

EDM

EUROPEAN DEFENCE MATTERS

Broader Horizons

Stronger partners for European and transatlantic security



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U.S. Under Secretary
LaPlante on transatlantic
cooperation

› THE DANISH VIEW

Denmark becomes
the 27th Member
State of EDA

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Portugal's Minister Carreiras on
taking over EDA's Multinational
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BROTHERS AND SISTERS IN ARMS

Thousands of kilometres from the Ukrainian frontline, away from Russia's 'dragon teeth' tank traps and its mines, the work of European defence planners, industrialists and governments goes on. While they are not fighting battles on the ground or paying with their lives, from politicians to project officers, people are helping to reverse the downsizing of European defence capabilities, after a quarter of a century of falling defence budgets.

The European Defence Agency (EDA) is a part of that. Revamping production of weapons and ammunition will take time. Industry was not set up for a high-intensity war on European soil.

But partners are coming together to deepen their relationships in defence. As EDA welcomes Denmark as its 27th Member State, so this edition of *European Defence Matters* highlights the ties that unite us. Call it broader horizons, or something more prosaic, the enduring support to Ukraine is intensifying.

The EU-U.S. summit of June 2021 marked the beginning of a renewed transatlantic partnership. We discuss with our Chief Executive Jiří Šedivý and U.S. Under Secretary of Defense for Acquisition and Sustainment William LaPlante what the new EDA-U.S. DoD Administrative Arrangement (AA) brings. We hear, too, from Norway's defence minister about the benefits of its AA.

EDA's Head of Agency, High Representative Josep Borrell, underscores the need for the collaborative procurement of ammunition. As the outgoing EU presidency chair, Sweden has been at the centre of the European jigsaw to improve defence cooperation. We hear from the country's Minister for Defence, Pål Jonson.

As Portugal's Minister of Defence Helena Carreiras explains, the EU needs a defence industrial base that is greater than the sum of its national parts. Picking up on that point, EDA's Capability, Armament & Planning Director Stefano Cont draws lessons from the war in Ukraine and suggests that a real defence-industrial capacity is a capability in itself. Enzo Benigni, President and Chief Executive of Elettronica Group, looks at another aspect seen in Ukraine: electronic warfare, his company's speciality.

And if strengthening European armed forces is EDA's goal, what better way for the Agency to show its commitment than through its fast-track joint procurement of ammunition? In this edition, we lay out the steps.

Short of a full Russian retreat in Ukraine, the acceleration of EU ambitions in defence marks the beginning of a new chapter in defence collaboration. As history has shown, only together with allies, partners and friends are peace and security possible.

Robin Emmott
Editor-in-Chief

Lionel Sola
EDA Head of Media & Communication





Borrell shakes hands with Ukraine's Foreign Minister Dmytro Kuleba in Brussels on 3 April 2023.

ENHANCING OUR CAPACITY TO DEFEND OUR INTERESTS

The Head of the European Defence Agency (EDA) and High Representative/Commission Vice-President, **Josep Borrell**, analyses how far the EU has come since Russia's invasion of Ukraine. After EDA welcomed Denmark and formalised ties with the United States, Borrell salutes the EU's defence partnerships and urges greater complementarity to develop coherent and interoperable defence capabilities.

The European security and defence landscape is undergoing a tectonic shift. Russia's brutal and unprovoked invasion has devastated large parts of Ukraine, killing many innocent civilians and deepening economic insecurity around the world. It was a blatant violation of the UN Charter, which undermines the principles of a rules-based international order.

Instead of dividing us Europeans, Russia's aggression has united us more than ever, triggering a major revamp towards greater European integration and cooperation on security and defence.

Our response to the invasion has been fast and unprecedented, breaking many taboos along the way. Since the war started, we have provided vast amounts of political, economic and military support to Ukraine to defend its independence, sovereignty and territorial integrity, while hitting Moscow's ability to finance its war of aggression

through 11 comprehensive packages of sanctions.

When it comes to the vital issue of ammunition support, 26 states have signed EDA's project arrangement for the collaborative procurement of ammunition in support of Ukraine, and to replenish stockpiles. The project opens the way for our Member States and Norway to proceed along two paths: a two-year, fast-track procedure for 155mm-calibre artillery rounds for the Ukrainian Armed Forces and a seven-year project to acquire multiple ammunition types.

In tandem, we have approved a further €1 billion under the European Peace Facility (EPF) to finance the joint procurement of 155mm artillery rounds and missiles in support to Ukraine. Together with the previous decision to swiftly deliver ammunition from existing stocks, we are committing €2 billion for this purpose, bringing the total EU military

support to Ukraine through the EPF to €5.6 billion. This has incentivised deliveries of military equipment for more than €10 billion.

We are also training Ukrainian soldiers in the EU Military Assistance Mission Ukraine (EUMAM). In April, we reached our first target of training 15,000 soldiers, helping to defend Ukraine and its citizens. The new target is to train 30,000 soldiers, double, by end of year. At the current pace, we expect to reach this target before then.

In the broader European defence landscape, Finland has joined NATO, ending years of neutrality. Sweden is set to follow. And I am delighted to welcome Denmark into the EU's Common Security and Defence Policy, into EDA and into the Permanent Structured Cooperation (PESCO) (*see EDM page 10*).

Looking ahead

While our priority remains to provide Ukraine with the military support it needs to



In his role as EU High Representative for Foreign Affairs and Security Policy, Borrell addresses the United Nations General Assembly in New York on 25 February 2023 to condemn Russia's invasion of Ukraine.

defend its sovereignty, we must also start to draw longer-term lessons for EU defence. Faced with the return of large-scale state-to-state conflict to Europe, we must ask: what must our future military capabilities look like?

The adoption of the Strategic Compass in March 2022 signalled the EU's determination to develop a more capable, deployable, interoperable and sustainable set of military capabilities. This means ensuring the readiness of European militaries, producing weapons that Member States can use together, also in the NATO framework, and strengthening the role of EDA in fostering defence innovation across the board. The work of our innovation hubs will be critical in ensuring that innovative dual-use technology benefits our armed forces (see EDM pages 30 and 32).

It is clear that it is not enough to increase our defence spending, but that we must

above all use and increase resources in a more coordinated way: with cooperation among Member States and in coherence with NATO.

Implementation of the Strategic Compass across all its dimensions remains at the top of our political agenda. This also includes its partnership dimension and I am very glad to see that, just one year after the adoption of the Compass, we are making good progress also in strengthening our collaboration with partners in the field of defence.

We have signed an Administrative Arrangement between EDA and the U.S. Department of Defense that will serve as a framework for even deeper collaboration (see EDM page 16).

In January, the third Joint Declaration on EU-NATO cooperation identified new areas of cooperation including resilience, space,

"Our response to the invasion has been fast and unprecedented, breaking many taboos along the way"

climate and defence, as well as emerging and disruptive technologies.

And our close partnership with Norway also continues to bear fruit, especially in this new strategic context (see EDM page 20).

Bringing cooperation to the next level will mean that we work to avoid duplication and develop coherent and interoperable defence capabilities. At EDA, in the wider EU and with our partners, we are working daily towards that goal. [▶](#)

"THE AMBITION REMAINS TO ACT WITH PARTNERS WHEN POSSIBLE, ALONE WHEN NECESSARY"

In his post since 2022, **Pål Jonson** is Sweden's Minister for Defence. Prior to becoming minister, Jonson was a member of parliament and chair of the parliamentary committee on defence. He has dedicated his career to defence, security and foreign policy, including at the Swedish Security and Defence Industry Association and as a political adviser to the Ministry of Defence in 2006-2007. As Sweden steps up its support to Ukraine, Jonson speaks to *European Defence Matters* about NATO membership, Sweden's 'total defence' and how national priorities can also help forge a more robust European approach.

Ukraine was the geopolitical issue dominating Sweden's EU presidency. As Russia's invasion continues, how do you judge Swedish support to Kyiv?

The focus on supporting Ukraine has been a top priority of Sweden's EU presidency, and it's also an overarching national priority too. The ambition is to provide Ukraine with as much support as possible, nationally and through the EU. During the Swedish presidency, the EU has so far taken decisions on a seventh package of military equipment funded through the European Peace Facility (EPF). Additionally, the EU, under the Swedish presidency, is dedicating an additional €2 billion from the EPF to facilitate the provision of artillery ammunition to Ukraine. These decisions will significantly contribute to the Ukrainian defence of its territorial integrity and security of its people.

Then there is the EU's military training mission, EUMAM Ukraine, which is moving ahead rapidly. Sweden's national contribution became operational in April 2023 and some 15,000 soldiers have so far been trained by the EU mission.

Sweden has, as the EU presidency chair, ensured that the support to Ukraine remains at the top of the agenda. The informal ministerial meeting in Stockholm in March was an important stepping stone in this regard, both for making progress regarding the provision of artillery ammunition, and for taking stock of EUMAM via the mission's force commanders who briefed Ministers of Defence. Against this background, I would argue that the presidency has made a strong contribution to the political and military support of Ukraine.

When it comes to defence, Europeans are still greatly dependent on the United States. Does that need to change, and if so, how quickly?

EU-U.S. cooperation is exceptionally intense, broad, and deep. The strength of the transatlantic partnership was tested by Russia's unprovoked and unjustified aggression against Ukraine. The verdict is clear: the transatlantic bond is rock-solid and is growing even stronger. Furthermore, the transatlantic community remains a cornerstone of European security, in which NATO is the provider of collective defence.



A Swedish and a Finnish soldier pose together for a photograph.

There is, however, a need for a strong Europe that takes greater responsibility for its own security, within the framework of the overall Euro-Atlantic security architecture. The EU's Strategic Compass provides an important roadmap for the coming years and enables the building of a stronger, more capable Europe, in conjunction with NATO and strategic partners. The ambition remains to act with partners when possible, alone when necessary. A stronger transatlantic link is not contradictory to a stronger Europe. In fact, they are mutually reinforcing.

Some Member States talk of resilience, others of strategic autonomy, others of developing hard power. What is the Swedish view?

Against the backdrop of increased power competition and the return of war to Europe,



© Swedish Armed Forces

aph at Rinkaby shooting range in southern Sweden on 7 May 2023, during the national military exercise Aurora 23.

"The Swedish concept of total defence is based on the idea of involving the whole of society in the defence efforts"

It is clear that the EU has no option but to develop into a stronger and more coherent geopolitical actor. Through the EU's Strategic Compass, Member States have agreed on an ambitious plan of action for strengthening the EU's security and defence cooperation, which Sweden fully supports. Our focus now needs to be on improving our common ability to act. In our view, strategic autonomy should be interpreted as a relative concept.

Full strategic autonomy is not realistic and arguably not even desirable.

As I touched upon earlier, NATO is the provider of collective defence, while the EU has an important role in military and civilian crisis management, and pooling resources for capability development. There is a clear division of labour between the organisations within security and defence. The unique added value of the EU is its broad toolbox encompassing both military and civilian instruments. This is particularly true when it comes to the ability to bridge and connect internal and external security.

So are you saying that the EU has a unique set of tools in defence?

Yes, and if combined in a smart, comprehensive, and effective way, they can

be employed to address challenges that lie below the threshold for armed conflict. Such tools are particularly useful for tackling threats on our doorstep and the nexus between internal and external security, for example regarding failing states in our neighbourhood, hybrid and cyber threats, disruptive technologies, organised crime, violent extremism, and terrorism.

I would also argue that the determined resistance by Ukraine's society at large against the Russian invasion is an intense demonstration of the central importance of resilience in the face of external shocks. It is important to learn and implement the lessons of how Ukraine combines civil and military resources and how that is currently helping in fighting for their independence. The Swedish concept of total defence is →

based on the idea of involving the whole of society in defence efforts.

Could you elaborate? What exactly is total defence?

Total defence includes both military and civil activities. Resilience in society, as well as strengthening resilience in important societal functions, is key to the total defence concept. The overall goal of Swedish total defence, which is not an individual organisation, is to have the ability to defend Sweden against an armed attack and protect our security, freedom, independence, and freedom of action.

How will joining NATO change Sweden's approach?

For Sweden, Russia's invasion of Ukraine led to a political paradigm shift. From now on, our overall security policy will be shaped by greater realism. NATO membership and a heavy rearmament of Swedish defence are immediate consequences of this insight.

As a member, NATO will become Sweden's most important defence platform. NATO's responsibilities will also be Sweden's responsibilities. We are determined to be a net security provider to NATO, contributing to the security of the whole Euro-Atlantic community in line with NATO's 360-degree approach. Sweden is currently making historic investments in both military and civil defence, in order to strengthen our capacity to defend Swedish territory and to contribute to the collective security of the Alliance. Through NATO, Sweden will take a greater responsibility for our common security and safeguarding Western democratic values.

As the EU presidency country since January, Sweden has played the central role on behalf of Member States to further the bloc's new legislative proposals. One file is the 'European Defence Industry Reinforcement through common Procurement Act' (EDIRPA). It was originally due to be approved at the end of last year under the Czech EU presidency. Why has it been so difficult?

In general, the legislative procedure always requires time for negotiation between the European Commission, the Council of the European Union, and the European Parliament. There needs to be enough time for both the



Jonson takes questions from reporters during an informal meeting of Ministers of Defence in Stockholm on 8 March 2023.

