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15 years supporting European defence

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We hope this magazine will provide valuable food for thought and information about EDA's work. Should you have comments or recommendations, please get in touch: info@eda.europa.eu

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EDA 15th Anniversary

Foreword by Federica Mogherini, Head of the Agency

It has been an honour for me to lead the European Defence Agency in these five years, and up until its fifteenth birthday. I remember very well my first visit to the EDA headquarters. Together with the EDA leadership and staff, we realised that we shared the same goal: to make European cooperation the norm – not the exception – on defence matters too. Five years ago, few people imagined how far we would come. In these years European defence cooperation has expanded like never before. And the Agency has been at the core of our work and of all the progress we have achieved together.

When we worked on our Global Strategy for foreign and security policy, presented in 2016, we called on Member States to make "full use" of the Agency's potential. The Strategy set a new level of ambition for European cooperation on defence and acknowledged EDA's "key role" in developing better and more interoperable capabilities together. What happened in the following months and years was unprecedented. A range of new initiatives were launched to boost defence cooperation through joint planning among Member States, joint research and development, joint training and action. We harnessed the untapped potential of the Lisbon Treaty, and set up a Permanent Structured Cooperation on defence among Member States (PESCO). We launched a Coordinated Annual Review on Defence (CARD). And for the first time, the European Commission created a European Defence Fund (EDF) to incentivise cooperative projects on defence.

EDA made essential contributions to crafting these initiatives all along the way, and now plays a central role in their implementation. The Agency is the secretariat for both CARD and PESCO, together with the European External Action Service and the EU Military Staff. It is also a central operator for EU-funded defence activities. The Agency is today in a unique position to contribute to coherence among the various initiatives, efficiency and a steady focus on our capability priorities.

This is why we have worked to strengthen the Agency so that it can be up for the new task. The Long Term Review that we initiated led to a threefold reinforcement of EDA, which was approved by Defence Ministers in May 2017: the Agency is now recognised as the main intergovernmental instrument to identify shared priorities at EU level on defence capability development; it is the preferred management support structure at EU level for collaborative technology and capability development; and it is the military interface and central operator for EU-funded defence-related activities. It will be essential to ensure that EDA always has the means to fulfil such crucial tasks.

All the progress achieved has only been possible because of a strong political will to move forward. All relevant actors have played their part towards a shared goal – from Member States to the European Commission and Parliament, in close cooperation with the EU Military Committee, the EEAS, the EU Military Staff and EDA. The same strong determination will be necessary in the years ahead. The choice of "making cooperation the norm" will have to be confirmed day-by-day with more concrete action.

The Europe of Defence is taking shape. To get there, the unique expert role of EDA will be even more needed in the future than today.

15 years supporting European defence

Flashback 2001-2004

The birth of an Agency

Building on previous efforts by the Western European Union (WEU) to boost armaments cooperation, the idea of creating a European agency for defence capability development, research, acquisition and armaments gained decisive traction when, in 2002, it was taken up by the 'Convention on the Future of Europe' whose mission was to reflect on the future of Europe and prepare a draft Constitutional Treaty for the EU.

Established by EU leaders and chaired by former French President Giscard d'Estaing, the Convention set in motion a process that led to today's European Defence Agency (EDA), starting with the decision in September 2002 to set up a dedicated Working Group on Defence. Chaired by Michel Barnier, the group had to investigate "the possibility of setting up an arms agency whose tasks (research, development, acquisitions) and operating methods would have to be studied in detail", acknowledging that "there [is] in fact currently no cooperation on armaments at Union level". The idea of a new Agency proved a consensus builder. In its final report, the group laid out some of the foundations of what would become the EDA we know today, although the final name wasn't there yet.

"The setting up on an intergovernmental basis of a European Armaments and Strategic Research Agency was supported by many in the Group", the report stated. "The Agency's initial tasks would be to ensure the fulfillment of operational requirements by promoting a policy of harmonised procurement by the Member States, and to support research into defence technology, including military space systems. The Agency would incorporate, with a European label, closer forms of cooperation which already exist in the armaments field between certain Member States (OCCAR, LoI). The Agency should also be tasked with strengthening the industrial and technological base of the defence sector. It should also incorporate the appropriate elements of the cooperation that most Member States undertake within the WEAG."

The working group laid out a few ideas regarding the way this future Agency could interact with its stakeholders. "All Member States which so wished could participate in the Agency, the composition of which would not be linked to other, limited forms of defence cooperation", the final report explained. "Certain Member States could constitute specific groups based on a commitment to carry out specific projects", which could also "be opened up on an ad hoc basis to countries which are not members of the European Union".

Thessaloniki EU Summit

The Convention finished its work in July 2003 with the publication of a Draft Treaty establishing a Constitution for Europe. Meanwhile, Member States were also busy preparing the European Council that would take place in Thessaloniki in June 2003. In its final conclusions, this Summit confirmed that a new European Defence Agency was on the agenda and would soon become a reality. "The European Council [...] tasks the appropriate bodies of the Council to undertake the necessary actions towards creating, in the course of 2004, an intergovernmental agency in the field of defence capabilities development, research, acquisition and armaments", the final declaration stated.

The overall objective of the new body was briefly explained: "This Agency, which will

Michel Barnier, chairman of the Convention's Working Group on Defence

The decision to create EDA was taken at the Thessaloniki European Council in June 2003

be subject to the Council's authority and open to participation by all Member States, will aim at developing defence capabilities in the field of crisis management, promoting and enhancing European armaments cooperation, strengthening the European defence industrial and technological base and creating a competitive European defence equipment market, as well as promoting, in liaison with the Community's research activities where appropriate, research aimed at leadership in strategic technologies for future defence and security capabilities, thereby strengthening Europe's industrial potential in this domain".

The Agency Establishment Team

The next step was to prepare the ground for the new agency. Nick Witney, who would become the first EDA Chief Executive in 2004, played a central role in that process. "During the second half of 2003, a working group was convened in Brussels to make a reality of this and I was the British representative. As the deputy head of the UK MoD's strategic affairs directorate, I travelled to Brussels regularly in the second half of 2003 to meet with my counterparts", he recalls.

Even though Member States agreed that an Agency would be a good thing, there was no clear understanding at the time of what its exact role should be, or where it would be positioned on the institutional grid, Witney said. "The only thing we had was two sentences from the Thessaloniki Council, which served as a blank screen onto which different people projected different aspirations. By November 2003 it was clear that the only way out was to establish a special project team, with a brief to report by end April ".

After some delay, High Representative Javier Solana picked Nick Witney to head this Agency Establishment Team. With time now very tight, he gathered a small team around him in a tiny office on the top floor of the Kortenberg building, home of the EU CSDP structures. The Team's motto was "Form Follows Function"; that is, they set to one side the contentious legal and organisational issues until they had established a clear understanding of what the Agency would do and how it would do it.

The team liaised closely with an ad hoc representative group of all EU Member States, which they met with every two weeks. "It was a useful interaction", Witney explains, "because it allowed us to reassure them but also to get their fingerprints on what we were doing to make sure they couldn't repudiate it at the end". While some argued the Agency should mainly focus on capability development, others pushed for a predominant armament role. "Our job in a way was to demonstrate that the Agency was able to do both, and moreover by doing both it could succeed better in each", Witney explains. Reflecting this debate, the European Defence Agency name was finally adopted because "it was short, accurate, unconstraining", Witney says, and also because anything more specific could have been seen as trying to push the Agency one way or another.

By the end of April 2004, the team was able to submit its blue-print for the new institution, clearing the way for Member State diplomats to finalise the legal documentation.

The race to become operational

On 12 July 2004, Member States formally adopted the Council Joint Action 2004/551/CFSP on the establishment of the Agency, EDA's birth certificate. Soon afterwards, Nick Witney was appointed first Chief Executive. The second half of 2004 was dedicated to putting everything in place. Hilmar Linnenkamp joined as Deputy Chief Executive, and in October the first four directors were chosen, and began assembling their own teams. At the same time, the embryo staff began to define the Agency's first projects and to establish links with a wide range of stakeholders, from military authorities to the defence industry. In autumn 2004, EDA's Steering Board, made up of Defence Ministers from each Member State, met for the first time. They approved the budget for 2005, the first annual Work Programme, and the official structure of the Agency. By the end of 2004, the deadline set at Thessaloniki, the Agency was up and running, albeit in temporary offices in the Justus Lipsius building. With its staff growing fast, the Agency had to look for a permanent home: in 2005, it moved to its current Rue des Drapiers headquarters.

European defence, one achievement at a time

By **Javier Solana**, first EU High Representative for the Common Foreign and Security Policy (1999-2009) and Head of the European Defence Agency (2004-2009).

"Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity."

These words, arguably the most famous of the Schuman Declaration, inspired the foundation of the European Coal and Steel Community in 1952. Yet the road to European integration indeed turned out to be both bumpy and winding. Only two years on, for example, the French National Assembly rejected a treaty that would have established a European Defence Community (EDC). As it happens, the EDC plan had been envisioned by French diplomat Jean Monnet, one of the architects of the Schuman Declaration.

