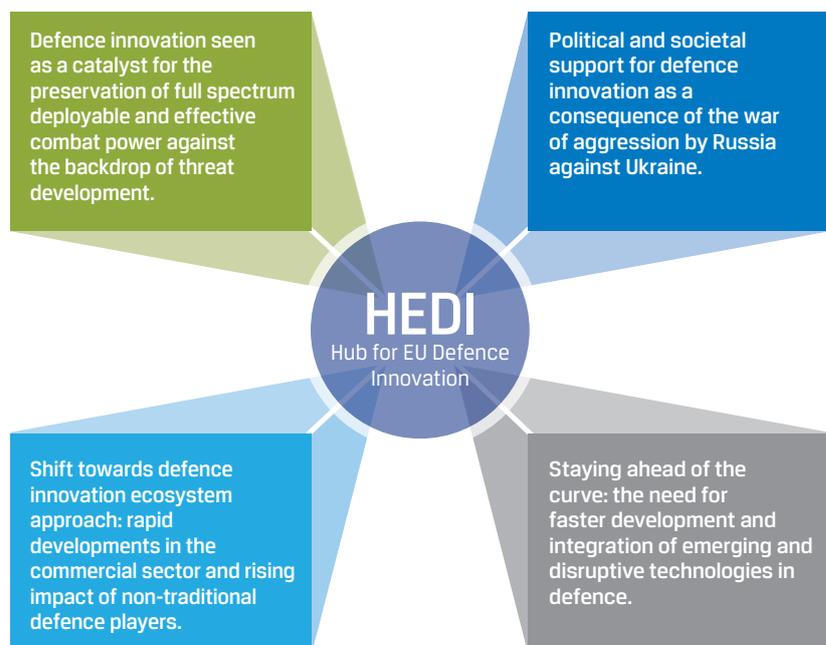


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From September 2020 onwards, Guichard was director of AIA, a French state-owned military aircraft maintenance facility, based in Clermont Ferrand, France. In this file photo, Guichard stands in front of two aircraft that were among nine that AIA was maintaining at the time.

## HEDI: a convergence of factors

Key drivers behind the establishment of the hub



### The Hub for EU Defence Innovation, known as HEDI, has been established within EDA

- HEDI aims for rapid adoption of emerging technologies in support of the military
- HEDI connects innovators to share best practices, methodologies, and projects
- HEDI allows initiatives such as the EDA Innovation Prize, and the Research, Technology, and Innovation Papers Award, to encourage innovation
- HEDI's flagship events, such as the European Defence Innovation Days, showcase results so far, connect people, and seek to create a culture of collaboration across the defence community
- For proof-of-concept development, HEDI accelerates the maturing of technology
- HEDI works with the European Commission's Defence Innovation Scheme and with NATO

# EDA defence data

The European Defence Agency (EDA) collects defence data on an annual basis, and has done so since 2006. The Ministries of Defence of the Agency's 27 Member States provide the data. EDA acts as its custodian and publishes the aggregated figures. Datasets by country are available since 2006 on the Defence Data Portal on EDA's website: [www.eda.europa.eu](http://www.eda.europa.eu)

## €279 billion – 2023

### 2023 figures

At a record €279 billion, 2023 European defence spending increased by 10% on the previous year, marking the ninth year of consecutive growth. Twenty-two of the Member States increased defence expenditure, with 11 increasing spending by over 10%.

## €326 billion – 2024 (projected)

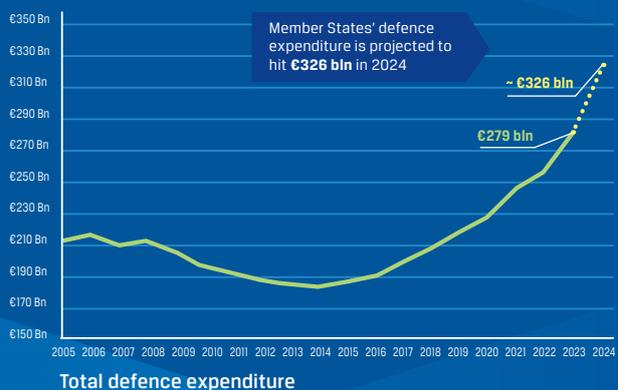
### 2024 forecast

Separately, the Coordinated Annual Review on Defence (CARD) report (see EDM page 8), which provides an overview and analysis of the EU defence landscape for Member States, forecasts the following spending for 2024:

- EU defence spending is projected to reach €326 billion in 2024
- Defence investments are expected to hit a record 31% of total defence expenditure, with research and technology (R&T) spending increasing to €5 billion in 2024
- Procurement spending is seeing sustained growth and could increase beyond €90 billion in 2024

Figures are in constant 2023 prices

### Sharp rise in total defence spending



### 2023 European Defence Spending – Key Findings

The return of full-scale war to Europe and efforts by Member States to strengthen their military capabilities led to a noticeable jump in defence spending in 2023.

- Denmark (50%), Poland (47%), Estonia (36%), Latvia (35%) and Bulgaria (35%) recorded the highest increases in overall expenditure among the EU 27.

- A record €72 billion was allocated to defence investments accounting for 26% of total defence expenditure, the largest share recorded by EDA since data collection began in 2005. This allocation was overwhelmingly directed towards the procurement of new equipment, which increased by 19% on the previous year.

In 2023, total funding for collaborative research and technology (R&T) projects initiated under the European Defence Fund (EDF), in calls 2021 and 2022, reached approximately €100 million for projects, marking the first year that the EDF had such a significant financial impact on the European defence landscape.

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