Council and the Parliament to adopt their respective opinion before being able to start the negotiations.

The proposal for EDIRPA was presented on 19 July 2022, and the discussions between the Member States in the Council started right after the summer holidays in September, with the Council adopting its position on 1 December. The Czech presidency and Member States managed to find a balance between different interests. Sweden supported this position when we took the helm of the presidency in January.

I was personally in the European Parliament in January to explain the position taken by the Council, among other topics continuously discussed with the Parliament. For different reasons, the Parliament decided for shared responsibility between several committees and subcommittees with different competences and views. This took some time to navigate, but finally the Parliament was in a position in late April 2023 to commence the trilogue with the Council and Commission.

Do you believe the EDIRPA legislative files can become law before the 2024 EU elections?

We reflect positively upon the progress that has been made. In recent weeks, the Parliament at committee level has agreed

on its negotiating mandate. With the validation of the Parliament mandate in plenary, we can start the trilogue. The aim is to reach a provisional agreement by the end of June 2023.

Given the progress made on joint procurement in the past weeks, do you believe that EDIRPA will come too late, or is possibly no longer necessary?

There is currently a strong focus among Member States to try to coordinate efforts, especially in the recent discussion regarding the joint procurement of ammunition. EDIRPA as an instrument to incentivise joint procurement would still be applicable for some time and I believe that it could still be used to some extent. However, we note that it seems that the main problem currently for ammunition does not seem to be the lack of demand but rather a lack of production capacity.

I think that some of the elements in the EDIRPA proposal have already gained traction. For instance, joint procurement programmes and initiatives of ammunition, and possibly missiles, are underway. The European Defence Agency project on Collaborative Procurement of Ammunition (see EDM pages 36) is one example of this. The recent proposal from the Commission on 'Act in Support of Ammunition Production'



Two Swedish fast assault craft train together during the national military exercise Aurora 23 on 4 May 2023.

(ASAP), with proposed ideas on opening up existing contracts to cater for others to join, is also a step in that direction.

How do you think the EU should work to ensure that increasing defence budgets are spent co-operatively and efficiently?

Just as EU and NATO members only have 'a single set of forces', each state only has a 'single defence budget', meaning that all states must work on smart and efficient ways to maximise the output from their resources. It is vital that the EU strives towards coherence of output in line with the ongoing NATO capability process to avoid unnecessary duplication, and to ensure that increasing defence budgets are spent efficiently.

Furthermore, Sweden actively seeks to identify synergies between the different EU defence tools and initiatives, for example in Permanent Structured Cooperation (PESCO), the European Defence Fund (EDF), Capability Development Plan (CDP) and the EU defence review CARD, in order to maximise the output of our investments and our strategic projects.

According to the latest EU defence review, Member States generally consider cooperation only when it coincides with national plans, benefits national industry, or consolidates a strategic partnership.

Is EU defence coordination just too complicated?

National security is the sole responsibility of each Member State. National priorities are, and should be, the main focus, but we should strive to make them useable in a multinational context. National operational requirements remain one of the driving forces for capability development in each Member State and these contribute to strengthening the common European defence capacity.

Capability development is fundamentally a national responsibility and Member States have different conditions and needs. However, cooperation is an important factor in the development of capabilities. For the Member States that are also part of NATO, the NATO Defence Planning Process (NDPP) and operational planning are the primary tools for harmonising national plans with collective needs.

The EU has an important complementary role in relation to the national plans and to NATO.

Sweden intends to continue its active engagement within European defence cooperation using tools and initiatives such as PESCO, EDF, CDP and CARD to contribute to and improve a European collaborative approach and capability development of national, regional, and European value.

These tools offer valuable inputs to Swedish national planning processes and capability development in many ways.

In addition, involvement in the Nordic Defence Cooperation (NORDEF) consisting of Denmark, Finland, Iceland, Norway and Sweden, as well as the Finnish-Swedish cooperation, supports the strengthening of the capability development in the EU.

Finally, when it comes to building a stronger European defence industrial base, do you believe that other non-EU countries, such as Turkey and Britain, should be included?

The new security situation has indeed accentuated the need to rethink and review some of the previous strategies. Throughout its presidency, Sweden has stressed the importance of the European Defence Technological and Industrial Base (EDTIB), which we believe is built upon excellence through competition and diversity. This requires a well-functioning EU single market. Competitiveness and diversity in technological solutions and industrial capacities are important to promote innovation and value for money.

An important factor is also to continue the efforts between EU and NATO. Factors such as interoperability and interchangeability must be emphasised more, but also the defence and security interests of the Union. I want to emphasise the importance of dialogue and cooperation with industry to identify the factors that create constraints and find the most effective solutions to avoid them. Industry has a very important role in this adaption to the new security environment.

Finally, in a national context, we've just initiated the development of a defence and security strategy for space. This strategy will describe our strategic goals and priorities, considering the EU space strategy for security and defence.

We're also launching the Swedish defence innovation initiative. The aim is to increase our capability to transform and adopt new technologies, mainly from the civil sector – for defence applications – to maintain the technological edge. This initiative also corresponds with different EU initiatives in this area. [K](#)

Denmark joins EDA

"WE ARE WITNESSING AN ALIGNMENT AND A STRENGTHENING OF INTERNATIONAL MILITARY TIES IN ALL FORA"



Kasper Høeg-Jensen is Denmark's Deputy Permanent Secretary for Security Policy and Operations at the Danish Ministry of Defence after a distinguished diplomatic career. From 2013 to 2014, he was the director of the private office of the NATO secretary general. In the following column, he explains how joining the European Defence Agency (EDA) and European Union defence initiatives can help Denmark and Europe better navigate a more uncertain world.

The Danish referendum last year and the vote to end the defence opt-out was historic. With a large majority of 66.9%, Denmark sent a clear message to our allies in Europe. With the broad support of the population and in parliament, we received a firm mandate to engage in EU defence policy.

After opting in, joining EDA and Permanent Structured Cooperation (PESCO) were important milestones. With the decision to join EDA in March and PESCO in May of this year, the last remnants of the opt-out were removed and Denmark became a full member of European defence cooperation.

We are happy to be here.

It is a steep learning curve for us, trying to catch up with 20 years of cooperation. We are taking an incremental approach – step by step. We are a newcomer. But among good and old friends, which is an excellent starting point for the cooperation. The war in Ukraine is changing the European defence and security landscape. We are all drawing lessons for the future development of our armed forces and for the means and ways of our international cooperation.

We are witnessing an alignment and a strengthening of international military ties in all fora – EU, NATO and others. Our participation in EDA and PESCO is evidence of this. On a strategic level, there is great potential in EDA in facilitating cooperation and coordinated development between Member States.

And at a time when Europe must take a larger responsibility for its own security, this is more important than ever.

With a full-scale war in Ukraine, it is clear that having robust capabilities, sufficient stocks and a capable industry is vital for national security. It is a strategic question for Europe, and one that we as a smaller country must cooperate on with others. So is defence innovation, to meet the threats of tomorrow.

Hence a clear priority for Denmark is to investigate how we can better integrate industrial actors, including SMEs, research institutions and sub-suppliers in the capability development processes.

PESCO's 'More binding commitments'

PESCO brings with it concrete and operational value. For us as Member States

and for European security. The Danish government has made it very clear that we intend to actively contribute to increased defence cooperation in the EU, in close cooperation and in complementarity with NATO.

Denmark is already shouldering responsibility for European security. A helicopter doctor in Operation Althea in Bosnia-Herzegovina was our first contribution to an EU mission after removing the opt-out. We are now contributing to the EU's military training mission, EUMAM Ukraine.

We are exploring further possibilities, also in regard to new EU missions and operations.

With participation in both EDA and PESCO, we are also preparing engagement in the defence capability planning processes. From the onset figuring out the best practices to integrate these into our national defence planning. For Denmark, participation in PESCO also means that we can now benefit from being part of important and relevant projects.

From the onset, we will apply for participation in the PESCO projects on



A Danish soldier hides in a wooded area during NATO's exercise Crystal Arrow in Latvia on 26 March 2023.

Military Mobility and Cyber Rapid Response Teams. These projects are good examples of the added value that EU cooperation brings to the international defence landscape.

We look forward to engaging in more projects going forward. We are now in a position to explore the opportunities in greater detail, including the many relevant capability projects.

New threats

The security landscape has dramatically changed. We are facing a darker and more severe security situation with tensions at the eastern borders, in the Baltic Sea and in the Arctic.

In this new reality, Europe must take greater responsibility for its own security. Here it is in our interest to actively engage and contribute. And to work for close cooperation and complementarity with partners and allies.

We are faced with new threats. Terrorism, cyber and hybrid threats are setting new demands for our societies and our armed




Denmark's acting Minister of Defence Troels Lund Poulsen shakes hands with Josep Borrell, the EU High Representative and Head of EDA, in Brussels on 23 May 2023.

forces. Simultaneously, our security of supply and value chains are under pressure. The global technology competition challenges our innovation ecosystem.

The European defence industry is geared towards peacetime. But the war in Ukraine and increased defence budgets across Europe are resulting in capacity shortages. A strengthened European Defence Technological and Industrial

Base (EDTIB) is a strategic question for Europe.

This is a structural challenge that must be addressed at a structural level. The EU has an important toolbox to address industrial challenges.

With the removal of the opt-out, we have a seat at the table and can influence the direction and priorities going forward. We are indeed very happy to be here. 



"WE ARE UNLOCKING THE POTENTIAL OF EUROPEAN DEFENCE COOPERATION IN NEW AREAS, WHILE DEEPENING IT IN OTHERS"

Helena Carreiras, Minister of Defence of Portugal, is the country's first woman to hold the top job. A specialist in military sociology and a university professor, Carreiras took up her post in March 2022. In the following interview, she reflects on what Russia's invasion of Ukraine means for the EU and NATO, and how Portugal will develop the European Defence Agency's (EDA) Multinational Helicopter Training Centre when it takes over at the end of 2023.

Anyone following the debate on European security might notice that there is a lot more to tackle than just money and cooperation. The EU's long-term ambition to enhance women's involvement in the Common Security and Defence Policy (CSDP) shows the bloc's dedication to upholding human rights, fortifying missions and operations, and advancing gender equality.

So it did not go unnoticed that in March last year, Portugal – a founding member of



"Defence cooperation at the EU level takes many forms, while allowing Member States to remain autonomous. And this is positive"

© Portuguese Air Force

NATO – appointed Helena Carreiras as its defence minister, joining countries such as Austria, Belgium, Czechia, Latvia and the Netherlands in shifting the paradigm towards greater gender balance at the highest level.

Carreiras brings with her an intellectual rigour. She was the first woman to head Portugal's National Defence Institute, a public institution to support national strategic thinking. She also has taught and written widely on security and defence, and civil-

military relations. She has chaired a number of military education and research posts both in Lisbon and at the European level.

"From the Portuguese perspective, defence cooperation between EU countries is paramount," she says. "Defence cooperation at the EU level takes many forms, while allowing Member States to remain autonomous. And this is positive," Carreiras says. "We are unlocking the potential of European defence cooperation in new areas, while deepening it in others."

For Portugal, as an Atlantic country, the approach makes sense because different countries have different strategic interests and capabilities. With a long naval tradition, Portugal is critical in protecting transatlantic sea routes.

Even so, the impact of a bitter land war in Europe is not lost on Carreiras. "The war in Ukraine has had an inevitable impact on our view of European defence," she says. Despite its western geographic position, →



Minister Carreiras converses with NATO Secretary General Jens Stoltenberg during a break in the meeting of EU Ministers of Defence in Brussels on May 23 2023.

Portugal is helping to reinforce NATO's eastern flank, while also providing support to Ukraine. Carreiras visited Kyiv in February on the first anniversary of the war.

"The war boosted and accelerated our cooperation as Member States, but it also had an impact on how we perceive the role of EU organs and institutions. Similarly, there is further development of new possibilities regarding synergies with NATO in several domains. NATO's enlargement, triggered by the war, has made this even more evident."

Channelling Aristotle: The whole must be greater

European countries should tackle the long years of underinvestment in defence, Carreiras says. "We must take decisive steps, at a good pace, to ensure the security of Europe. This encompasses two things: that our armed forces are interoperable, capable, and combat ready, and that we have a strong, competitive European Defence Industrial and Technological Base (EDTIB)," she asserts. "We must aim for a

true EDTIB, which must be greater than the sum of our national parts."

It must not be dominated by a few large companies, either, she says. "Greater cohesion and the effective integration of small- and medium-sized enterprises (SMEs) is fundamental to ensure a more integrated EDTIB, instead of only a few larger companies from only a few larger Member States providing the necessary capabilities."

When it comes to the European Defence Fund, the EU still needs a longer-term strategy, she says.

"There are two aspects that we must look carefully at: the time it takes to fully develop a military defence capability; and, on the other hand, the fact that the European Defence Fund (EDF) is still part of an industrial policy and not a part of a truly integrated defence policy," Carreiras says. "It is thus vital to strike a balance between 'big' and 'small' projects: multiannual

flagship projects must support the cross-border participation of SMEs and research organisations to promote the EDTIB's level playing field in the EU."