The failure of the EDC – through which six European countries would have created a supranational army – turned the spotlight towards NATO, which had been founded a few years earlier. In the decades that followed, European countries undertook several joint initiatives in the field of defence, but NATO's umbrella overshadowed them all. At no point was this more glaringly obvious than during the wars in the Balkans in the 1990s, which exposed the shortfalls of the European project in terms of security cooperation and military capabilities. The United States, whose global hegemony was at that time uncontested, stepped into the vacuum created by the EU's inaction.

Wake-up call

Much like World War II, the Balkan wars were a wake-up call for Europe: it was plain to see that the poison of conflict was still corroding the continent. Thus, before the turn of the century, European defence cooperation received a renewed boost. The 1993 Maastricht Treaty opened the door to a common defence policy in the EU, and the 1998 British-French declaration of Saint-Malo decisively endorsed the Union's capacity for autonomous action on the international stage. Ever since, defence integration has been a quiet success story of the EU.

To be sure, concrete achievements in the area of security and defence have come along at a more modest pace than Monnet envisioned – but they have come along nonetheless.

Creation of EDA

One such achievement was the European Security Strategy, adopted in 2003; another was the birth of the European Defence Agency (EDA) in 2004. EDA was a brainchild of the Convention on the Future of Europe, which had been tasked with producing a draft Constitution for the EU. Although French and Dutch voters rejected the Constitutional Treaty in 2005, the prior establishment of EDA showed the way forward. The fiasco of the Constitutional Treaty was not to be interpreted as a blanket rejection and, therefore, many ideas put forward by the Convention ended up finding a new home in the Treaty of Lisbon of 2009.

The Lisbon Treaty enshrined EDA's role as a cornerstone of the EU's flourishing security and defence landscape. The Agency's intergovernmental nature – EDA is subject to the authority of the Council – places it in an ideal position to act as a catalyst for joint capability-building initiatives involving Member States. All EU countries but one are members of EDA, which has also reached agreements with several non-EU countries (Norway, Serbia, Switzerland and Ukraine). EDA allows countries to cooperate on an ad hoc basis, and provides them with invaluable expert input. Additionally, it represents a useful vehicle for Member States to liaise with key EU institutions, such as the European Commission.

In yet another breakthrough, the Lisbon Treaty offered the option of so-called 'Permanent Structured Cooperation' among Member States. Unfortunately, this became a neglected asset in the EU's toolbox, as


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> "The 15th anniversary of EDA is a cause for celebration, as well as a perfect occasion to reaffirm the Agency's mission and insist on the need to streamline military spending in Europe"

Europe entered an onerous decade marked by multiple crises.

New momentum

Nevertheless, the EU once again ended up finding new momentum in the midst of the storm. Instead of allowing itself to be dragged down by the opponents of European integration, who convinced British voters to make the regrettable decision of leaving the bloc, the EU kept moving forward.

First, the European Security Strategy was replaced in 2016 by a more ambitious Global Strategy, which set the development of 'strategic autonomy' as a fundamental goal of the EU. As the Global Strategy puts it, "a sustainable, innovative and competitive European defence industry is essential for Europe's strategic autonomy." All efforts in this direction have received the vital support of EDA – a critical lever in the EU's quest to underpin its self-sufficiency in an increasingly volatile international environment.

Second, EDA finalised its Long Term Review (LTR) in 2017, thus answering the Global Strategy's call for enhanced defence cooperation among EU Member States. The LTR refined and reinforced the Agency's role as the central hub in terms of capability development and strategic planning in the EU. Since 2017, EDA has not only taken on new responsibilities, but its added value has also increased across the board.

Third, the 'Permanent Structured Cooperation (PESCO), foreseen in the Lisbon Treaty, finally came into fruition. PESCO was established in December 2017 with the participation of the vast majority of EU Member States. While it cannot be expected to immediately put an end to today's excessive military fragmentation, PESCO can kick-start a virtuous cycle leading to more robust and cohesive European defence capabilities.

It is important to underline that PESCO and NATO are fully compatible – actually, by tapping into synergies on a European scale, PESCO will reduce wasteful duplications and indirectly benefit other NATO allies. As European Commission President Jean-Claude Juncker said in 2017, EU countries combined spend half as much as the United States on defence, yet attain only 15 per cent of its military efficiency. A case in point is the fact that EU countries use 17 different types of tanks, while the United States uses only one.

EDA and PESCO: two sides of the same coin

The fortunes of PESCO and EDA are inextricably linked; indeed, they can be thought of as two sides of the same coin. That is true in an institutional sense (EDA is part of the PESCO Secretariat) and in a functional sense (many PESCO projects require EDA's direct support). Moreover, both initiatives illustrate the EU's new-found drive in defence integration, which has also led to the launch of the European Defence Fund (EDF) and the Coordinated Annual Review on Defence (CARD).

Given the intricacies of this burgeoning framework, it is clear that EU Member States need to keep empowering EDA if PESCO is to realise its full potential.

The 15th anniversary of EDA is a cause for celebration, as well as a perfect occasion to reaffirm the Agency's mission and insist on the need to streamline military spending in Europe. Current levels of fragmentation severely hinder the EU's competitiveness and self-reliance, and are simply unsustainable. EU citizens appear to agree with this assessment, as polls show there is significant public appetite for further integration in the area of security and defence.

EDA is well suited to keep leading this historical process, and to consolidate itself as an epitome of the EU of the future: flexible, smart, and effective.

15 years supporting European defence

Current & former Chief Executives reflect on EDA's past and future

Cooperation pioneers, innovators, facilitators

To tap into EDA's collective memory, *European Defence Matters* brought together those who, as Chief Executives, have steered the Agency through fifteen exciting yet challenging years: **Nick Witney** (2004–2007), **Claude-France Arnould** (2011–2015) and **Jorge Domecq** (in charge since 2015). **Alexander Weis**, who served as Chief Executive from 2007-2011, could unfortunately not join this exceptional come-together. Question Time.

Mr Witney, you surely remember 30 July 2004 when you were appointed first CE of the European Defence Agency (EDA). What was your dominant feeling on that day?

N.Witney: I predominantly felt a sense of relief that the decision had been formalised before the summer break because there was so much to be done and no time to waste. You have to recall that the whole establishment process of the Agency took place under enormous time pressure. The Thessaloniki Summit in June 2003 had decided that the Agency was to be created "in the course of 2004". The autumn of 2003 was lost to a false start; and when I was called to Brussels in January 2004, I barely had three months to set up the Establishment Team and develop a plan. This led on to the creation of the Agency as a legal entity in June (the Irish Presidency were brilliant on this) – leaving a scant half year to achieve first operational status by the year-end, to meet the Thessaloniki deadline.

Which were the main difficulties in getting the Agency fully up and running?

N.Witney: There was a lot to be done in terms of recruitment, to start with. This was more complicated than I expected: naively, I was taken aback at the determination of a number of capitals to secure particular posts for their own nationals, sometimes for wholly unsuitable individuals. But we ended up with a top team whom I was more than happy with, and they then recruited their immediate support. So by year-end we had some 25 staff in place, and had been able to sort out work programmes and agendas for the year ahead. We were also engaged in the search for offices, and then the IT and security work to convert the Rue des Drapiers into our new home.

Which were the first priorities you started with?

N.Witney: First of all, we spent quite some time on getting people intellectually on the same page, debating policies and strategies and trying to persuade Member States on what we felt was necessary: the imperative to increase cooperation and modernise capabilities, away from heavy metal and high explosive to a greater emphasis on the new technologies of "network-centric warfare"; reducing spend on excessive manpower, and increasing it on research and development; fostering a stronger defence technological and industrial base through consolidation on both demand and supply sides, and a more open internal defence equipment market.

At the same time, we wanted to have a few demonstrative projects to start with. We looked into armed fighting vehicles and Remotely Piloted Air Systems (RPAS) and also started a lot of research collaborations, for instance on software-defined radio. Another project we focused on was the Code of Conduct on Defence Procurement, which was approved in November 2005 (a voluntary approach to increasing cross-border purchasing, which worked rather well before the Commission decided to legislate), and a first Joint Investment Programme on research dealing with soldier protection. From time to time, we would also throw in new ideas. One of them, I remember, was to investigate a European coastguard. 'A coastguard? That's ridiculous!', was the overall reaction. Fifteen years on, it doesn't sound ridiculous anymore! →

Was the newly born agency immediately taken seriously by national MoDs?

N.Witney: Yes and no. I was very fortunate to be there at a time when the general mood and political momentum were very positive and pro-EU. Europe was so fashionable and popular. EDA and defence cooperation were new projects and everyone wanted to be part of them! It was also the time of enlargement, and all the new members were so enthusiastic. All this played in our favour. It was only over time that I realised the extent of resistance and inertia in the machinery: it was hugely difficult to get the Ministries of Defence actually to change the way they spend their money.