In addition, Carreiras says: "We must take into consideration, and act upon, the importance of all operational domains – including outer space and cyberspace – and how important the exchange of information and cooperation are in the current context."

Carreiras sees opportunities stemming from the possibility of increasing the EU's budget, the Multiannual Financial Framework (MFF) – including the EDF. She says there may be a correlation between the EDF and the acceleration of the development of the EDTIB by making mandatory the establishment of consortia between companies from different Member States. "That improves the integration and transfer of knowledge, carrying added-value for them and for the Member States' armed forces – the final buyers."

However, she is clear that the EU first needs to understand its shortfalls. That is work done in part by EDA and the EU's defence review (CARD) and the collaborative procurement arrangement (see EDM page 36). "We must look to the future and consider the possibility that the war in Ukraine continues and that other threats may also come from the south. This is paramount for appropriate capability planning – in alignment with NATO, as much as possible."

She has a word to the wise, too. The war in Ukraine "makes it clearer that we cannot respond to Russia's expansion ambitions alone," Carreiras says. Still, she adds: "The European Union will continue to stand by Ukraine, just as Portugal will, as far as we can and for as long as is needed."

More progress now than in decades

Beyond Ukraine, today's security environment contains a wide and growing set of challenges. As both an Atlantic and European country, Portugal has always championed a 360-degree approach to security and defence in the Euro-Atlantic space. Portugal is involved in 24 missions and operations in 12 countries.

Portugal's historical link with Africa also plays a role. "We must look at what is happening all around us that may affect European security, and this includes paying attention to the Global South." Carreiras is clear that the EU and NATO must pay particular attention to the Sahel and West Africa, including the Gulf of Guinea, where maritime piracy and transnational terrorism are proliferating.

"But we must do so through an effective, integrated approach, not only focusing on the conflicts themselves, but also their root causes. This approach should render our action on the ground more sustainable," she asserts.

Carreiras ends on an optimistic note, despite such a dangerous moment in European security. Ultimately, she believes, if the work of EDA, the EU institutions and

Member States continues, deeper EU defence collaboration is achievable and in everyone's interest.

"In recent years, we have seen more happening than in the decades since the creation of the Union," she says. [K](#)



Portugal takes over the EDA's Multinational Helicopter Training Centre (MHTC) programme at the end of 2023. Today, EDA runs three helicopter training programmes in its training centre at the Sintra military complex in Portugal. These three programmes will be integrated into the MHTC from January next year. In 2026, Full Operational Capability (FOC) should be achieved.

Helena Carreiras, Portugal's Minister of Defence, talks about what to expect.

"With new infrastructures including a new simulator, we have the conditions to provide new courses or activities, always evolving according to the participants' needs. The MHTC's mission is to improve European military helicopter interoperability and capability through a coordinated approach to training, tactics, techniques and procedures as well as doctrine.

"Portugal wants to be an active player in European defence, contributing to the improvement of European military capabilities. The MHTC is a strategic investment for our country, and we are committed to supporting the centre, not only in the beginning but also in its daily activity.

"A good example of the Portuguese commitment to this project is the Hot Blade exercise. This multinational helicopter exercise is one activity of the Helicopter Exercise Programme, and Portugal has been the country where this exercise has been held the most frequently.

"Portugal hosted the exercise in 2023, which will be the last one under the aegis of EDA, while the 2024 event will be the first one run by the MHTC. Our first challenge is to consolidate these programmes into the MHTC, which should remain a flexible tool to support nations' operational needs. As such, the expectation is that the MHTC will continue to evolve and adapt to new courses and additional activities, as sponsored by the participating nations, planning new initiatives and improving coordination and interoperability. We hope that the MHTC will become an interoperability enhancer and force multiplier in the EU, and for the EU."



EDA Chief Executive Jiří Šedivý and U.S. DoD Under Secretary of Defense for Acquisition and Sustainment William LaPlante shake hands on 26 April 2023 as (left to right) U.S. Principal Deputy Assistant Secretary of Defense for Industrial Base Policy Michael Vaccaro, U.S. Ambassador to the EU Mark Gitenstein, EDA Deputy Chief Executive André Denk, and the Agency's former deputy chief executive, Olli Ruutu, look on.

ADMINISTRATIVE ARRANGEMENT BETWEEN EDA AND U.S. DEPARTMENT OF DEFENSE

The EU-U.S. summit of June 2021 marked the beginning of a renewed transatlantic partnership and set a joint agenda for EU-U.S. cooperation in the post-COVID-19 pandemic era. In the summit's final statement, leaders committed to work towards an Administrative Arrangement between the United States Department of Defense and the European Defence Agency (EDA).

Several rounds of negotiations took place in Brussels and Washington D.C. to bring a final text for signature in April 2023, formalising a framework for cooperation. The Administrative Arrangement provides for stronger transatlantic cooperation in defence in specific areas, including in the exchange of information.

"WE MUST STICK TOGETHER, AND WE MUST COOPERATE"

In the following column, EDA Chief Executive Jiří Šedivý reflects on what the Administrative Agreement means for the Agency and for transatlantic relations.

The stakes could not be much higher. We have seen the return of full-scale war to Europe, and two powers – China and Russia – seek to reshape the international system of the past seven decades. In this light, the transatlantic bond is not just a unique relationship stretching across the Atlantic Ocean. It is the strength and shield of our democracies, our values and the rule of law.

So what better way for the EDA and the U.S. Department of Defense to show their commitment than to cement ways to work more closely together? The question is rhetorical, but I believe that we have also designed a new agreement that is a basis for a new, broad cooperation.

We at EDA have so far concluded Administrative Arrangements with four other countries: Switzerland, Norway, Serbia and Ukraine, as well as with two organisations - OCCAR and the European Space Agency. An AA is a legal instrument. Each is tailored to the respective third country or organisation and therefore is different in every case, while the scope of cooperation can evolve over time, based on mutual interest and EU Member States' agreement.

In the case of the United States, the Administrative Arrangement will enable a substantial defence dialogue on selected topics within EDA's areas of expertise. It will allow invitations for the U.S. Department of Defense to attend relevant meetings of EDA's Steering Board – as well as vice-versa, with EDA joining meetings convened by the U.S. DoD as appropriate.

Secondly, the arrangement allows for U.S. participation in the open session of the European Defence Standardisation Committee (EDSC), as we strive to work towards interoperability and even interchangeability across all our forces.

Thirdly, the AA is only the beginning of structured dialogue. As my colleague Bill LaPlante explains in *European Defence Matters* (see page 18), our areas of discussion are not limited to any strictures, although during our negotiations, it was agreed that the initial scope of cooperation must avoid any export-control implications.



We will start with supply chains, military mobility, standardisation, climate change and information exchange on some wider EU policies such as REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) and its impact on military activities and the defence sector at large.

As the war in Ukraine and the COVID-19 pandemic have shown, our supply chains are vulnerable. In support of NATO and to maintain the readiness of our troops, we must also be able to move our armed forces and materiel quickly across borders. Climate change is both a crisis multiplier for the military and an opportunity to use carbon reductions to become more efficient. The EU Green Deal has shown our world-leading level of ambition. But it will not, on its own, solve the climate crisis.

Most importantly, as well as demonstrating the transatlantic partnership in action, through the AA we at EDA can help deepen our involvement in developing a stronger and more capable European defence that is complementary to, and interoperable with, NATO. The potential threats in the EU's neighbourhood call for the development of credible capabilities. At a time when the United States must focus more of its limited resources on the Indo-Pacific, we can uphold our security in Europe. Meanwhile, the overlap between NATO's Strategic Concept and the EU's Strategic Compass, and the third Joint Declaration on EU-NATO Cooperation show how we can reinforce our relationship.

This Administrative Arrangement is part of one of the most important things that we can do together: to foster a healthy transatlantic relationship and seek a more equal division of labour in security.

I am reminded of U.S. President Joe Biden's words at the 2021 EU-U.S. summit. Quoting Irish poet W. B. Yeats, he said: "The world has changed, changed utterly." We in the West are facing enormous challenges today, but our transatlantic bond will remain. The timing of this Administrative Arrangement could not be better. We must stick together, we must cooperate.

"WE'RE ALL AFTER THE SAME THING, WHICH IS ECONOMIC, COLLECTIVE AND NATIONAL SECURITY"

Dr. William A. LaPlante is the United States Under Secretary of Defense for Acquisition and Sustainment, responsible for areas ranging from logistics and materiel readiness to the industrial base. A physicist by training and former president and chief executive of nonprofit engineering innovation company Draper Laboratory, Dr. LaPlante speaks to *European Defence Matters* about why the Administrative Arrangement can help sustain the transatlantic bond.

The framed photo portraits of former European Defence Agency (EDA) chief executives look down from the wall as the Beaujolais meeting room empties and U.S. Under Secretary of Defense for Acquisition and Sustainment Bill LaPlante leans back in his chair. With the photo call, speech, signing ceremony and inaugural meeting in the Agency's Brussels headquarters now over, so come the questions. What exactly is the Administrative Arrangement all about?

As a scientist with almost three decades of experience in defence technology and a former assistant secretary of the U.S. Air Force – where he aligned a multi-billion-dollar budget with aviation strategy – LaPlante is surely well-placed to explain the U.S. perspective.

"I would say it starts with the U.S. national defence strategy of last year. A key part of that is: allies and partners," he says. "That's not just words, it is really meant to be actions, because we know that collective security in the world is going to rely upon like-minded nations sharing the same values and the same principles. This (Administrative Arrangement) is an action."

Given that the European Union is already a strategic partner of the United States and that the broader American strategy is guided by its desire for a 'Europe whole, free and at peace', an Administrative Arrangement might seem unnecessary to all but the connoisseur.

But in the sensitive world of defence and technology – and after full-scale war has returned to Europe in 2022 – LaPlante asserts that the arrangement provides a framework for regular dialogue that did not exist before, allowing both sides to iron out aspects for unhindered and technical exchange of information that were not as easy in the past. "We have put together a safe platform for collaboration. We didn't have that before this agreement."

While the genesis of the Administrative Arrangement was in the EU-U.S. summit of 2021, LaPlante underlines that the war in Ukraine has made the need to work together more crucial. "It's taken it out of the theoretical and the abstract," he says. "We need to take actions together ... which will be followed up with other common approaches ... even doing joint production. I think what (the war in Ukraine) did is made it all starkly relevant and urgent."

Who, or what?

A nagging question is whether this kind of agreement might have just been done through NATO. LaPlante is matter-of-fact, but also

confident of EDA's potential. "I suppose it could have been, but I think as the EU matures, as the EDA matures and gets where its centre of mass is going to be, it's going to be complementary," he explains.

For LaPlante, one clear example is the EU's decision to replenish Member States' stocks and help arm Ukraine to defend itself, including on the issue of joint procurement of 155mm artillery rounds. "It's very, very complementary to many things NATO is doing, or individual countries are doing."

Indeed, for LaPlante, the focus should be less on the separation of the kinds of work by institution and more on the tasks at hand. "I think if we focus less on the 'who' and more on the 'what', then we can say: 'well, who is best postured to do it? Is it the EU, EDA? Is it NATO? Is it somebody on their own?' I always find if you focus on the 'what' then the 'who' often sorts itself out."

Potential cooperation on 3D printing

Although not yet foreseen, industry may one day be part of the Administrative Arrangement, LaPlante says. "There could very well be an Industrial Advisory Group, for example, where industry could come together and tell us what their challenges are, what their requests are, and vice-versa, and be able to have a constant dialogue."

It is in such an approach that LaPlante reaches for examples of how the Administrative Arrangement should bring benefits, whether it be on supply chain issues – where both sides can share information, lessons learned and where the bottlenecks are – or the production of individual items. "And the 155 is a great example where we can look together at what countries can produce them, what ability these different companies or government facilities have to search for them," LaPlante says.

Beyond 155mm artillery rounds, LaPlante has other examples where this new forum could yield results, namely in additive manufacturing. "If you could 3D-print a part that would go on an airplane and that was airworthiness-critical, that would be a major achievement," he says. He envisages cooperation where EDA and U.S. DoD can share with each other designs and technical data packages to allow the 3D printing of parts that previously would only be able to be produced in one country.

Ukraine's approach, for example, to overcoming weapons' supply chain and stockpile delays has been to 3D-print spare parts, even



if intellectual property concerns might normally be an issue in peacetime. With as many as 600 different weapons systems now being operated by Ukrainian forces, repair and the need to overcome inventory shortfalls are crucial. "We're seeing this right now in Ukraine and that is exciting," says LaPlante.

Climate, security

Meanwhile, the Administrative Arrangement is foreseen to address military issues linked to our changing climate. In the United States, officials already look at policy from a 'mission success' perspective, making operational energy improvements that should in turn help with reducing the armed forces' carbon footprint and impact on the climate. But they should also enable any military mission to be more effective.

"Think about all the energy – no pun intended – and money spent on the resupply of fuel, particularly for air power and how much is consumed," La Plante says. "As we move to more efficient ways of working, with engines that are more efficient, or go to electric vehicles on the ground, it benefits the planet, it also benefits the military," he asserts.

When it comes to such issues, the United States has a very committed partner. Through the European Green Deal, the EU aims to become climate neutral by 2050. "I think there's a lot that the Defense Department of the U.S. can learn from the Europeans, because in some of these issues, the Europeans may be ahead of the United States."

LaPlante says U.S. and European efforts already overlap. "We're putting energy capacity requirements into the new weapons and military systems, and I think the Europeans are doing the same thing." For example, new surveillance aircraft might be designed to have 30% more fuel efficiency than today. In the Administrative Arrangement, both sides can share their best practices and also research.

Ultimately, LaPlante says, the Administrative Arrangement sends a very strong message to friend and foe alike that the transatlantic bond is alive. "We're all after the same thing, which is economic, collective and national security for our citizens," LaPlante says.

"We have put together a safe platform for collaboration. We didn't have that before this agreement"



Dr. LaPlante takes part in the first meeting of the Administrative Arrangement, flanked by Ambassador Gitenstein and Mr. Vaccaro.



Top EDA officials pose for a photo before the inaugural meeting of the EDA-U.S. DoD Administrative Arrangement on 26 April 2023.



Dr. LaPlante speaks to *European Defence Matters* editor Robin Emmott during an interview on 26 April 2023.



© Norwegian Ministry of Defence

Bjørn Arild Gram meet's Ukraine's President Volodymyr Zelenskyy on 10 March 2023.

"We can increasingly use EDA as an arena to develop NATO-relevant Nordic cooperation"



Seeking the most pragmatic and efficient way to help Ukraine

NORWAY AS A CLOSE EDA PARTNER

Bjørn Arild Gram became Norway's Minister of Defence in April 2022, just over a month after Russia's unprovoked invasion of Ukraine. At a very critical time for European and international security, he talks to *European Defence Matters* about how to ensure that Ukraine remains free and democratic, what having Sweden and Finland in NATO will mean and how Oslo works closely with the European Defence Agency (EDA).

Norway and EDA signed their Administrative Arrangement in March 2006. What has been the most critical, or useful, aspect of having an AA?

Norway is not a member of the EU, but we do cooperate extensively with other European countries, including EDA Member States. The Administrative Arrangement allows us to continue this cooperation in the framework of EDA. We appreciate EDA's bottom-up and practical approach to cooperation on defence matters. EDA is a solid platform for cooperation where we see that Norwegian interests overlap with those of our European friends and allies. With Finland having joined NATO, and Sweden hopefully following soon, we see that there is potential for more cooperation here, also in the framework of the EDA.

Research and technology (R&T) is the area where cooperation between EDA and Norway is the deepest. Why would you say that is?

R&T is an important field for Norway, so it is no surprise that this is also reflected in our engagement with EDA. The Norwegian Defence Research Establishment (FFI) has also excelled in leading Norway's efforts in this field. They are certainly part of the success formula. As I mentioned, EDA's bottom-up approach, where sovereign nations with overlapping interests come together to pursue joint endeavours, is the key to EDA's success, especially in the R&T domain.

As a member of NATO, Norway is also backing the EU training mission in Ukraine –

EUMAM. What is your approach to partnerships?

I would like to commend the Ukrainian armed forces for sending personnel to other countries for training while they in parallel are fighting a war. Ever since I became minister I have been clear in my support for Ukraine and a willingness to do what I can to ensure that we aid them wherever possible. EUMAM is one way in which we have channelled such support, and we have also supported Ukraine through national donations and/or in concert with the United Kingdom. My approach is pragmatic and my goal is to use whatever way is most efficient in meeting Ukrainian needs.

Norway is EDA's most involved AA partner, as well as an important NATO member. How do you see Finland and Sweden's membership of the alliance changing your outlook?

Finland and Sweden's applications for NATO membership represented a turning point in Nordic security. We welcomed Finland in with open arms and hope to soon see Sweden join us in the Alliance. In the context of EDA, this shift has meant that we can increasingly use EDA as an arena to develop NATO-relevant Nordic cooperation.

When it comes to NATO expansion, do you see Norway's role changing in the Nordics?

I think it is too simplistic to talk of a division of labour where Finland focuses on land-based capabilities and Norway looks more to the maritime domain. Both countries will in the future need to address all domains, where appropriate to our national security interests.

However, there are lots of practical ways in which we can strengthen and deepen our existing cooperation and I can tell you that we are already pursuing this with vigour.

How do you view collaborative procurement? Beyond ammunition, do you think joint procurement in Europe should become the norm in many areas of defence?

There is no doubt that collaborative procurement becomes more important as systems become more complex and procurement costs increase. The long delivery times for even basic ammunition categories due to the war in Ukraine only reinforce this trend. However, collaborative procurement is in its very nature complex, even when it is conducted by likeminded nations. Fortunately, Finland, and hopefully Sweden's, entry into NATO has reduced the degree of complexity for collaborative procurement in the Nordics.

Finally, when it comes to building a stronger European defence industrial base, do you believe that other countries, such as Turkey and the United Kingdom, should be part of that?

We seek a broad-based cooperation with all our NATO allies and see that as integral also in our contribution to the European Defence Technological and Industrial Base (EDTIB). Ever since the full-scale invasion of Ukraine began, we have sought cooperation with other likeminded countries, whether it be in the Nordic context, bilaterally with the United Kingdom, in the framework of NATO or in cooperation with the European Union. I believe this approach has served us well. 

Critical view – Raluca Csernatonu, Carnegie Europe

"THE REALITY IS THAT EUROPE IS DEPENDENT ON ITS PARTNERS"



Raluca Csernatonu is a research fellow at Carnegie Europe. She specialises in European security and defence, with a focus on emerging and disruptive technologies. She also leads the research work on new technologies in the EU-funded EU Cyber Direct – EU Cyber Diplomacy Initiative. Holding a PhD and a master's degree in International Relations, Dr. Csernatonu talks to *European Defence Matters* about the European Defence Agency's (EDA) role as a facilitator in defence cooperation. She also considers how like-minded countries can uphold values through technology and what lessons the European Union can draw from the war in Ukraine.

Defence in Europe has traditionally been the domain of national capitals and NATO, leaving the European Union only a marginal role. How is that changing?

We have Permanent Structured Cooperation, the European Defence Fund, the establishment of a Hub for EU Defence Innovation, known as HEDI, within EDA. There's the EU Defence Innovation Scheme, and several other very serious industrial and technological initiatives with a dual-use potential – the Quantum Technologies Flagship, the European Alliance for Industrial Data, Edge and Cloud, and the Industrial Alliance on Processor and Semiconductor Technologies to name a few.

We also have Horizon Europe and the Defence Innovation Accelerator for the North Atlantic, known as DIANA (see *EDM page 32*).

So the questions are: how will they link up across civilian and military domains, among EU institutions and agencies, and across EU Member States; how will the EU-NATO and the EU-U.S.-UK dynamics play out; and how will operational benefits be delivered? These still need to be answered.

You have EU Member States holding the reins of power when it comes to deciding

the course of action. We have a renewed sense of purpose for NATO, and you have institutions such as the European Commission gaining ground when it comes to both the European Defence Technological and Industrial Base (EDTIB) and new technologies.

Do you think there's enough clarity around digital and technological sovereignty?

The difference between digital sovereignty and technological sovereignty is a matter of nuance.

Technological sovereignty is more encompassing for me and also subsumes digital technology. However, there's a difference in what you emphasise. With technological sovereignty, you focus potentially more on dual-use initiatives with regard to the European industrial and technological base. With digital sovereignty, the conversation can encompass lots of things from regulatory initiatives and data governance through to cloud infrastructure and future-generation networks.

Putting it all together, the key aspect of digital and technology sovereignty is the EU's human-centric, ethical approach, signalling the need to uphold democratic

values, the rules-based international order, the promotion of norms and the rule of law. The EU has always been a champion in the promotion of such an approach.

What fragilities do you think the war in Ukraine shows in European defence?

The reality is that Europe is strategically and critically dependent on its partners, especially when it comes to conventional and high-tech military assets. It would be very difficult too for EU Member States to decouple from others and to go it alone. So here, Europe really needs to hedge its bets, working with partners as well as through its own initiatives. There is still a long road to go for the European Union to become a global actor and regional security provider.

There are no real European champions when it comes to such technology and innovation. That hampers the bloc's ability to foster cutting-edge technologies developed both at the national and European levels to make the armed forces better prepared for the battlefield of tomorrow.

What are some of your observations from Ukraine?

The war in Ukraine shows us how the old meets new. You see the importance of



Boxes of equipment for satellite internet starlink, from Elon Musk's SpaceX, are displayed outside a Ukrainian administrative building in Lviv on 25 March, 2022.

conventional, traditional tank warfare, and you see an increasing role of drones and AI systems, including those developed by commercial actors. There is creative destruction at play.

Besides the fundamental role played by Abrams, Challenger 2 and Leopard 2 tanks, as well as the Patriot missile system, howitzers, drones, and the HIMARS rocket launcher system, think also of the role of high-tech and commercial technology companies, providing critical services to a certain degree also for free.

Ukraine's government servers and critical infrastructure have been supported by cloud technologies. The Ukrainian government awarded Amazon Web Services the Ukraine Peace Prize for helping the country keep vital government services going. We see how Elon Musk's SpaceX activated Starlink over Ukraine and has since provided Kyiv with

thousands of terminals, allowing Ukrainians to hook up to the internet in places out of reach of the domestic telecoms system. Microsoft has played a key role in supporting Ukraine's cyber and digital defences.

So what does it mean for tech companies to go to war? Are they second-tier, or proxy combatants in future conflicts? What are the ethical considerations with regard to international law? Such companies are responsible to their boards, not to their parliaments.

EDA is more in the spotlight today. Where do you see EDA's biggest benefit?

I see EDA as a facilitator for EU defence cooperation, but also the broker among EU Member States and the European Commission. It is also about creating a common vision, especially in strategic areas of great power competition such as military AI. EDA is a very important forum for

discussing these key sensitive issues and reaching agreement.

The Agency is already playing an essential role, raising awareness about where the stress points are, what should be a priority – and identifying the critical gaps. It is about setting the tone and charting the way forward and then, of course, finding common ground with Member States.

The war in Ukraine shows that EDA and Member States need to learn a lot to hedge against an increasingly insecure future. EDA can facilitate a joint and coordinated EU approach for more efficient, effective and, importantly, interoperable defence capabilities, also in line with NATO.

Is there a risk of European defence becoming too complicated?

It's a matter of working through different governance models, between security and defence priorities among Member States, and by identifying what the EU and its institutions can do best in terms of setting out priorities and identifying areas of joint cooperation, with NATO as well.

What is important to remember is that EU governance is complex, especially when it comes to security and defence. So on top of everything, it is really important to use all EU tools, initiatives, and institutions, including sectors and areas that were once considered less important. These include but are not limited to technological and digital innovation and emerging and disruptive technologies such as AI, which are becoming a big part of economic and geopolitical power.

Ultimately, managing the risks of complexity in European defence will require political will, effective coordination mechanisms, and a shared understanding of the strategic priorities and long-term vision for a European security and defence architecture. **█**

WINNING THE JAMMING WAR: A NICHE FOCUS YIELDS DIVIDENDS FOR ITALY'S ELETTRONICA



Enzo Benigni is President and Chief Executive of Elettronica Group, a specialist in electronic warfare, and long committed to defence cooperation. He speaks to *European Defence Matters* about the staying power of the Rome-based, family-run company, which was founded in 1951. Benigni weighs Europe's competing future air programmes and whether the time is finally ripe for a European electronic warfare enterprise with common assets.

When the company you run has become a reference point in its sector, predicting the future might come a little easier, especially when you have been in the business since the mid-1960s. Still, the words of Elettronica's President and Chief Executive Enzo Benigni in 2019 have proved prophetic.

At the Berlin Security Conference of that year, he said that "in the multi-domain scenario of

the future, sectors such as cyberspace and the electromagnetic spectrum will be fundamental."

Fast forward to 2023 and – as the world debates whether Russia's invasion is an example of conventional warfare or a 'technology conflict' – Benigni's words ring true. Whether it be Russian countermeasures to jam the signals of



Eurofighter Typhoons

Ukrainian drones or Ukraine's success in damaging the electronic warfare systems of the Russian army, an unseen battle rages daily across computer networks and the electromagnetic spectrum.

"We should recognise the peculiar aspects of the war in Ukraine," Benigni says. "We see an 'old fashioned' war, with tanks, mortars and ground operations, mixed



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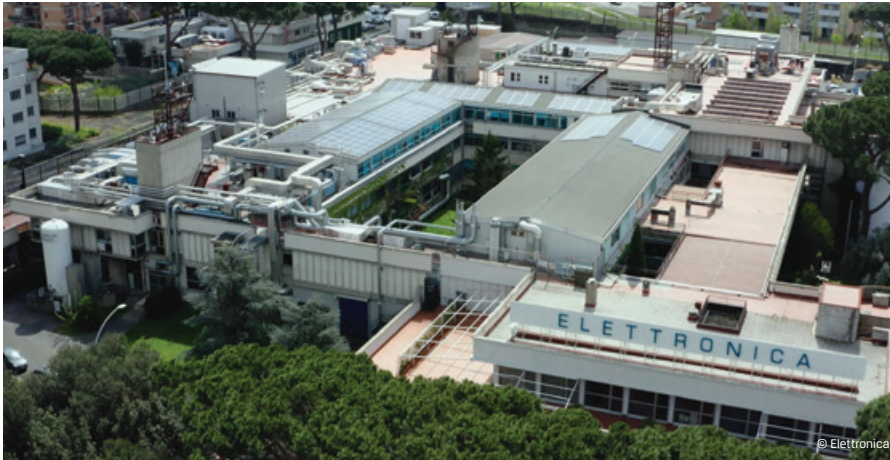
with aspects of a hybrid, unconventional war." He adds: "Cyber attacks are applied to any sensible potential target, not only military ones but communication systems and infrastructure as well. For electronic warfare... we have seen the serious consequences of such technologies, such as the disruption of sensor-communication networks, as well as passive localisation and targeting."