You mean resistance from the military?

N.Witney: Yes, definitely. If there was one group of stakeholders who were not supportive to EDA at the outset, it was the military. This came to me as a big surprise. I think the reality was that, as professional men, they were much more comfortable working with the Americans in NATO, and viewed European defence with some skepticism; crisis-management operations were seldom greeted with enthusiasm. But perhaps I was unrealistic in my expectations of how rapidly a complex culture could change.

During the mandate of Alexander Weis, one of the highlights was the first Capability Development Plan (CDP) drawn up in 2008. Did it lay the groundwork for today's joint planning and prioritisation?

J.Domecq: Yes, absolutely. But the CDP has strongly evolved since then. The first three versions of 2008, 2011 and 2014 cannot be compared to the 2018 plan which, for the first time, has now been recognised by Member States as the baseline reference for all European efforts in that domain. For a long time, MoDs had viewed the CDP as a nice tool to have but they only remembered it once every few years when it had to be reviewed. In between, they didn't take it into account when drafting their national plans. That has changed. Today's baseline CDP is a result of EDA's work throughout the years.

Madame Arnould, under your tenure, EDA gained traction with the 'Pooling & Sharing' concept which guided its work for years.

C.-F.Arnould: 'Pooling & Sharing' was a concept which provided much political impetus for EDA's subsequent work. The objective was broadly and simply to be more efficient by acting together. Then came the question: should the Pooling & Sharing initiative be hosted by the EU Military Committee (EUMC) or by EDA? I had very pragmatic discussions with the Chairman of the Military Committee at the time, General Håkan Syrén, and we agreed that we should support each other. And, obviously to provide substance, synergy between the capability, the procurement and the R&T actors, and connection between the expert level and the political level, namely Defence Ministers, EDA is the place to go. The EUMC was important to involve the Chiefs of Defence (CHODS) and take into account, thanks to the work of the EUMS, the lessons of EU operations.

Nevertheless, in some corners, Pooling & Sharing and, thus, our work in EDA, were perceived as threatening defence budgets. Therefore, we had to be very careful not to give our stakeholders the impression that the objective was "to do more with less". We constantly had to reassure them that EDA was there to support them to do things better together, not to cut their spending. We not only needed more defence cooperation but also more defence spending. We all agreed that to pool and share, you need proper capabilities to pool and share.

In December 2013, the European Council held a first debate on defence and identified priority actions for stronger cooperation. How big a political impetus was this for EDA's work?

C.-F.Arnould: It was essential. We had always tried to persuade the Heads of State and Government to address defence

cooperation. Not in vague strategic terms but linked to the main topics that dominated their agenda: economic growth, job creation, innovation, etc. Herman Van Rompuy, as President of the European Council, agreed that this approach was the best way to ensure the leaders' interest for defence and their commitment. We worked with the President's very pragmatic and efficient cabinet, with the Commission, with the Secretariat of the Council and, together, provided input for the debate on those issues which went well, even if some important ideas such as a financial mechanism largely disappeared. At the same time, a strong incentive was provided by the decision taken by the Belgian authorities to provide VAT exoneration for programmes conducted in EDA.

Did it have an immediate impact on EDA's work?

C.-F.Arnould: Yes, of course. We chose four projects which were fully supported by Member States: air-to-air refueling, remotely piloted aircraft systems, governmental satellite communications and cyber. These were topics on which everybody wanted to see action and results. Industry was also involved, which was crucial.

N.Witney: A key aspect of the December 2013 conclusions was that they set deadlines, meaning that project leaders were required to come back to the European Council within 18 months and brief on progress. But the tragedy was that it actually didn't happen because, somehow, the ball was dropped afterwards...

J.Domecq: We should not forget that in 2014/2015, things changed drastically and new security threats, such as terrorism, arose in and around Europe. All of that made citizens and governments think: shouldn't we cooperate more and better to protect our citizens? This new context led to the 2016 EU Global Strategy which set the tone for a much more ambitious security and defence agenda.

Mr Domecq, you arrived at the Agency at that particular moment, in 2015.

J.Domecq: Indeed. And the first thing that struck me was the continuous questioning by Member States of the tasks they previously had given to the Agency. And while we mostly managed to deliver on those tasks, Member States very often got cold feet and backtracked... But as time went on, they increasingly understood that there is only one place where they can get all the different military viewpoints – from armament to capability & planning directors, from research to defence policy directors – reflected in one single platform. And that is EDA.

Your mandate so far is marked by the setting-up of new EU tools (CARD, PESCO, EDF) all of which EDA is involved in. Is this a true water-shed moment for the Agency?

J.Domecq: Well, I would argue that EDA has gone from one water-shed moment to another since its creation. The Agency's life is as challenging as are the efforts to have a more efficient European defence. Both go hand in hand. I think that the future of the Agency will be very much tied to the success of PESCO. It's two sides of a same coin, and it's not by chance that the Treaty put us together.

Going forward, it is important that Member States have a clear view on what EDA should concentrate on. That's why the Agency's 2017 Long Term Review (LTR) was so important. It reinforced EDA as a real planning and prioritisation instrument, which it was not before. It also confirmed the Agency as the natural European hub for collaborative defence capability and technology development. And EDA's third key mission is to ensure that EU policies take into account what our Armed Forces need.

The strategic discussion we had during the LTR with Ministers' sherpas was essential to define and strengthen the Agency's missions and to prepare it for the roles it is now playing in CARD, PESCO and the EDF. Now that the European Commission has jumped into the defence realm, we needed to have a clear vision from Member States on where they want EDA to be placed on the new defence map.

Is EDA now well enough equipped for the future, or do you see the need for further adjustments?

J.Domecq: We continue to evolve. Member States have to understand that if they don't reflect at home the collaborative efforts done at EU level – for instance if they ignore the European capability development priorities when setting up their national defence plans – then EDA will become a mere bureaucratic householder. This would mean that Member States don't take seriously the support work we do for them. That is the first big challenge I see for the Agency.

The second challenge is to make sure EDA has the right resources, especially human resources. We are all fishing in the same pond: we, the Agency, but also the national administrations which have huge staffing needs, especially since defence budgets are rising again. NATO is also having staff increases. Plus of course the Commission →

Alexander Weis
EDA Chief Executive 2007-2011

which will have to attract defence experts in the future. How can we handle this challenge? On the European side, we should try to avoid duplication of structures.

The third challenge will be to maintain EDA as a hub where it is interesting for industry to engage in for the development of new innovative and disruptive technologies, such as Artificial Intelligence, which will change the way warfare is conducted in the future.

What is your personal assessment of the way EDA's relationship with NATO has evolved over years?

N.Witney: Things have changed considerably. When I arrived, there were desperate political problems around the relationship between the EU's CSDP and NATO. Therefore, my first concern was not so much to seek cooperation but rather to deconflict the situation with NATO. When NATO decided to take up one particular topic to improve collective defence, we would focus on something else. To not obstruct each other, that was probably the best we could hope for at that time.

C.-F.Arnould: During my time, we had to demonstrate that we work well with NATO. I was happy to find efficient and cooperative partners on their side. The work with the Allied Command Transformation (ACT) was excellent, in particular to deconflict activities under Pooling & Sharing and "Smart Defence" that the NATO Secretary General promoted soon afterwards.

I also would like to mention a topic on which cooperation was particularly efficient: SESAR (Single European Sky ATM Research). The UK was so nervous about it that they intended to raise the issue at the level of a NATO summit. But we demonstrated that EDA could successfully provide the interface between the military requirements and the EU structures in charge of that programme. I remember that Catherine Ashton came for a visit when a SESAR related meeting was also taking place in the building. She could hardly believe that we had in one of our meeting rooms all NATO nations, including the US and Turkey, as well as all EDA members, including Cyprus, SESAR Joint Undertaking and NATO International secretariat sitting at the same table.

N.Witney: This would have been totally impossible in my days! It shows how things have changed.

C.-F.Arnould: Another aspect of our relationship with NATO was the strong support we got from the US, especially the Pentagon. They were very supportive of what we were doing at EDA, especially in the field of air-to-air refuelling. It was important for them to show, including to the Congress, that Europeans were beginning to be serious about enhancing their capabilities and addressing their shortfalls.

J.Domecq: When I arrived, I immediately saw the need for a structured relationship with NATO, upstream, in the prioritisation domain. Today we work hand in hand on key tools such as CDP, NDPP and CARD and in many other domains. So, even before the EU-NATO Joint Declaration (in 2016), we had already gone ahead with closer cooperation. We avoid duplication in both senses. And, importantly, during my period, our Member States never blocked NATO from participating in a single meeting in EDA. Which, unfortunately, has not been the case the other way around. Looking ahead, transparency will be essential for a strong relationship.

And the relationship with the European Commission? How has it evolved over time?