If electronic warfare describes efforts to use the electromagnetic spectrum to deny, degrade or misdirect enemy signals such as radio, infrared or radar, then cyber warfare is largely concerned with infiltrating computer systems. Protection against being jammed or deceived is an important part of Elettronica's business, as well as support measures to provide targeting for electronic or destructive attacks or to

produce intelligence. Signals intelligence also operates in the electromagnetic spectrum.

Elettronica Group, which comprises four separate businesses, is involved in all those niches, partly through its CY4Gate subsidiary that specialises in cyber security software. Both France's Thales Group and Italy's Leonardo also hold minority stakes →

INDUSTRY VIEW: ELETTRONICA GROUP



An aerial view of Eletttronica installations.

in Eletttronica Group, with the remainder owned by Benigni family's private company.

Does that mean Eletttronica might be swallowed up? Benigni says that Leonardo's involvement came from the need to channel Italian industry in electronic warfare around Eletttronica's Centre of Excellence, while Thales brought export opportunities and Franco-Italian electronic warfare naval programmes.

"The presence of these important partners has contributed to stability and cooperation," he says. "Due to this stability and to the level of business cooperation in place, we do not have the worry of being 'bought out,'" Benigni adds, asserting that Eletttronica's survival is of broader importance. "Its capabilities... are considered a national strategic asset."

Sensitive sector

The war in Ukraine also underscores another of Benigni's predictions harking back to the 1990s: that protection against electronic and cyber warfare in Europe can only be fully achieved with cooperation. "A further lesson is the need for cooperation and the sharing of information among allied forces and organisations to increase the effectiveness of both active and passive approaches," Benigni says.

He recalls how, over two decades ago, Eletttronica first promoted the idea of permanent defence cooperation in Europe in its field, launching with European partners the idea of a European electronic warfare company. "The times were not yet mature

enough for that, but the concept is still there," he says. "We have seen significant initiatives in this way, for missiles, space; and industries are making strong efforts to cooperate in a structured way." He asserts: "That European defence cooperation is a must is beyond debate."

Benigni adds: "Electronic warfare is a sensitive sector. In the electronic defence field, geopolitical issues, the willingness of 'emerging' countries to grow competences in the field, and competition from new players have created a new landscape for the business and in the approach to the market."

Eletttronica's pedigree in the European field is undisputed, going back decades, including its involvement in the 1970s Tornado fighter jet programme. Today, Benigni highlights the Eurofighter where the company is responsible for the design and manufacturing of the system to protect the fighter jet from radar-guided and infrared-guided weapons, via sensors and jamming equipment.

EDA? It's in our DNA

When it comes to European Union initiatives, the support of the European Defence Agency (EDA) has long been evident. In 2017, military helicopter pilots and intelligence officers from Austria, Belgium, Czechia, Germany, Hungary, the Netherlands and Sweden took part in EDA's first-ever helicopter electronic warfare course.

More recently, the EU's Preparatory Action on Defence Research (PADR), involving



An employer works in an Eletttronica laboratory.

EDA, includes the CROWN project for electromagnetic spectrum dominance. The consortium comprises 11 participants from seven countries – including Eletttronica – as a first step towards an EU programme for a multifunction radar, electronic warfare and communication system that uses technology without end-user restrictions for a single aerial platform by 2027.

Eletttronica is also developing its technology in the area of electronic attack in European projects. "We consider as strategic that Europe will develop indigenous solutions and capabilities for airborne electronic attack," he asserts. "It is part of the recently defined concepts of strategic autonomy and technological sovereignty that are to be extended to other key capabilities in electronic defence."

Launched under the European Defence Industrial Development (EDIDP) programme, the projects REACT and CARMENTA involve Eletttronica. With CARMENTA, where Eletttronica is coordinating



© Elettronica

the 14 companies from eight countries, the aim is a European self-protection system for fixed and rotary wing airborne platforms. In REACT, the goal is to provide a design for an air electronic attack capability in a contested anti-access and area denial environment—best known by its shorthand A2/AD.

Sixth-generation convergence?

If there is a wrinkle in Europe's commitment to defence integration, might it be in the two competing future air programmes?

Britain, Japan and Italy are teaming up to build a sixth-generation fighter jet, in a project involving Elettronica, known as the Global Combat Air Programme (GCAP). Meanwhile, France, Germany and Spain are building the Future Combat Air System (FCAS), also known as SCAF in French.

Benigni is upfront about the issue in terms of European defence integration. He says it is not only a financial question and mulls whether it will be possible to achieve two demanding programmes by two groups

of countries. He also asks if the alignment of requirements of future interoperability among European air forces, of industrial competition instead of cooperation, can work.

"We still believe that, despite the growing difficulties, somewhere along the life of the programmes, some sort of alignment, of convergence, should be implemented," he says. **K**

"Protection against electronic and cyber warfare in Europe can only be fully achieved with cooperation"

Elettronica Group at a glance

- > **ELT ROMA (ITALY)**
Established in 1951, specialising in electronic warfare technology.

- > **ELT GMBH (GERMANY)**
Founded in 1978 to support Elettronica in key European programmes.

- > **CY4GATE (ITALY)**
Established in 2014, CY4GATE is a joint venture between Elettronica and Expert System in cyber.

- > **ELTHUB SRL (ITALY)**
Purchased in 2022, ELTHUB is a rapid prototyping and research business.



IN SOLIDARITY WITH UKRAINE, NEW EU DEFENCE INITIATIVES TAKE SHAPE

While the twists and turns of war are not easy to predict, the conflict in Ukraine is a rallying cry for European military and civilian innovation. It is also the chance to deepen European cooperation on defence acquisition, not only to make buying arms and ammunition faster and cheaper, but also to strengthen the European defence industrial base by consolidating demand.

Faced with the return of large-scale conflict to Europe, the European Defence Agency (EDA) is among those asking: what must EU

armed forces' future military capabilities look like? If Europe is committed to building armed forces that draw on new technology, governments will also need to work to avoid duplication and develop coherent and interoperable defence capabilities.

In the following pages, we hear from senior EDA and NATO personnel about the success of the multinational MRTT fleet, EDA's work to increase innovation and flexibility, and the painstaking process of defining, obtaining and delivering ammunition on time.



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EDA'S Hub for EU Defence
Innovation (HEDI)

NOURISHING AN EU INNOVATION ECOSYSTEM



Jean-François Ripoche speaks at EDA's Defence Innovation Days on June 1 2023.

One year after its establishment, the European Defence Agency's (EDA) Hub for EU Defence Innovation (HEDI) has passed several milestones. One is the establishment of the EU Defence Innovation Network, which has allowed collaboration and know-how to be shared among Member States. Another is the Research, Technology and Innovation Papers Award, which has just given its first prizes. Moreover, from 2023 onwards, the EDA Defence Innovation Prize is now under the umbrella of HEDI. This year, the prize focuses on the digital domain.

Jean-Francois Ripoche, Research, Technology and Innovation Director at EDA, outlines the progress so far.

EDA has, of course, been fostering research, technology and innovation for the benefit of our armed forces since it was set up in 2004. That has only been strengthened through the creation of the Hub for EU Defence Innovation in May 2022. HEDI is embedded within EDA and staffed by EDA personnel.

Following its launch, the Hub has made significant progress. In October 2022, we held the first meeting of the European Defence Innovation Network in Brussels. Representatives from across our Member States came together to share their

experience in defence innovation. The objective is to create a level playing field across the Union by sharing lessons identified and learned, and create joint innovation projects. The network has convened again twice in 2023.

As well as the EDA Innovation Prize, EDA published a call in February for applications to its first-ever Research, Technology, and Innovation Papers Awards. That is part of HEDI's mission to stimulate a European defence innovation ecosystem. EDA has launched in June this year a new initiative on the development

of proof-of-concepts to fund the development of innovative concepts. This year the topic is in the space domain, which was prompted by the exploding importance of space assets. Space is a domain in which the civil sector has been developing key technologies for decades and it is a perfect domain to leverage those developments and progress them further for specific military applications. This initiative will see annual calls for proposals to provide an initial funding boost to the ideas identified through the innovation prize and the RTI papers awards.

"Staying ahead is paramount to ensuring the credibility and effectiveness of our armed forces"

Pepijn Cox of TNO discusses his research paper during EDA's Defence Innovation Days on June 1 2023.



Pepijn Cox, from the Radar Technology Department at TNO in The Hague, was one of three winners of EDA's first Research, Technology, and Innovation Papers Award. He is the first author of a winning paper entitled 'Enhanced Radar Detection of Hypersonic Threats through the Application of Irregular Waveforms and Advanced Processing'. He talks to *European Defence Matters*.

Scientists generally consider the first long-range ballistic missile to be Nazi Germany's V-2 rocket in 1944, which became hypersonic in its descent as it struck targets in England during the Second World War. It was not until the 1980s that U.S. experts successfully demonstrated the ability to change a warhead's flight patterns at high speed after re-entry.

Today, China and Russia have hypersonic weapons, flying at speeds in excess of Mach 5 while maintaining a high degree of manoeuvrability and giving them more of a chance to elude modern air-defence systems. Russia has fired its air-launched Kh-47M2 Kinzhal hypersonic missile, believed to be a modified version of the ground-based Iskander missile, at targets in Ukraine.

"We noticed in Ukraine that when Russia has launched these hypersonic missiles, they usually launch several at a time," Cox explains. "So you want to take them out as quickly as possible."

To do so, Cox says, you need to detect them at a longer distance.

His work, and that of his colleagues Laura Anitori, Wim van Rossum, Mario Coutiño, and Keith Klein, focusses on novel waveforms and advanced processing. This topic has been a decade in the making within the Radar Technology Department of TNO, supported by the Dutch Ministry of Defence from an early stage. "Processing waveforms with irregular intervals and modulations with adequate cutting-edge processing has a lot of potential against hypersonic missiles," he asserts. "So what we tried to do with this paper was to bundle these various concepts that you require to actually make a complete pipeline."

There is also the software implementation aspect and developing processing platforms. But in short: "we have shown that these proposed techniques have the potential to detect the hypersonic targets at a significantly larger distance. That could extend the length of time that NATO would have to engage with them," Cox says.

Any future enhanced radar detection system could be used in tandem with satellites as a kind of 'over the horizon' early warning radar system. "The topic is complex and requires more collaboration across Europe and the NATO alliance."

HEDI is not the only innovation hub. As well as NATO's DIANA (see EDM page 32), the European Commission has its EU Defence Innovation Scheme. It too aims to support the maturation of ideas focusing on dual-use developments. It will leverage money from the European Defence Fund (EDF), combined with co-funding from Member States and possible funds from public and private sources.

HEDI is working closely with its peers.

Above all, EDA aims to stimulate defence innovation by facilitating dialogue within the defence innovation community. With the rapid development of new and often disruptive technologies and their fast weaponisation, innovation is a factor shaping our security environment and the global balance of power. Staying ahead is paramount to ensuring the credibility and effectiveness of our armed forces. Defence innovation in the EU is linked to the Union's ambition to be a credible security provider. We aim for a diverse, multidisciplinary and all-inclusive European innovation ecosystem. 

NATO's Defence Innovation Accelerator for the North Atlantic (DIANA)

"IT'S A WORMHOLE INTO A DIFFERENT DIMENSION"



David van Weel is NATO's Assistant Secretary General for Emerging Security Challenges. Until May this year, van Weel helped set up the Alliance's Defence Innovation Accelerator for the North Atlantic (DIANA) as interim managing director. Having passed day-to-day leadership to a full-time managing director, van Weel speaks to *European Defence Matters* about how DIANA will advance deep tech in dual-use technology, and why the NATO Innovation Fund should be considered genuine venture capital.

The Belgian driver who drove his SUV into a Brussels tram tunnel one Sunday evening in 2016 said he was "just following his GPS". Notwithstanding occasional mishaps, the Global Positioning System is generally considered a marvel. So is the internet. Then there's the microwave oven, and even super glue.

They were all developed out of defence research, making their way into civilian life.

Today it's the other way around, explains David van Weel, NATO's Assistant Secretary General for Emerging Security Challenges, at his office at NATO headquarters in Brussels. "Innovation is moving really, really quickly. It's being done by small companies, either affiliated to academia or coming out of it, providing groundbreaking new technologies."

Van Weel points to innovators in Ukraine, who developed a system compared to a ride-hailing app for its armed forces. If in need of artillery, software can now provide information on the best-suited firepower, based on location, ammunition stock, probability of hitting a target and other parameters. "We call it the Uber for artillery, because it's similar to what Uber does in transport," he says of the U.S.-based company.

The shift, in itself, is good news. Many of the world's best universities are in NATO countries. Many patents still come from allied countries. However, innovation is focused on the commercial market. As van Weel explains, if you can sell your app to a billion people worldwide, why would you go for an exclusive contract with the military? Defence

contractors are not always easy to reach, either. "You wouldn't necessarily know who to call," he says.

Then there are the requirements that defence contractors demand. "A company will need to know what the defence contractor wants, and then they build it. But that's not groundbreaking innovation," van Weel says.

Another issue that lay behind DIANA is that many countries in Europe have reduced their research and development budgets. According to European Defence Agency (EDA) data, for 26 EDA members, excluding Denmark, spending on defence R&D reached €9 billion in 2021, a big jump from the €4 billion of 2016, but not much greater than the €7 billion spent in 2010.

Additionally, it has become clearer that China and Russia are seeking to gain a technological edge over the United States and Europe.

No 'Sputnik' moment

The questions were: How do we solve this conundrum? How do we become early adopters, or even close shapers of new technology? How do we find companies with products for both commercial and defence applications? How can we use the potential of Artificial Intelligence in defence?

DIANA offers:

- › Grants to help cover costs during DIANA's accelerator programme.
- › More than 10 accelerators across NATO countries.
- › Over 90 deep tech test centres.
- › An investor network for secure third-party funding, anchored by the NATO Innovation Fund.
- › Opportunities to develop technology in operational environments.
- › Pathways to market within NATO and its 31 allies.



David van Weel talks on a panel at EDA's Defence Innovation Days 2023 event in Brussels on 1 June 2023.

"If you're a startup working in quantum, building a lab in your garage is not an option"


For the uninitiated, the incubator might have echoes of the U.S.-British television show *The Apprentice*, in which business-people compete for an investment prize after being vetted by experts.

"Yes, but it's not a single entrepreneur," says van Weel. "It's often an organisation, or they are run by academia, or governments. We didn't invent that concept. We just asked nations to give us candidates from their existing innovation ecosystem of accelerator sites, accelerators that we can use for DIANA."

DIANA will not demand solutions for a specific requirement but will seek the best ideas for specific problem statements such as underwater communication, developed in collaboration with NATO scientists.

As interim managing director of DIANA, van Weel and his 30-strong transition team handed over leadership to Deepthi Chana, a professor at Imperial College London, in May. Professor Chana is supported by a team of civilian and military experts from NATO countries. DIANA's staff is set to grow steadily until it reaches full operating capability. Van Weel will remain on the board as the NATO Secretary General's Liaison Officer.

Being outside of NATO structures, DIANA has leeway to start and terminate programmes. With its own Board of Directors and funded directly by Allies, van Weel says: "It will have a large degree of autonomy, which is needed in this rapid world of innovation."

And there will be failures too, he says. DIANA will not do all the technology for NATO, either. "It is the wormhole into a different dimension," van Weel says. 

There was no 'Sputnik' moment, van Weel says, referring to the successful launch of the world's first artificial satellite by the Soviet Union in 1957, which sparked the Space Race of the Cold War.

For NATO, the problem was first broached within the Emerging Security Challenges division four years ago. "That was the starting point to look at the policy questions around innovation. What is going well, what has not gone well?" van Weel recalls. "Out of that came DIANA and the NATO Innovation Fund, an opt-in multinational fund."

At the NATO Summit in Brussels in 2021, all allied nations formalised the creation of DIANA, a 'defence innovation accelerator' owned by allies as a federated network with regional offices supporting accelerator sites and their test centres.

With the pilot year of accelerators to start in late 2023, and with candidates chosen in mid-2023, DIANA's full operating capability is planned for 2025.

Working on both sides of the Atlantic, DIANA's regional offices are located in London and Halifax, with a hub in Tallinn. Of the network of more than 10 affiliated accelerator sites, several will open this year, including in Turin and Copenhagen, as well as in Seattle and Boston.

The NATO Innovation Fund of €1 billion, meanwhile, is a "proper venture capital fund", van Weel says, not a political or a governmental body. With its 23 nations in a limited partnership, the fund will allow investments and 'crowd in' other investments too.

Computers, clever people

The incubator concept is, of course, not new, but has been less focused on defence and security.

In DIANA's case, van Weel explains that: "The accelerator is geared towards making a product fit for the civilian market, helping and coaching the founders to build a company and finding a defence and security market for it. Because great technology is a good starting point, but it doesn't create a company that has a viable path."

Test centres are actual facilities geared towards specific technologies where companies can work on deep tech. "If you're a startup working in quantum, building a lab in your garage is not an option. That would cost you a few billion euros," he says.

Part of the support includes help with working with the military, interaction with soldiers to test and perfect the technology and learning how to protect intellectual property from possible nefarious investors.

EDA'S PRELIMINARY ASSESSMENT OF THE WAR'S IMPLICATIONS



The destruction wrought in Bakhmut and the collapse of the Nova Kakhovka dam have shocked and appalled many. But while Russia's invasion of Ukraine is a wake-up call, longer-term conclusions need to be drawn. *European Defence Matters* sits down with **Stefano Cont**, the European Defence Agency's (EDA) Capability, Armament and Planning (CAP) Director, to discuss lessons to be drawn from the war.

The scornful proverb 'Never fight the last war,' is not lost on Stefano Cont. As a general on leave from the Italian military, he knows that throughout history, his sort have been accused of preparing for conflicts based on past experience, even when technology, geography and circumstances change. So he starts with a note of caution.

"A future conflict, even a prolonged or intense one, could be quite different from what we are observing right now in Ukraine." What's more, he says, there is no air war to speak of. So far, there has been no naval combat either, at least not on the scale of the Battle of Midway in 1942. "The way the conflict has been developed means it will not offer us too many lessons in the air or naval domain."

With those disclaimers, Cont can speak about EDA's preliminary assessment, which was presented in greater detail to EDA's Steering Board in May and could serve as a basis for capability planning, especially as EDA will present revised priorities for Ministers of Defence to approve in November.

"The first element to emerge is that you need to have a fully integrated command and control system," Cont says, pointing to former U.S. Gen. Norman Schwarzkopf's command during the 1990-91 Gulf War and its well-integrated joint operations tied platforms, units, and action. "You definitely

need that to collect, analyse and distribute the information within a decision-making system."

Protection, electronic warfare

Surely, European Union Member States already have such systems? Cont is clear that each Member State has structures that are developed and integrated in the NATO context. "But if you are really honest, interoperability when you're talking about command and control, especially intelligence systems, is not perfectly integrated. So, technologically speaking, you need to conceive the system as a whole and then to plug in different elements," he explains.

That feeds into today's talk of 'cognitive superiority' and the so-called speed of relevance. In future warfare, decision-making will need to be faster, not only at the tactical level, but also at the operational level and strategic levels. That could be harder in a coalition of the willing, Cont says, so procedures will need to be clear from the start. "You cannot develop them during a crisis situation or a conflict," he adds.

The return of full-scale war to European soil has raised another alarm: the threat to the EU's critical infrastructure. The issue was not a great consideration over the past 30 years, Cont asserts. Russian air strikes on Ukraine's electrical power stations are a lesson in themselves. "We need to consider how we increase protection," he asserts.

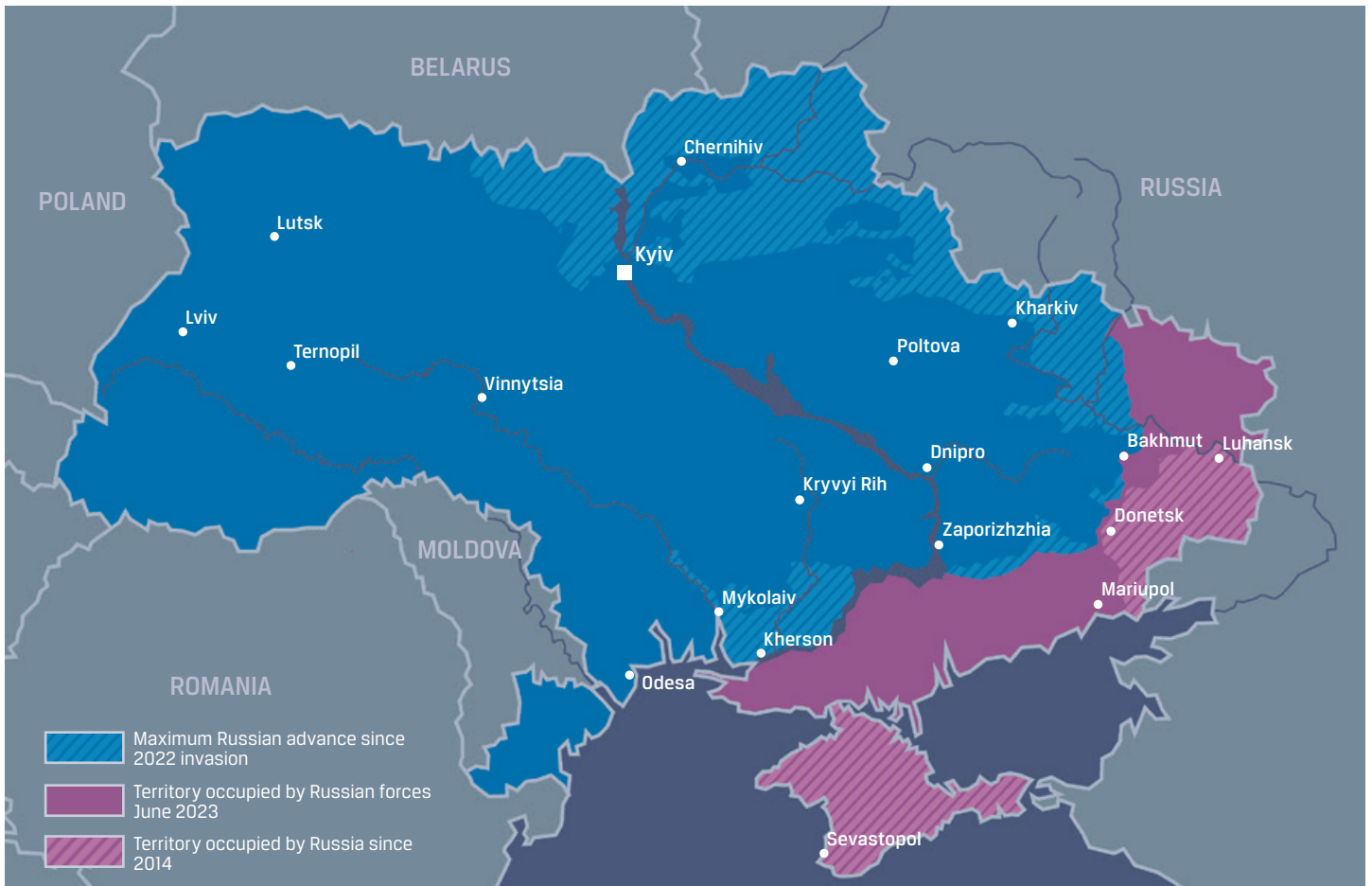
A lesson to be drawn is the importance of the electromagnetic spectrum (*see Elettronica interview, EDM page 24*). "In warfare, it is becoming very relevant, because it would be nonsense to have a multi-billion euro satellite system jammed by equipment costing just €10,000," Cont says. "Ukraine shows that highly sophisticated weapons system can be deceived or defeated by confusing the guidance systems, or taking control of the system itself."

As defence spending increases across Europe in response to Russia's invasion, EDA's message is that Member States must use increased resources wisely. In the case of electronic warfare, that capability is "an excellent complement" to traditional ones, Cont says.

The quality of quantity

EU armed forces must use technology. But the ways to do that are changing. Ukraine has used commercial technologies as assets. Ukraine has also used limited capabilities and older weapons successfully by tailoring them precisely to the threats they face.

"Ukraine has shown a good mix between high-end technologies and the commonly available off-the-shelf technologies to achieve a superiority in the operational field," Cont explains, citing small drones produced in garages mounted with cheap optical sensors and rudimentary weapons,



The changing control of terrain following Russia's invasion of Ukraine, as of June 2023.

controlled by a mobile phone that can be bought in a shop.

"You have to try to be innovative in a way that solves typical problems, the usual problems," Cont says, citing Austrian economist Joseph Schumpeter's belief that innovation happens when humans figure out how to craft inventions into something constructive.

Cont says that in the past, EU efforts to develop technology reached the highest level in small quantities, in part given the reduced size of defence budgets, less money for production and sizing industry for the needs of the day. "Now we have definitely seen in this high-intensity conflict in Ukraine that quantity can be a quality," he says, referring to the war of attrition along parts of the front line with Russia.

The need for European armament makers to ramp up production for a high-intensity

conflict might be obvious. "What we are saying is that the industrial base is a capability in itself. It is a capability to have a proper industry able to maintain competitive internal pricing and delivery, with the potential to grow," Cont says, referring to the EU's Defence Technological and Industrial Base (EDTIB).

So now what?


EDA's analysis of the war in Ukraine aims to be a means of discussion for Ministers of Defence. It also comes at a time when EDA is revising the Capability Development Plan (CDP), the latest version of which dates to June 2018. The CDP contains the jointly agreed European capability development priorities, which are updated on a needs basis under EDA's auspices, in close coordination with the EU Military Committee and the EU Military Staff.