C.-F.Arnould: Just before my appointment, relations were difficult, particularly in the context of the revision of the Joint Action (which was replaced in 2011 by a Council

Decision). I remember a letter from the Commission that challenged some key EDA missions, especially related to competition, markets and the implementation of the two defence directives. But we found the proper formulation rather quickly, thanks to Michel Barnier and his cabinet.

Afterwards, the cooperation was excellent and easy on many issues. I already mentioned SESAR JU. I should add DG MOVE, DG Connect, and agencies such as EASA: on certification, for instance, which I regard as very important, our work was fully complementary. The main challenge was with DG Industry and Market: either you have theological quarrels on who should do what – community versus intergovernmental approach – or you concentrate on what is to be done and where it is best achieved. We did not always agree on everything but we knew that we really needed each other to be successful. And I was lucky enough to have great interlocutors both in the cabinets and the DGs.

J.Domecq: Today, EDA has working relations with 16 Directorates-General (DG) in the Commission. We also have reinforced our cooperation with its executive agencies, such as Frontex, the cyber agencies and many others. Something which would have been unthinkable some years ago. We've seen a complete change in Commission attitude towards defence: while not so long ago, there was a lot of reluctance and even dogmatism on their side not to touch anything related to defence, it now wants to get involved notably with the European Defence Fund. There is also talk of a DG Defence in the next Commission.

How to you assess these developments?

J.Domecq: I have nothing against a DG Defence to manage the big budget of the European Defence Fund. But we should not throw away the results of the test runs we did over the past three years. I mean the Pilot Project as well as the Preparatory Action on Defence Research (PADR) which is managed by EDA and is going very well; you only have to read the reports of the independent experts. Also, we should avoid mixing things up, and instead keep a clear line on who is doing what. Capability prioritisation and defence planning, for instance, is not something to be done by the Commission. And I don't know any Member State who wants the Commission to take care of that. So, if the EDF intends to be more than a strong defence cooperation incentive, we might end up with a Fund which is not capability but industry driven. And I'm not sure this is what Member States want.

How do you see the future of the Agency?

C.-F.Arnould: EDA is well placed and equipped to play a key role in the field of joint capability development, for today and tomorrow. The design is outstanding. The combination of complementary tasks, complementary shareholders, the network of stakeholders, having an intergovernmental approach but supported by a lean and competent structure and part of the EU family, building on experts' input but receiving guidance at the political level of Defence Ministers, these are tremendous assets for what is to be done. But Member States have to use EDA's full potential now if they want it to be even more useful and efficient in the future. If we fail to use today's momentum for defence cooperation, it will be very difficult for us to return to it again later.

J.Domecq: As said before, I think the future of the Agency is very much tied to PESCO and whether we can make concrete progress towards strategic autonomy. If we manage to do this, then I see EDA playing a very important role, especially for making the different EU defence initiatives work in a coherent manner. If we don't get this right now, it will be a missed opportunity that might not come back anytime soon.

Why EDA is the right intergov capability prioritisation, plann

"For a relatively small country such as Finland, cooperation with other Member States is crucial"

By **Antti Kaikkonen**, Minister of Defence of Finland.

We are soon approaching Finland's Presidency of the Council of the European Union. We will have busy and interesting months ahead of us. We are looking at ways to promote the EU defence agenda, while defence will also be among our main national priorities. Our citizens in the EU expect a strong focus on security. This means especially strengthening the EU as a global actor and deepening security and defence cooperation as well as enhancing the EU's and Member States' defence capabilities.

Finland has been supporting EU defence cooperation for a long time. A lot has been achieved over the years, including the creation of the European Defence Agency (EDA) 15 years ago.

EDA was established to support Member States in their efforts to improve European crisis management capabilities and to sustain the European Security and Defence Policy as it stands now and develops in the

ernmental platform for joint ing & development

future. The Agency's agenda has grown rapidly ever since. The Agency is now the main intergovernmental platform for European level capability planning. For us in Finland, EDA is also the main European forum for defence materiel cooperation.

What is important for us is that EDA combines different working areas: the development of defence capabilities and defence materiel cooperation, the strengthening of defence technology and industry foundations, and the promotion of research and technology cooperation in the defence sector. This is a quite unique combination.

Many new EU defence initiatives have been launched recently. We see EDA's biggest value in concrete capability projects and activities such as cyber defence and military mobility.

For a relatively small country such as Finland, cooperation with other Member States is crucial.

Looking at EDA's work in the Research and Technology (R&T) domain, we can say that it has definitely been of added value for us. We have saved resources through cooperation and have also learned valuable lessons from other Member States. Participation in the European defence research and development serves the defence research needs of Finland. Cooperation between Finland and EDA has offered benefits such as broader and more in-depth views on research problems and support networking with other European cooperation partners.

Another good example is the cooperation under the Agency's helicopter training programme where EDA has done excellent work. Our NH-90 pilots are very satisfied and now perform major parts of their basic training at these EDA courses.

In 2016, Finland hosted EDA's 'Cold Blade' helicopter exercise

We in Finland are also happy with EDA's role as a coordinator of military views in wider EU policies, as the combined voice of many is more effective than the voice of every single one.

The European Commission has taken new initiatives in defence matters. While welcoming and strongly supporting the actions taken by the Commission, we also very much value the intergovernmental nature of EDA. In our view, there is a need for such cooperation format amongst EU Defence Ministers.

As regards EDA's current activities, I would like to highlight three of them in particular. EDA's roles in the Permanent Structured Cooperation (PESCO) and the Coordinated Annual Review on Defence (CARD) as well as in the EU Capability Development Plan (CDP).

For us, PESCO is a broad framework for defence cooperation. EU defence is no longer only devoted to crisis management, which is a good thing. The goal is to deliver full-spectrum capabilities that can be used in all formats. It is also important to mention that in our view, the EU's defence initiatives are by design complementary to those of NATO. EDA, as part of PESCO Secretariat, has done a lot of work with NATO, making sure there is no unnecessary duplication.

EDA has conducted the CARD pilot in a professional manner and in good cooperation with Member States. The bilateral negotiations were constructive, and the process has been a useful learning experience for us.

The CDP continues to be the backbone of our cooperation and the link to national defence planning. We were happy with the priorities agreed. Naturally, the CDP priorities are also a tool to link all the EU initiatives, like PESCO and the Defence Fund, together.

From 2017 onwards, senior officials from Member States have been working on EDA's Long Term Review. The report based on this work was approved by the Defence Ministers. Finland was very pleased that the Defence Ministers endorsed the reinforcement of the Agency as the forum for prioritisation, project support and interface towards wider EU policies. This is a good basis for the work forward.

I took over as Finland's Minister of Defence in early June and am looking forward to meeting my colleagues at EDA Ministerial meetings.

Accelerated motion:

EDA's evolution to a mature defence hub in just 15 years

Like a heavily weighted train pulling out of its station, the European Defence Agency's initial efforts after its creation in 2004 were small forward motions, slowly gathering momentum and expertise.

From small feasibility studies and backdoor policy consultations with its Member States, the Agency has now grown into a central hub for defence planning, aligning R&D goals among its defence ministries, liaising with EU authorities on their behalf and, above all, shaping European capability development. Not to forget the crucial role it plays in ensuring coherence among the several EU defence initiatives (revised CDP, CARD, PESCO, EDF) launched since 2016.

As the following pages show, it's been an exciting ride – and one whose momentum can only increase over the next 15 years.

Over the past 15 years, EDA established itself as...

The main architect of EU defence capability priorities

Nurturing cooperative capability development lies at the heart of all activities at EDA, which has evolved over its 15 years into the main coordinating body at EU level for that goal.

Success in achieving cooperative defence capabilities, however, demands prioritisation among the Member States – of their goals, their resources and their collective effort.

Fortunately, the EU now has a full set of tools that, largely managed by EDA, cover the gamut of prioritising activities. These include the agency's Overarching Strategic Research Agenda (OSRA) and its set of Key Strategic Activities.

Above all stands the Capability Development Plan (CDP), which was strategically revised in 2018 and accepted by EU leaders. The EU capability development priorities agreed therein serve as a key reference for Member States' and EU's capability development and future cooperation under all EU defence initiatives. The forthcoming Coordinated Annual Review on Defence (CARD), which is conducted every two years, will provide an overview on the European defence landscape and its coherence, including defence capabilities.

Capability Development Plan

Steered by the Agency, the revised CDP delivered 11 new EU capability development priorities. They span all military domains and comprise the following: cyber-response operations; space-based information and communication; information superiority; ground combat capabilities; enhanced logistics and medical support; naval →

maneuverability; underwater control; air superiority; air mobility; integration of air capabilities; and finally, cross-domain capabilities.

Notably, the above list does not describe specific kinds of equipment, systems, models or weapons. For example, to achieve naval maneuverability the CDP calls for maritime situational awareness, surface superiority and power projection – without mandating the details.

Indeed, unlike other capability planning processes, the CDP derives its capability development priorities by first prioritising the tasks that Europe's militaries would need to carry out now and in the future, before identifying the kinds of equipment and weaponry needed to do that.