"There are some capabilities that we recognise in our analysis of Ukraine that

cannot be achieved by individual Member States," Cont says.

Some in Europe's defence community might worry that all this sounds like duplication of work at NATO. But Cont sees the EU and the Western alliance heading towards the same solution. Europe, too, must be able to develop its own capabilities, not always relying on the United States.

"Just to be very, very clear. EDA data shows that Member States spent €214 billion on defence in 2021. Given that the U.S. defence budget is three times that amount, can you say that we in the EU have a third of their capabilities?" Cont asks. "If the answer is yes, well, I will stop my work."

Perhaps unfortunately for a general nearing retirement age, Cont cannot answer in the affirmative. And so the work goes on. "There's a common objective to be reached." 

MAKING IT HAPPEN: HOW EDA HAS STEPPED UP IN SUPPORT OF UKRAINE

At the start of this year, Ukraine's partners and allies were urgently seeking to buy ammunition. All eyes were on the European Defence Agency (EDA) as the European Union's Member States had already agreed on a seven-year project to jointly purchase ammunition of multiple types and calibres to replenish national stocks depleted because of the support to Ukraine. Within this project, Member States mandated EDA to prioritise a two-year fast-track project for 155mm artillery shells to respond to the urgency of providing further support to the Ukraine cause. EDA had to make it happen.

Breathless insiders said it was 'make-or-break' for EDA, an exaggeration for the EU's well-established hub for defence collaboration. But as Ukrainian forces use up to 7,000 shells a day on the battlefield, the message was clear.

The Agency has already laid the basis for possible ammunition Framework Contracts orders in record time by launching and running a common call for tenders. Twenty-six countries signed EDA's 'Collaborative Procurement of Ammunition' project arrangement from March onwards, with some Member States expected to move to sign contracts for ammunition orders as soon as the Framework Contracts will be in place.

Diplomat, banker, executive

The responsibility has fallen to a small team inside EDA who, unlike the EU vaccine procurement process of the COVID-19 pandemic, do not have hundreds of people to turn to. What's more, defence is a sensitive issue and discretion is the norm. Ammunition stocks, supply chains, company production and strategic plans are well-kept secrets.

But arguably the hardest task, says EDA's Corporate Services Deputy Director Gianluca Serra, has been the need for EDA staff members involved in the project to play the multiple roles of policy maker, negotiator, ammunition expert, lawyer, financial and business executive on an almost daily basis (*see EDM page 38*).

That is because the Agency's team continues to move between discussions with different constituencies of stakeholders within the constellation of EU institutions and Member States involved. When drawing up a fast-track procedure, which under the existing rules allows for the ordinary tendering process to be simplified and contracts to be put into place at relatively short notice, multi-dimensional issues (involving policy, governance, market, law, fiscal, finance) are of consideration.

EDA is putting in place two filters to ensure that ammunition can actually be produced once orders are made, and then used in battle.

"In the procurement process, we require suppliers to provide certification of compatibility with the firing system and this, albeit indirectly, will contribute to making the EU artillery technological landscape more interoperable," Serra says. "This is the added value brought by EDA."

Johann Fischer, Head of EDA's Land and Logistics Unit within the Capability, Armament and Planning (CAP) Directorate, explains that the ammunition must be at least compatible across four chosen platforms. These are self-propelled howitzers that European Member States have sent to Ukraine: France's Caesar; Poland's Krab; Germany's Panzerhaubitze 2000; and Slovakia's Zuzana.

"Once we collected the basic information, it was agreed to focus our procurement on

these four artillery platforms," Fischer says. "We also decided on the two different types of ammunition: the high explosive and the high-explosive extended range."

"You might ask why we focus only on 155mm, or why only on certain platforms," Fischer adds. "The answer is both what Ukraine needs and the sheer urgency, given that it will still take time for the ammunition to be manufactured and delivered after contracts are signed. In procurement terms, everything we are doing is running along very short timelines," Fischer says.

Another step of the process is conformity. "The original equipment maker must give the wider industry the ability to produce its ammunition if it is to be considered in our market survey of available suppliers," Fischer says.

Cultural leap

EDA had already been working since November 2022 on three areas for joint procurement: ammunition, soldier systems and chemical, biological, radiological and nuclear (CBRN) equipment, based on the work of the Joint Defence Task Force with Member States to identify their most critical shortfalls.

The focus for now, however, is on Ukraine's most pressing needs.


In a way, says Serra, that is the strength of EDA's procurement model, technically known as a Category B (Cat. B) programme arrangement. It is the à la carte character,

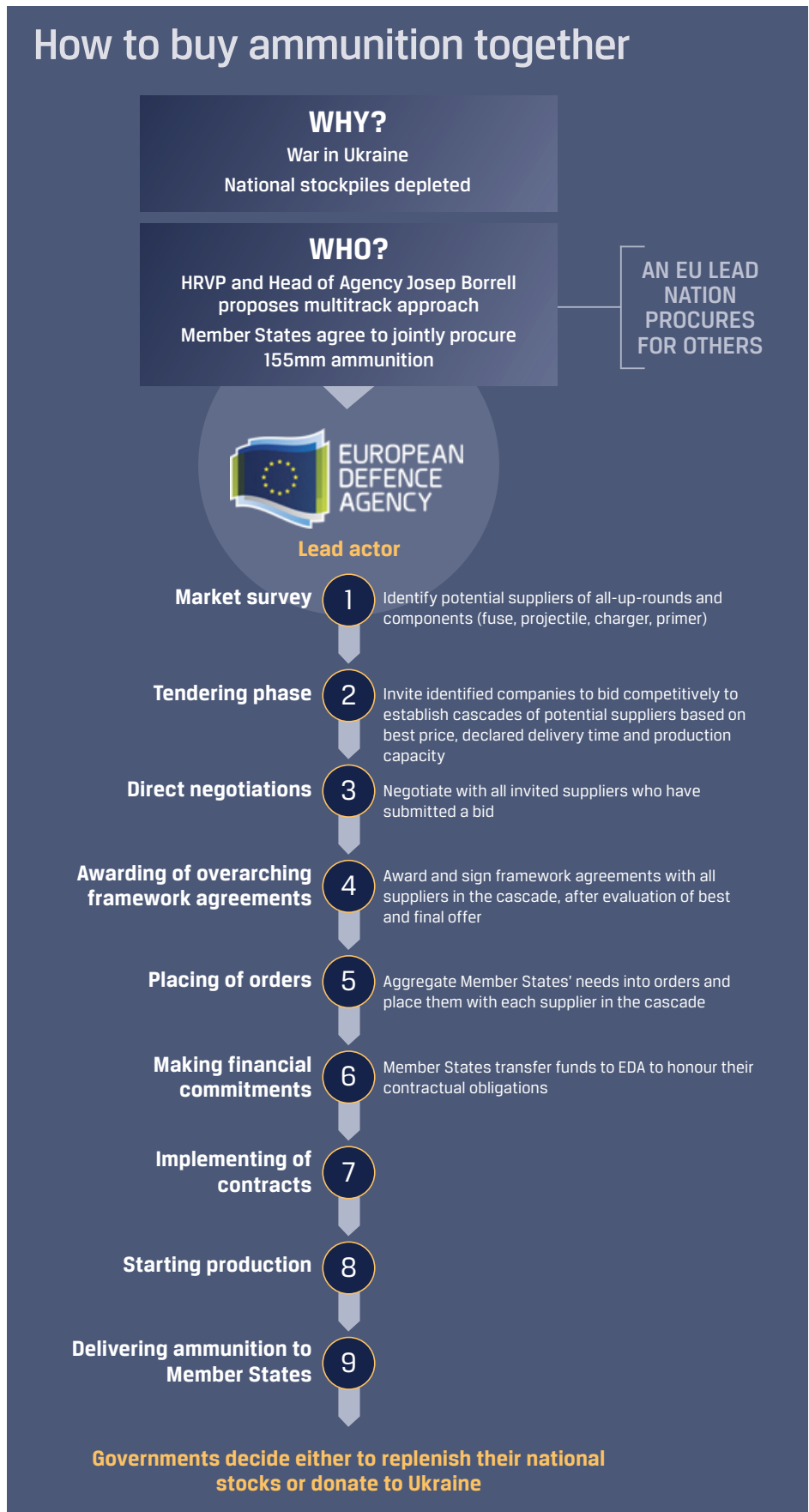
its ability to react and be flexible within the existing legal framework and operational constraints. Compared to a fully-fledged international procurement agreement outside EDA's umbrella, it is lighter and legally less onerous to construct. Member States can also opt in to EDA's procurement at a later stage.

"And let's not forget the incentive of VAT exemption, which the EU allows for when countries come together to do business and EDA's added value is recognised by the Member States," he says.

Both Serra and Fischer hope the collaborative procurement can prove its worth also by helping to create a competitive European marketplace.

"Joint procurement of off-the-shelf military equipment at EU level is way more complex than national procurement carried out by individual Ministries of Defence," Serra explains. "It is more demanding both in terms of definition of technical specifications (demand side) and market constraints (supply side). Differently from national procurement, joint procurement can, in the long run, become a vector of harmonisation of technical requirements as well as EU market integration. Add to this the economies of scale and security of supply that no nation can achieve alone," he adds.

Might that mean EDA emerges as a central purchasing body for military equipment for the EU? It is an open question. "We are certainly colonising a new territory and the lessons that will be learnt from this experience will provide valuable inputs to EU policy makers, primarily Member States, on whether and how to shape up an EU procurement agency for military equipment," Serra says. "One thing is certain: joint procurement at pan-European level through an EU central purchasing body will require a huge cultural leap in all EU capitals." 



"WE ARE NOT THE PLAYER. WE ARE THE ENABLER"

Behind every European Defence Agency (EDA) project or initiative is a crew working in corporate services to deliver the best for the Agency and for Member States. Just as 2022 marked a paradigm shift for defence, so EDA's Corporate Services Directorate (CSD) needed to adapt, especially in procurement. **Ginette Manderscheid**, EDA's Corporate Services Director, and **Gianluca Serra**, Deputy Director, speak to *European Defence Matters* about life in the EDA's engine room.

Ginette Manderscheid is open about having a high-profile role that might not always get the visibility it deserves. "In the best of worlds, those working here won't have to think about corporate services, be it in finance, human resources, legal or IT. CSD is really the engine that keeps the organisation running."

Over almost two decades, EDA's role as a catalyst in European defence has grown to include expert support and the establishment of projects in all domains. From the development of the European maritime information systems to the Agency's Multinational Helicopter Training Centre, the expertise is deep and broad.

With the war in Ukraine, the Agency is at the heart of European Defence cooperation as never before, be it in joint procurement or in future capabilities. EDA now manages, indirectly, projects with European Commission funds.

"It is true that EDA has massively evolved," says Manderscheid, who joined EDA in 2017 and took over as CSD director in 2021. "This has been confirmed, most evidently, by the pillar assessment that was conducted last year by an external independent audit company," Manderscheid says.

A pillar assessment might sound odd to an outsider, but it was a necessary step to reassure the European Commission that,

were they to entrust EDA with indirect management of EU funds, the Agency would offer them the same level of assurance as the European Commission would be able to offer. "There is a higher degree of visibility and accountability now for EDA."

Whether as a place to set defence priorities or as a bridge between the military and other EU policies, EDA exists precisely because Member States have different interests but seek to find common ground. CSD is again, part of making that happen. Manderscheid states: "We are not the player. We are the enabler."

Ammunition procurement: unprecedented complexity

The example of the moment is collaborative procurement (*see EDM page 36*). EDA is not a procurement agency and EDA's Chief Executive Jiří Šedivý has said so publicly. But having done procurement in the past, and having been called upon by the Head of Agency Josep Borrell to take charge of the collaborative procurement of ammunition, EDA, and with it CSD, needed to respond.

"The 155mm artillery round is a very specific requirement. CSD and the Agency were proposed as support, and so we are doing it. That shows our ability. That shows that we are agile," Manderscheid says.

Gianluca Serra, who worked as an EDA procurement officer between 2016 and

2019, is clear. "Joint procurement is in our DNA," he says, referring to EDA's work ordering Carl-Gustaf ammunition on behalf of Estonia, Latvia, Lithuania, Czechia and Poland from 2014 to 2016. Another example is EDA's procurement of the Joint Deployable Exploitation and Analysis Laboratory (JDEAL) to support the fight against the use of improvised explosive devices. Other examples include EDA's procurement work in air medical evacuation and the EU SATCOM market in support of CSDP missions and operations.

"What is new is the complexity, the scale and the time pressure," Serra says. "A single round of 155mm artillery is made of four components, the fuse, the charger, the primer and the projectile. We are also procuring the ammunition for four different platforms."

Given that other tasks had to be given less priority within EDA, Manderscheid points to the 12-hour work days that colleagues such as Serra have been putting in. "If collaborative procurement were to become one of our trademark tasks, then it would be necessary to discuss with Member States about our strategic orientation and about all staffing."

A bigger engine?