This inversion of the usual process explains the unique approach that the Member States, the Agency and other EU players use to define and update the plan's priorities. "It's verbs – versus nouns – that are unlinked to specific systems, units or platforms," says Kris Herrebout, EDA's project officer for the CDP.

NATO's defence planning process, for example, revolves around specific capabilities – a type of ship or aircraft or tank. It is a taxonomy of things, used for quantitative analysis of shortfalls and apportionment. By contrast, the CDP "works with a taxonomy of tasks," he said.

Facilitating Member States' cooperative capability development was the raison d'être behind the Agency's birth in 2004. Prior to that, the EU's attempts to generate the military muscle it needs did not yield much. Its so-called Helsinki Headline Goal of 1999 to produce a European rapid reaction force of 60,000 by 2003 fell far short of the mark. The European Capability Action Plan, a bottom-up attempt to generate the capabilities, fell short of expectations. It and other factors were behind the Member States' decision to create EDA as a permanent forum where Europe's defence ministry personnel could exchange ideas and expertise to better coordinate how capabilities are generated.

Today's CDP descends from the first one delivered in mid-2008, and two subsequent revisions in 2011 and 2014. Those revisions reflected the changes in Europe's security environment. Whereas the 2008 CDP was focused mainly on expeditionary priorities, the subsequent ones have seen a gradual shift to more high-tech, high-end war-fighting capabilities.

"National requirements demand this: more command-and-control capabilities, war-fighting vessels, armed drones, etc. Nonetheless, while the plan's priorities have changed over the years, the way its goals are set has not been altered. How we assemble the CDP's information has changed over time, but the structure is still there because it has proven its worth time and time again," said Herrebout.

Different inputs from different sources

The analysis, identification and approval of the CDP's priorities rest on a four-strand foundation. As such, the CDP combines data and inputs from different sources, perspectives and timelines in a comprehensive tool.

The first one, Strand A, is focused on the EU's current military capability shortfalls. These are derived from scenarios based on the EU's Common Security and Defence Policy (CSDP), such as stabilisation operations. The difference between what the Member States could contribute toward such scenarios – the so-called force catalogue – and what is theoretically needed to carry out the operations' tasks equals the shortfalls.

The shortfalls are prioritised according to operational risk by the EU Military Committee, which is also responsible for the CDP's Strand D. Here, the Committee provides lessons from operations that have a capability development implication. This could be a national lesson learnt, one from CSDP operations or from coalition operations. "You could see this as a reality check on Strand A's CSDP scenarios," said Herrebout.

After that, the CDP process starts to gain more complexity. Its Strand C has to take into account the medium-term capability planning – out to 10 years – across the EDA countries to posit where the opportunities for cross-border cooperation may lie.

This is where an important EDA tool enters the picture: its collaborative database. Known as CODABA, the database is fed by data from the Member States themselves, by studies and from open source data gathered by the agency about national defence plans and programmes.

Launched in 2007, the CODABA got off to a slow start. The Member States didn't see its value-added at the time and did not contribute much, leaving the Agency to feed data into it on a catch-as-catch-can basis. But slowly its utility as a tool for identifying the commonality of goals and capability efforts between the Member States began to emerge.

A sea change took place in 2014 when the Agency made a concerted effort to demonstrate CODABA's utility to its constituent defence ministries. It put more money into gathering the data, turned to outside contractors for support, carried out additional studies and seconded more people within the agency to make this happen. From a collection of 427 records in 2014, the database mushroomed to 8,500 in 2018 – an increase of 2000 percent.

"The more information you have, the better your picture and thus the more you can extract examples of where the Member States should be working together toward cooperative capability development," Herrebout said. "The CODABA shows which countries are working on similar things, which regional groupings for capability development make the most sense, where national plans between members converge and so on. National capitals are now using it in those ways."

Finally, there is the CDP's fourth segment, which offers the long-term view. Strand B tries to project capability trends into the future – until 2035 – but with a twist. "This means looking not only at what possibilities the future offers to us but also to our adversaries and what they could do with those capabilities," said Herrebout.

Once all the strands' in-put is received, the process to derive priorities form the CDP starts. This is done in permanent dialogue with the Member States and other EU stakeholders in a transparent manner. With the help of EDA, the Member States prioritise the tasks, with the resulting priorities agreed at political level. These priorities reflect both the EU's and Member States' perspective. It is then up to the Member States to achieve the capabilities.

Capability-driven, output-oriented

How to keep the whole CDP process capability-driven and output-oriented are two obvious challenges. Regarding the former, for example, "one might have the impression that the CDP is for industry. However, industry does not prefigure in any of the strands except a bit in Strand B and its long-term forecasting work," observed Herrebout. "But even there, it is only as additional information in the form of studies, and not in the capability requirements themselves."

More important is the CDP's implementation. "We don't want this thing to remain a theoretical exercise. We want to inform Member States' national defence planning processes and support them to develop the capabilities Europe needs, and to do in a manner which leads to more coherence of the European capability landscape at large," he stated.

That points directly to the EDA's forthcoming "Strategic Context Cases" (SCC) which were developed together with Member States. There will be one SCC for each of the capability plan's 11 priority areas. The Agency has recently put the finishing touches on all the SCCs and will submit them for approval to its steering board of national Capability Directors in June 2019, and then implementation starting in late 2019.

The purpose of the SCCs is to generate, facilitate and guide the implementation of collaborative solutions in a European context. Each SCC describes the possible avenues of approach for the implementation to achieve the capabilities needed for each priority. Just as important, the strategic context cases will be living documents that are updated every one or two years.

Over the past 15 years, EDA established itself as...

Manager of European Defence Research

At the beginning of this century the idea of "European" defence research carried out under the EU's auspices would have been scoffed at in most policy circles as either a joke or inconceivable, or both. How times have changed.

From its first tenuous contacts in 2004 with industry, national armaments officials and defence research institutes to involve them in its R&D feasibility studies, EDA has established itself as an efficient manager and implementer of unprecedented collaborative defence research programmes funded by the European Commission.

"We have demonstrated that centrally-funded EU defence research is possible," says Denis Roger, who served as EDA Director for European Synergies and Innovation from May 2014 to April 2019. Roger helped position the Agency for its future overseer role in EU defence research. "That is a major achievement."

One of the primary reasons behind the Agency's creation 15 years ago was to encourage more cross-border defence R&D and capabilities among its Member States. The goals were, as they remain today, to foster innovation, promote interoperability and common requirements among national militaries across Europe and encourage the collaborative planning, development and acquisition of assets and capabilities to generate efficiencies for all.

Ups and downs

As with any entity blazing new ground, the Agency had its ups and downs over the years in pursuit of those goals.

Some of its ambitions for getting national research to converge in specific areas for standardised kit were premature and never took off. By contrast, others are now leading to common standards or approaches to kit such as soldier systems and field hospitals, certification methods for military aircraft or manufacturing processes for weaponry such as additive manufacturing *(see box – page 22)*.

One constraint has been EDA's own research budget, which has always been tiny. But that has also forced the Agency to carefully choose only those topics for study or development whose chances are highest for follow-on action by the Member States or the EU. These have ranged from small-scale efforts such as modular parts for in-theatre bio-detection systems to technical studies for Europe's next-generation large-body military drone.

A good example is the Agency's self-financed pair of studies, known as STASS I and II, to investigate common functions and kit that go into soldier systems: power sources, software and electronics, voice and data communications, sensors and so on. The studies' results sparked enough interest among their participating nations for the European Commission to include it among the 2017 call for proposals of its Preparatory Action on Defence Research (the "GOSSRA" project) for expanded development.

Indeed, the value of defence research at European level is finally coming into its own with the EU's planned creation, starting in 2021, of a fully-fledged European Defence Fund (EDF). It will be split into two so-called windows. One will focus on defence capability development, with the Commission co-funding projects at various rates with national capitals. The other window will support defence R&D projects at 100% from the EU's next 2021-2027

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"Horizon Europe" general research budget, with about €500 million set aside each year for that purpose.

Taking into account the lessons learnt from the Preparatory Action on Defence Research (PADR), it would be useful if EDA gains a central role in managing the EDF's research projects as they get off the ground in 2021. Interest across Europe's defence community in understanding how this will work is very strong, as evidenced by the 500-strong crowd that gathered in Bucharest in late March for a defence R&T conference co-organised by the Agency and the EU's Romanian Presidency.

From Pilot Project to EU Defence Research Programme

Though the EDF and its objectives are now taken for granted, the notion of using EU money to directly finance defence research and capabilities was by no means a given, even just a few years ago.

To get there, it was deemed necessary to first test the concept in the form of a small EU-funded pilot project.

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EDA manages the Preparatory Action on Defence Research (PADR) based on a delegation agreement signed with the Commission in May 2017

"When I first arrived at the Agency in 2014 the pilot project was still a very fuzzy idea, and a controversial one," said Denis Roger. "Very few people thought it would be feasible and even the Commission was not fully convinced it would fly. We heard all kinds of arguments against it: legally, EU-funded defence research was not allowed; national capitals would never accept it because that was their prerogative; the Commission had no expertise in the sector, and so on."

But at the initiative of the European Parliament, and working closely with the Agency, the Commission soldiered on. It granted a tiny budget in 2015 of €1.4 million for three pilot projects, each to be implemented by EDA and completed by the end of 2018.

To say that was a challenge for the Agency is putting it mildly.

"The fact that EDA was the implementing body for the pilot projects was a feather in its cap, but being a small Agency, it had to do fast turn-around work," observed Dirk Tielbuerger, EDA's Head of Unit in charge of PADR. "Each day in the run-up to the projects' launch we bumped into new obstacles. Could we copy-paste the EU's Horizon 2020 rules to the defence sector? What was the right level of detail for the technical requirements? Whose IPR [intellectual property rights] rules would apply? How to manage each project's market uptake?"

Fortunately, one of the Agency's big advantages is its large and well-established network of defence ministry contacts at all levels – technical, R&D, acquisition, testing – and its contacts with industry. "That was a major asset in enabling us to bring the projects to completion on time," he said. →

The pilot project's success led to the Commission's next defence research decision: to expand the initiative into the formal three-year PADR. Launched in May 2017 with a budget of €90 million, the action is financing a clutch of innovative research efforts, from reconfigurable system-on-a-chip technology and high-power laser effectors to interoperability standards for unmanned military systems and methods for achieving electromagnetic spectrum dominance. PADR will also support research into future disruptive defence technologies.

Again, speed of reaction on the Agency's part was crucial. "The delegation of PADR by the Commission to EDA was in May 2017. We published its first call the next month and signed the first grant agreement in December 2017. That is lightning fast by most defence standards," said Tielbuerger.

OCEAN 2020, one of the EU funded preparatory action projects, will demonstrate technologies for enhanced situational awareness in a naval environment using unmanned systems

Ultimately, however, it was the close, near-daily coordination between the Commission and the Agency that enabled the programme to move ahead so quickly.

"I think the most important lesson learnt during the Preparatory Action was the need for really strong cooperation between the EDA and the Commission," said EDA Chief Executive Jorge Domecq. "The Commission has the right-of-initiative, can mobilise a lot of money and makes things move with an effective decision-making process. On EDA's side, it knows all the defence details: project management, harmonisation of views across its Ministries of Defence, how to prioritise the technical goals and its cross-sectoral network of experts. The respective strengths and weakness of the two organisations were complementary, and that is the model for the future," he observed.

EDA research projects: from pin-point to system-of-systems capabilities

Since its inception, the Agency has managed some 200 research projects worth more than €1 billion. These range from the narrowest to the widest of objectives. For example, the singular technology of additive manufacturing, more commonly known as 3D printing, offers huge potential for cost savings and logistical efficiency to Europe's militaries by enabling instant, on-the-spot production of spare parts, tools and even weaponry.

EDA has studied it for several years and now six of its members – Finland, France, Germany, Netherlands, Poland and Sweden – as well as Norway are pursuing the idea with their "Additive Manufacturing Techniques for Energetic Materials" (AMTEM) project, which kicked off in February 2019 with 15 partners and a budget of €3.6 million. A four-year endeavour, the AMTEM team will investigate how 3D printing techniques could yield new types of warheads and propellants faster and cheaper for both short-series production and rapid prototyping. Aside from its benefits for the military, such technology would also strengthen Europe's industrial competitiveness in the additive manufacturing field.

Another example of successful R&T initiated at EDA is its integrated research programme in unmanned maritime systems (UMS), approved by defence ministers in 2009. So far 15 individual research and technology projects worth more than €50 million have been launched under its aegis, including standards and interfaces for more interoperable European unmanned maritime systems, network-enabled cooperation systems of autonomous vehicles, buried mines and hybrid fuel cells. Ten EDA members (Belgium, Finland, France, Germany, Italy, Netherlands, Poland, Portugal, Spain, Sweden) and Norway are currently involved.

At the other end of the research scale is the PADR project known as OCEAN 2020. Launched in March 2018 with a budget of EUR 35 million, the two-year project is overseeing the integration of above-water, surface and underwater unmanned vehicles with manned platforms to boost the maritime situational awareness of Europe's navies. Over 40 industry, navy and research players from 15 EU countries are involved in the project, which will organise two live demonstrations of the capability, the first in the Mediterranean in the latter half of 2019, followed by the second in the Baltic Sea in 2020.

Over the past 15 years, EDA established itself as...

The European hub for multinational capability development

One of the first things a visitor sees when arriving at EDA's ground-floor reception area is a small screen showing news and events pertaining to the Agency's activities. Pick any workday of the year and chances are that most of the items on display will involve meetings of defence officials from EDA's 27 Member States. And many of those meetings will comprise technical experts working on one aspect or another of multi-nation capability development, be it research, design, prototyping, programme definition or budgeting.

This beehive of expert activity lies at the heart of one of the Agency's primary roles: to function as a hub for identifying, defining, and coordinating collaborative capability programmes in Europe. The reference point around which this activity is organised is the EU's Capability Development Plan (CDP) and its 11 priorities.

Those priorities range across all domains from sea to space, including cross-cutting capabilites, with their management overseen by EDA. At its most basic, the CDP is the EU's overall tool for developing strategic autonomy and a major 'driver' for R&T investment, armaments cooperation and Europe's defence industries.

Various iterations of the CDP have been around for years, the first being launched in 2008. However, it is really only in the last few years that its objectives have come into the sharpest focus as a result of wider policies, namely the EU's 2016 Global Strategy, the European Commission's June 2017 unveiling of the European Defence Fund and the Member States' decision to launch Permanent Structured Cooperation (PESCO) in December 2017.

EDA worked closely with national capitals to tailor the CDP in June 2018 with its current set of objectives to support those policy developments. It is also changing how the CDP priorities are tackled.

The stress now is on output orientation, based on strong political guidance. "We are now changing the basic way we work to generate capability projects," explains Jean-Youri Marty, EDA's Deputy Director of Capability Armament Technology.

Moving away from only bottom-up

During its early years, for example, the Agency used mainly a bottom-up approach to generate cooperative projects. The guiding priorities were set at ministerial level but they were more EDA-centric, and it fell largely to the Agency to identify topics where it thought something could be done among capitals for collaborative capability development. →

Once a topic was identified, EDA aimed to harmonise the requirements, clarify which Member States could logically participate, and then define a business case for an ad hoc project involving the interested countries. This meant defining the main work packages, coming up with a budget, understanding the type of industries to be involved and so on – details that down-in-the-weeds national experts had to mostly cobble together themselves.

Where this worked, the results have been impressive. Via the Agency, national naval experts began creating a network in 2006 ("MARSUR") to seamlessly exchange maritime awareness data between their navies, an endeavour that is now moving to industrial scale.

Another example is EDA's ongoing GOVSATCOM project. Having reached initial operating capability in January 2019 after five years of preparation, it demonstrates the benefits of pooling national satellite communications capabilities by sharing them on an efficient pay-per-use basis amongst EDA countries.

Optimising MBTs on a European scale

One of the most difficult capability goals facing the EU Member States has been to decide how to upgrade, redesign or rationalise their fleets of main battle tanks (MBTs). A legacy of the Cold War, there are some 5000 MBTs scattered across Europe, where some 16 different models jostle alongside one another.

Some EU countries have too many while others none at all. How to deal with this situation in an efficient way has been a longstanding challenge.

A solution is in sight, however. In spring 2017 EDA launched its programme, "Optimisation of the MBT Capability in Europe." Focused on the legacy Leopard 2 chassis (both MBTs and derivatives), this pilot project is testing how surplus Leopard platforms with basic equipment in one country can be transferred to others.

Key to the idea is to pool not only the recipients' demand for the Leopard but also their requirements for upgrading to one of its latest configurations. By doing the latter, the programme will create pan-European upgrade work across the recipient countries to yield a single type of platform, the same type of derivatives and common training and logistic support.

Following an earlier request for information on behalf of its interested Member States, more consultations with industry will take place during 2019. Afterwards, each interested EDA country will then decide on the level of its engagement in the programme, thus overcoming the sector's longstanding inertia.

A sterling example of 'hub success' has been the Agency's work on the multirole tanker transport aircraft project (MMF). First explored in 2012, a five-strong group of nations (EDA members Belgium, Germany, Luxembourg and Netherlands, plus EDA partner country Norway) signed a contract in July 2016 to purchase 8 Airbus A330 aircraft. Based on each nation buying operational hours at a fixed cost, other EDA countries are now considering it as well – a collective capability that will go far toward filling a long-standing gap in Europe.