Serra describes the excitement but also the sense of dread he felt when EDA was given the mandate to negotiate the project



Ginette Manderscheid and Gianluca Serra at EDA's offices in Brussels in June 2023.

arrangement for collaborative procurement. With a small team across CSD and other directorates, it was always going to be demanding. "Yes, we are the engine room, but the engine has a size that you cannot easily change. Either you change the ship or you change the engine," he says.

As an organisation with around 200 dedicated staff, EDA has to value its people. If that sounds like management speak, Manderscheid explains that: "a key service of EDA is the human resources function, because EDA, like many EU agencies, is an expert organisation."

Staff are the most important resource of the organisation, with very specialised profiles. "So we need to be very close to EDA's directors, and also to the top executive


"CSD is really the engine that keeps the organisation running"

team, to understand what their vision is, where EDA needs to move in terms of the competence profiles," Manderscheid says.

The real issue

EDA still needs internal changes, Manderscheid says. "Tighter planning. That's something that I'm trying to push." Another area to be tackled, something that Manderscheid sees as a legacy of the Agency from its early days emerging as an intergovernmental agency of the Council, is to move towards a more fully integrated way of working.

There is also a need to develop key performance indicators (KPIs), even if EDA faces a lot of changing headwinds. "KPIs would help us hold ourselves to account even if some of the initiatives are based on Member States' prerogatives and not always under our control," she says.

Asked where EDA might be in a decade, Manderscheid is unsentimental. "I am not focused on the status of EDA, but on the contribution that it can make," she says. Ideally that will be on supporting Europe's ability to act. "I'd like to make sure that in 10 years' time, if there's another crisis on our continent, we would be well-equipped," she says. "Let's not lose sight of the real issue, of what EDA can offer, so that Europe is ready, should it find itself in this situation again." 

ALL THE THINGS YOU ARE: A MULTI-ROLE AIRCRAFT SHOWS COOPERATION AT SCALE



Two A330 MRTT aircraft stand on the runway at Eindhoven Air Base in the Netherlands on 23 March 2023.

The multinational MRTT fleet, which was developed with support from the European Defence Agency (EDA), is now ready to operate worldwide. The fleet's Airbus A330 multi-role tanker and transport aircraft provides long-distance transport, air-to-air refuelling and medical evacuation to its six nations: Belgium, Czechia, Germany, Luxembourg, the Netherlands and Norway. What started as a reaction to a glaring capability gap over a decade ago has become an example of cooperation between industry, the European Union and its closest partners, and NATO.

In March 2011, when Libyan leader Colonel Muammar Gaddafi was bent on fighting back against a rebel uprising, a coalition of NATO allies and partners maintained a no-fly zone to protect civilians from air attack for seven months, with a United Nations mandate. Allowing an opposition movement to defeat a well-trained army and hastening the downfall of a dictatorship, Operation Odyssey Dawn and Operation Unified Protector were judged a success. But for Europe, the experience revealed huge deficiencies in its airpower.

Some 50 tankers were needed every day for air-to-air refuelling fighter-bomber detachments, including European F-16s,

JAS 39 Gripens and Mirage 2000s, but European forces had just 49 in total. Only about half were operational, with the rest needing maintenance.

The United States, meanwhile, had about 650 tankers in its fleet. "That was an eye-opener for a lot of politicians, as they realised that Europe could not even support a small air operation," said Dion Polman, an EDA project officer specialising in air superiority who would play a pivotal role in developing the MRTT fleet.

Two months after the end of the air war, at NATO's Chicago summit in December 2011, there would be no more papering over the cracks. U.S. Secretary of State

Hilary Clinton, while publicly stating that the United States was proud to stand with NATO, Arab and European partners in protecting Libya's people, had brought pressure to bear from Washington.

After the NATO summit, EDA Member States agreed that the Agency would lead the initiative to address the shortfall in air-to-air refuelling capability and then the MMF programme was born in 2012.

Change in fortunes

Air-to-air tankers are vital in operations that require long-range air missions, limiting the time aircraft spend on the ground and permitting them to be refuelled mid-flight.



Fast-forward to Russia's unprovoked invasion of Ukraine in 2022 and the multinational fleet of Airbus A330 tanker and transport aircraft refuelled NATO fighter planes over Poland to deter any possible Russian incursion into allied airspace.

So how did European nations go from shortfall to enabler? After all, immediately after the Libyan campaign, EDA's ideas about optimising existing assets, focusing on training and the need for interoperability of the many types of tanker in service in Europe were welcomed in Ministries of Defence but did not immediately spark a revolution in capabilities.

The debate in the Netherlands about replacing ageing U.S. KDC-10 tankers provided the impetus.

"Back then, I was tasked to plan the replacement of the Dutch air-to-air refuelling tankers as the staff officer in the defence ministry. But finding sufficient budget to accomplish that was back then challenging to say the least," Polman recalls.

"This is what the future of defence cooperation should be like. We have to overcome national, industrial interests, we have to jointly develop, procure and operate capabilities"

At the same time, Polman attended a project team meeting and saw first-hand the Agency's analysis as an opportunity to solve the situation back home. "We became convinced that this was the way for the Netherlands to achieve what it needed, as long as we could get some partners who wanted to do this with us to combine resources and bring costs down," Polman says.

The solution would eventually become a NATO-owned fleet with the aircraft based in

Eindhoven and Cologne, with cost-sharing based on the use of flight hours. Participating countries together bought aircraft based on the total amount of hours needed, with manufacturing, personnel and other costs shared through the ratio of participation. Cooperation would, in the end, cut the acquisition, operational and sustainment costs for Member States almost in half, compared to the price of buying a plane in splendid isolation.

Today, participating members maintain their sovereignty over how they decide to use the aircraft and for how long. This is ensured in the Memorandum of Understanding (MoU) which is the legal foundation of the project.

Swiss army knife

But back in 2015, with meetings at EDA ongoing to harmonise the requirements of a potential tanker fleet, there were basic unanswered questions, such as: which aircraft would be the basis of the project, the Boeing KC 46 Pegasus or the Airbus 330? →

SPECIAL FEATURE: THE MULTINATIONAL MRTT FLEET (MFF)

"The choice of the Airbus came down to the fact that, unlike in the United States, we didn't have the funds to maintain single role aircraft, just for tankers. We needed a Swiss army knife, a multirole plane to transport 200 passengers over long distances, transport cargo, address refuelling, do medical evacuations, and preferably all at the same time," Polman says.

Along with the Netherlands, Luxembourg was the first to commit, followed by Poland, while Germany, Belgium and Norway remained hesitant, although they had participated in the harmonisation process. For the trio of the Netherlands, Luxembourg and Poland, signature was set for the NATO summit in Warsaw in 2016, until the government of the day in Warsaw decided not to pursue its involvement.

"We were able to turn it around with a Memorandum of Understanding (MoU) between the Netherlands and Luxembourg, still in 2016. We signed the contract for only two aircraft, but with an option to buy five more, so that everyone who was still at the table could join whenever they saw fit." The MoU was hand-carried back and forth between Luxembourg and the Netherlands and was finished just in time before the deadline in the procurement process expired, he recalls.

There were other hurdles along the way, of course. Who would be best placed to take EDA's work to the next stage? Who would be the contract executor? The NATO Support and Procurement Agency (NSPA) and OCCAR (Organisation Conjointe de Coopération en matière



A Eurofighter is refueled in flight by an A330 MRTT aircraft on 6 February 2023.

d'Armement / Organisation for Joint Armament Co-operation) were both candidates and ended up collaborating.

How would the programme of two smaller Member States, Luxembourg and the Netherlands, resize to include Germany in 2017 with its needs for five aircraft and the requirement to have part of the fleet stationed in Germany? Compromises were found, says Polman.


"We were lucky that everyone believed in this and wanted to make this happen. EDA provided support at the highest level, as did national experts who kept ministers of defence closely involved," he says. "We also avoided any creep in requirements. We largely stuck to what we initially agreed."

Norway also joined the programme in 2017, Belgium followed in early 2018 and Czechia lastly joined the MMF programme in October 2019.

Model programme?

The fleet declared Initial Operational Capability (IOC) on 23 March this year, allowing MMF to perform all types of missions, meeting the full range of national and NATO requirements. Ten aircraft have been ordered to date, with seven already delivered. The eight and ninth aircraft are expected to be delivered in 2024, while the tenth will be delivered at the end of 2026.

Could it be done again for another major European defence collaborative project? The Netherlands Minister of Defence Kajsa Ollongren believes it should be seen as a model for cost-sharing, mentioning three examples: strategic air transport for EU military missions; airlift capability for outsized cargo; and sealift, pooling and sharing like roll-on-roll-off ships.

"Let this project be an inspiration for many more projects to come," she told the European defence community when the IOC was declared. "This is what the future of defence cooperation should be like. ... We have to overcome national, industrial interests, we have to jointly develop, procure and operate capabilities, and it will bring us a stronger European Union and a stronger NATO." 

Airbus MRTT fleet (MMF) at a glance

- > Over 175 missions flown and delivered over six million litres of fuel to NATO fighter jets.
- > Carries 300 passengers, has a medical evacuation layout with 40 stretchers.
- > Evacuated civilians to safety after the fall of Kabul in August 2021.
- > Can carry up to 111 tonnes of fuel, providing 2,200 litres a minute.
- > Supports many types of NATO aircraft, including F-16, F-35, C-17, Eurofighter and Gripen.

"THERE'S A REALITY CHECK WHEN WE MEET INDUSTRY"

Until the war in Ukraine, many Europeans felt that the defence industry was detached from the rest of the economy. Not so for the European Defence Agency (EDA). **Pieter Taal**, head of industry strategy at EDA's Industry, Synergies and Enablers Directorate (ISE), **Zsolt Nagy**, EDA's policy officer in strategic foresight, and **Carl-Johan Lind**, the Agency's industry engagement policy officer, talk to *European Defence Matters* about a relationship going back decades.

European defence cooperation is the art of the possible, to borrow from 19th-century German statesman Otto von Bismarck's quip about politics. Industry brings an understanding of that art, says Taal. Even if EDA has never sought to dictate project ideas to defence contractors, there is a realism that industry brings. "At EDA, we serve the Member States, but there's a reality check when we meet industry. Industry can tell you what is actually possible," he says.

The EU has no defence industry advisory group. That makes EDA's work even more important. "Industry would like to have something like the NATO Industrial Advisory Group, the NIAG," Taal explains. "But at EDA we can bring together, for example, executives and national armament directors to provide a forum for free exchange of views," he adds.

Research and technology (R&T) is arguably the longest-running involvement with industry, predating EDA's creation in 2004. "If you look at the historical trajectory, especially in R&T, cooperation was driven by governmental research agencies, transitioning to industry today," Lind says. "This is reflected in the way that we approach industry, because they are the ones who actually do these things."

Strategy blues

The EU's Defence Technological and Industrial Base (EDTIB) plays a central role in the political ambition for strategic autonomy. "One of the core tasks of EDA is to support a stronger defence industry base in Europe, even if the nature and character of that support changes over time," explains Nagy. "It's in the DNA of the Agency."

Taal recalls that in 2007, the EU member states adopted in the EDA framework an EDTIB strategy, which was in itself a recognition that a European base did exist. Unfortunately, the global financial crisis and the ensuing eurozone crisis meant that money to invest was in short supply. "We had a European strategy, but no actual European money," Taal laments.

Call it a desire for EU strategic autonomy or just facing facts – the upheaval of Russia's invasion of Ukraine, demands for the Union to provide more security for its citizens, and U.S. pressure on Europe to do more to shield against threats in its neighbourhood have all given the defence industry a new impetus.

Take Five

For EDA, that translates into a wide engagement with industry, channelling advice to foster government-to-industry and industry-to-industry co-operation in search of the requirements that EU armed forces need, along the following lines:

Firstly, **workshops** on dedicated capability topics, consultation in the development of the Capability Development Plan (CDP) and involving industry in military exercises are part and parcel of the pillar. "It's impossible to meet every industry representative physically, so we have workshops, we go to exhibitions, we have structured dialogue and we ensure our top management is in touch with senior industry executives," Taal asserts.


Secondly, in the area of Research, Technology & Innovation (R&T&I), encouraging industrial participation to

attract innovative companies to the defence sector is fundamental. EDA's Capability Technology Groups (CapTechs) are part of that. "Every CapTech has an industrial rapporteur and they take part in the work of the research community," says Nagy. Industry is also an important part of HEDI (see EDM page 30).

Thirdly, the 'Key Strategic Activities' (KSAs) help focus on what technology, manufacturing **capabilities and skills** should be safeguarded and developed at the European level.

Fourthly, **wider EU policies** cannot be ignored. How can industry support, say, civil and military aviation in military operations? When it comes to adapting to climate change, can industry help stimulate collaborative projects? "We bring a qualitative analysis, too, by bringing all these factors together in a way that is not possible at the national level," Lind says.

Lastly, information sharing, cross-border partnerships and access to EDA's **software platforms** are crucial, including the B2B Platform, EDA's online tool that allows defence companies to search for potential partners. In addition, in March 2019, EDA launched 'IdentiFunding', with software to help find funding for defence projects.

"With industry, we can identify areas of cooperation, advance technology, transfer knowledge and develop our economies in a way that is very important for our Member States," Nagy says. "But here, it is important to see strategic autonomy as a journey rather than a destination." 

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