But the bottom-up approach has had its setbacks too. The telling example here was the Agency's idea, launched in 2007, for multi-nation development of future tactical unmanned air systems for maritime and land applications. Its research group produced a solid set of good recommendations in 2011, but it died on the vine.

"Everyone liked the results a lot, but it never led anywhere because there was no pre-existing requirement for cooperation in the plans and budgets of the Member States involved. It was not embedded there," observed Marty. "At the experts' level there was no way they could start with a blank page and shape the future of capability development in Europe. Each came to the table with their own national plan, hoping to find something in common, even though they could not deviate much from that plan. In the end, it was an attempt to bend those plans a bit by cross-checking and looking for overlaps but there was only so much bending they could do."

Eventually, with all those experts mingling together within EDA, it emerged that the only logical way forward was to identify new things that all could support.

And that required a novel political approach as well.

Main lessons learnt

"It was the central lesson learnt," observed Marty. "To get effective capability development going among the Member States you need the bottom-up expertise of course, but it must absolutely be combined

with a strong political drive. The top-down political support has to be there."

One of EDA's main tools to emerge from that insight is its forthcoming set of strategic context cases [SCCs]. Broadly, these are future-geared scenarios whose strategic implications are intended to get all EDA's constituent Ministries of Defence to pinpoint where their capability gaps overlap, and how they could work together in various groups to fill those gaps. It's the ultimate top-down approach.

"This is what we are trying to do with the strategic context cases: use them as a magnet to draw the Ministries of Defence together," said Marty. "Take counter-IED [improvised explosive devices], for example. The SCCs will require the Member States to define exactly what they want: purchase an existing C-IED system, develop a new one, or restrict it just to joint training? These kinds of questions have to be addressed at national MoD level, and then filtered down to produce a multi-nation programme with a budget and officials who have the mandate to work together."

There will also be another change to the way capabilities are approved for development: projects or programmes flowing from the SCCs will be prepared with national experts from the capability branch and the armaments branch of each defence ministry.

"That has been another key lesson," said Marty. "When you harmonise an initial requirement, you normally work with the end-users versus the armaments directors. This might be an issue because when a project lands unbeknownst on an armament director's desk without his views reflected on restrictions on work-share arrangements, intellectual property rights and other areas, it is unlikely it will be supported. Also, security of supply often enters the picture, with the insistence that work be granted to native industry to maintain national competences. By involving armaments directors earlier in the game, we can at least escalate problems quickly and try to find a solution."


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Guiding goals to conclusion

In the end the new top-down approach should augment the Agency's efficacy as a consultative hub, with clearer objectives from the outset for experts to discuss. Thus, if specific air combat objectives are the goal, then the experts will focus on those only. Conversely, if an expert's national plan excludes discussion of one thing or another, then the expert will have the time to explore back home how national plans could be changed to accommodate the capability goals.

The timelines of capability development will also change, according to Marty. "The more specific the objective, the more demanding you can be regarding the timing of its output," he said.

"So, we might say to the group of national experts: provide a description and a plan six months from now of what is feasible regarding X that we can present to the EDA's steering board [of national defence ministers]. If such a request came back empty, then we'd know that either the guidance was incorrect or there is an issue preventing people around the table from doing the work, and thus we can take corrective action," he said. "This whole SCC approach will be about generating projects: eliminating all those areas where nothing is possible, and focusing on those that are."

Cooperative financing for cooperative projects

The launch of multi-nation capability projects often stumbles on the mismatched budgetary cycles of the participating nations, where some members are ready to go but others not. Working with its defence ministries and the European Investment Bank (EIB) the Agency has come up with a solution.

EDA's new Cooperative Financial Mechanism (CFM) will help smooth out disjointed national defence research, development and acquisition cycles by offering two sources of "gap filler" financing. These will enable group of nations to launch their projects on time.

The first source is the EIB, which will financially support dual use projects. Acting as the bank's "Facility Agent", EDA will technically assess projects on its behalf, while serving as the administrative liaison point between the bank and the Agency's Member States.

The second source will be "state-to-state" financing where, on an intergovernmental basis, EDA countries will mutually support one another via reimbursable advances and deferred payments to facilitate the smooth launch of their capability projects. Not only will this help reduce paperwork and delays, but it will see a more efficient collective use of Europe's national defence budgets.

Over the past 15 years, EDA established itself as...

The military voice and interface for EU policies

Pursuing multi-nation research, capability development or interoperability goals is complicated enough for Europe's militaries, but when these efforts intersect with European policy and authorities, the challenge grows far more complex. Nowhere is this truer than with the EU's vast array of directives and financial instruments, some of which have direct implications – but also opportunities – for the military.

"Weaving one's way through the EU's labyrinth of policies, agendas and players takes time, skill and a close knowledge of how things work in Brussels. These are factors that can easily elude a military or defence ministry accustomed to dealing with its own single national government and procedures," said Emilio Fajardo, EDA's Director for Industry, Synergies & Enablers.

Organising the voice of Europe's militaries in Brussels has become crucial, particularly with the gathering pace of defence-related initiatives flowing from the EU's doors. It's why EDA utility as their interlocutor has grown in importance in recent years.

This is no casual or haphazard evolution. Having liaised with the EU for 15 years, the Agency is uniquely positioned to pinpoint when union policy affects national militaries, where the opportunities are for its ministries and how to best organise their voice to identify and defend their interests. Indeed, EDA's role as the collective policy voice for Europe's militaries was confirmed by the 2015 Council decision on EDA, which called on the Agency to "pursue coherence with other Union policies in so far as they have implications for defence capabilities".

Strategically, this was reiterated by the EDA's steering board of defence ministers in May 2017 when issuing their Long-Term Review and recommendations for the Agency's future. The review strengthened the EDA's position in three areas regarding capability development, including its role as the "facilitator towards the European Commission and EU Agencies" and as the ministries' interface for "exploiting wider EU policies" to the benefit of defence.

That reaffirmation has positioned the Agency for new responsibilities vis-à-vis EU initiatives, while opening up opportunities to help its Member States exploit EU policy and funding to their advantage. For example, EDA has worked for years with the European Commission to identify how the EU's massive Structural Funds for regional economic development could be better deployed toward dual-use technologies – i.e. civil capabilities with military spin-off benefits. It also began piloting projects in 2016 to test the technical and political feasibility of using EU funding directly for defence capability development and research. Those projects helped lay the groundwork for the EU's forthcoming foray into defence capability development, which begins in 2021 with the launch of its European Defence Fund.

Interaction in all guises

While these are some of the more outwardly visible signs of the Agency's interface role, what it does behind the scenes – and down in the weeds – is just as important. Organising the Member States' military voice on highly technical issues, particularly where they intersect with civil authorities, is vital since those issues can directly impact security and defence missions.

This angles out in many directions such as the Agency's on-going assessment of how the EU's wide-ranging REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) directive affects the military. It also coordinates on behalf of its militaries with EU and international agencies on space-related policies, and does the same in the maritime domain. Here it closely liaises with EU authorities to strengthen Europe's maritime surveillance while

overseeing multi-nation R&D projects to help deliver the advanced capabilities that Europe's navies need.

Energy is another sector where EDA functions as a direct link between its militaries and EU policy, most notably by administering on behalf of the Commission its Consultative Forum for Sustainable Energy in the Defence and Security Sector. Given that Europe's armed forces spend billions of euros each year on energy, the savings potential is vast.

"The Consultation Forum has not only developed interesting ideas that should lead to concrete action for improving energy management and efficiency in the military and for enhancing the resilience of defence-related critical energy infrastructure, but it is also an excellent example of smooth and efficient collaboration between EDA and the European Commission," says Jorge Domecq, the EDA's Chief Executive.

It is the air domain, however, where the Agency's interface role has been particularly intense. For example, it has been working with its national militaries since 2008 on a long-term endeavour known as the Military Airworthiness Authorities (MAWA) Forum. Its goal is to herd national military aviation and their various fleets of platforms – whether rotary, fixed-wing or unmanned – toward a common airworthiness approach.

This is harder than it sounds because the Military Aviation Authorities models and organisations are different and the military aviation regulations fragmented. Consequently, EDA is helping put in place equivalency and mutual recognition procedures among them. That also means working with civil authorities such as the European Aviation Safety Agency (EASA) and others to identify where existing civil standards could be applied, partially or otherwise, to military aircraft.

This is in line with what has been done to develop the European Military Airworthiness Requirements (EMAR). "We first take the relevant civil regulation and if this is fit for purpose, we simply copy-paste to our domain. If not, then we have to find a bridging solution which is harmonised to the maximum extent possible," explained Fajardo.

Though very technical and often slow-moving, the MAWA forum's work has huge but positive cost, operational, regulatory and even industrial implications for Europe in the long run. EDA estimates that a considerable amount of costs will be avoided in the future by aligning national airworthiness procedures with one another and, where possible, with those of EASA.

In a similar vein, EDA has worked closely with its militaries to attain pre-diplomatic clearance for their aircraft when flying across borders within Europe. That, too, means liaising with a wide range of actors, both civil and military. Mutually recognised diplomatic clearance procedures are also leading to savings in time, money and effort for military operations.

EDA as air domain liaison

Not only does the air domain cut across all its members' military forces, but it necessarily demands close interaction and coordination with civil authorities. Airspace is a confined asset and must be shared in a balanced way between its military and civil stakeholders, the latter of whom are leading today's technological and policy efforts to exploit it more efficiently.

The example par excellence of the Agency's interface role here is its close coordination with stakeholders involved in Single European Sky (SES), the Commission's initiative to reform Europe's air traffic management (ATM) system. There are many stakeholders, to say the least: Commission, EASA, Eurocontrol, SESAR Joint Undertaking and SESAR Deployment Manager, EUROCAE, national ATM authorities, NATO and many industrial players

Launched in 2004, SES's evolving bundle of regulatory, operational and technological changes will impinge on Europe's militaries, which will have to adapt their own air traffic procedures, equipment and platforms to function smoothly within the modernisation of Europe's air traffic management system and a more dynamic airspace management. Even if SES will bring some opportunities for military aviation, the militaries' collective cost for complying with the upcoming SES →

Down under and above: U-Space and high-altitude challenges

The EU has a plan to create a low-altitude airspace – below 500 feet – where small drones of all types can fly, known as 'U-space'. All platforms in it will have to be registered and adhere to certain rules. However, the presence of so many moving objects at low altitude poses risks to the larger manned and unmanned platforms that Europe's militaries and civil first responders fly through it. "We obviously have security and safety issues with this, and are working with the Commission, Eurocontrol and national authorities to tackle that," said Vivier.

Similarly, the upper end of airspace poses the same challenges. Europe's aviation sector is moving quickly toward what is known as a cooperative environment where platforms automatically exchange data with each other. By 2020, for example, all aircraft must be equipped with "automatic dependent surveillance broadcast" – a cooperative surveillance system based on international aviation standards.

"The challenge for our militaries is to identify non-cooperative objects, and that requires navigation, surveillance and communications systems adapted to our needs," he said. "In some cases, we are looking for exemptions and derogations for Military assets," he said. "That would give us the time to come up with a dual-use solution for interoperability between military and civil platforms."

related technical solutions lies between 4 and 11 billion euros.

EDA's remit here is to facilitate the coordination of the military to defend their operational needs within SES and, "to ensure that military aviation will continue to provide and further improve, effective security and defence in Europe in the changing context of the civil aviation sector", said Christophe Vivier, who leads EDA's unit dealing with SES. "So far, we have achieved good results: the military is well integrated into the SES landscape and considered a key partner, since security and defence are a shared responsibility".

Finding funds for its members

One way the Agency has mitigated the cost of SES for Europe's militaries has been to winkle out funds from the EU for them. "We've received EU funding of around €93 million to help upgrade national military ground infrastructures contributing to the modernisation of the ATM system in the framework of SESAR deployment," said Vivier.

Though that amount is less than 5% of what the EU has given to the commercial and ATM sectors, it is a promising development in that the military has never before received money from the Commission for this kind of upgrade work. "Not all our Ministries of Defence are aware of the possibilities for getting funds from the EU or how to propose projects, which is why we are working with them to secure the funding by supporting them in identifying collaborative projects," he observed.

The €93 million covers only the ground segment of military ATM regarding Europe's civil ATM network, but it is a crucial segment of work. The future ATM system will be based on information exchanges between all stakeholders – including the military – through 'SWIM', SES's System-Wide Information Management solution, with everything in the air and on the ground related to aviation connected to it.

This is raising a number of cyber-security issues. "We have to make sure SWIM is very robust and resilient enough to protect confidentiality, meaning we might need to develop a specific interface because of the security levels required by the military versus civil security users," observed Vivier.

There are other areas as well where military operations and capability goals intersect with SES. The integration alongside civil air traffic of military remotely piloted aircraft systems, more commonly known as drones, is a case in point.

"We are looking at the whole range of air integration issues," he said, adding that three technical enablers – autonomy, drone C2 links and detect-and-avoid systems – are crucial for Europe's strategic autonomy. "A drone has to be integrated with Europe's civil ATM structure thanks to its airworthiness certificate and appropriate safety mitigation measures, particularly for those flying at medium altitude for long periods."

How and when militaries use airspace for drones en-route flights is another issue vis-à-vis civil aviation authorities. "Segregated airspace in such a case might negatively impact the performance of the ATM network. We think the solution would be for them to support our needs for non-segregated space so our platforms can fly with more flexibility while mitigating this problem," said Vivier.

"To do so as soon as possible, we are looking for ways to fly at different hours or different flight routes that could accommodate both sides on this issue. The overall goal is to start flying our platforms by 2025 outside segregated but controlled areas where all traffic is known by ATM authorities. Then, after 2030, the military could fly its drones in all airspace, with no restrictions, he concluded.

Over the past 15 years, EDA established itself as...

Europe's training pitch for enhanced interoperability

One of the hardest challenges to Europe's post-WWII militaries has been to make them work seamlessly when coming together for the first time in a conflict zone. By and large, they haven't been able to do that without huge and expensive effort which, unless wilfully sustained over time, is usually lost as personnel turn over, national military priorities diverge, or equipment is replaced at uneven rates from one country to the next. The allies know this well, having struggled continuously with interoperability issues since NATO's founding 70 years ago.

For the European Defence Agency (EDA), the main reason for organising training and exercises (T&E) among its Member States is to boost their interoperability for operations conducted under the EU's Common Security and Defence Policy. That is easier said than done, however. Interoperability issues cut across just about every activity in a multi-nation military operation – training and doctrine, communications, logistics, strategic and tactical planning, medical evacuation and transport, not to mention the inherent friction arising from incompatible military equipment and systems.

"We cover all the military domains except space, with the biggest emphasis historically having been in the air domain, though other areas of training are growing," says Tom Bennington at EDA's Operations, Training and Exercise Unit. Pooling demand among EDA Member States for common services is another way to achieve that by nailing down guaranteed access to niche capabilities at competitive prices. *(See box – page 31)*

Counter-IED

Two of the Agency's longest-running T&E efforts, for example, have been counter-IED (improvised explosive device) training for national explosive ordnance experts and helicopter training. Both came in response to pressing operational shortages but have since expanded to meet other needs as well.

Launched in 2007, the Agency's C-IED programme has trained some 800 students, including C-IED specialists and ordnance personnel, and has prompted a swathe of related national and multi-nation research projects. These focus on early warning, detection, exploitation and disposal capabilities, not only for conventional IED threats but also those emanating from chemical, biological and radiological vectors. Moreover, the skills developed for Europe's militaries in these areas offer dual-use benefits to Europe by combatting IED threats in urban settings. →

Helicopter: towards a multinational training centre

Building on a prior Franco-British initiative, EDA's training courses for helicopter aircrew got off the ground in 2009. Its initial goal was to fill its Member States' gap in tactical training and interoperability for operations in Afghanistan by promoting a common approach to helicopter activities in an environment that was new and challenging for many of them. Currently, EDA is running three activities in this area: a helicopter exercise programme, a helicopter tactics course (HTC) and a helicopter tactics instructors' course (HTIC).

Fifteen European countries participate in one or more of these courses, which include the annual multinational helicopter "Blade" exercise, a tactics symposium and a several other tactics-related activities such as electronic warfare. The HTIC, for example, ensures the permanent availability of a cadre of tactics instructors as mentors to ensure standardisation of all helicopter training. At the end of each year, lessons learnt and new tactical procedures are assessed, refined and codified within the course's reference of standard operating procedures. This reference has become the de facto handbook of advanced helicopter tactics for all pilots and crewmen, whether across the EU or NATO, said Bennington.

One of the Agency's undisputed success stories is the HTC, which has grown from its initial Afghanistan-specific training scenarios centred on hot, high and dusty conditions to include arctic, cold and special operations training for night-time and urban environments. The simulator-based HTC has trained almost 800 aircrew since its inception in 2011 and is still going strong, with the participation of seven EU countries.

"Believe it or not, until these training courses came along there was no common reference for tactical procedures for pilots and crew operating under these different scenarios," observed Bennington. "Due to its harmonisation and agreement process, Allied doctrine can be rather generic and bureaucratic in its development, whereas the helicopter SOPs are targeted at the working level. These reflect identified best practice and are updated regularly. Part of the reason why this course is so popular among helicopter crews is because it is not platform-based. Everyone can share in the lessons learnt and apply them to their own tactical manoeuvres."

Meanwhile, EDA's helicopter exercise programme carried out its 13th Blade exercise in May 2019. Around 30 platforms, including rotary and fixed wing, and 1200 people from 11 EDA Member States participated in last year's "HOT BLADE 2018" exercise, which focused on joint and combined interoperability.

The next step will be to set up a multinational helicopter training centre. With an initial planned budget of around €6 million, the centre should open its doors in late 2021 with offices, a simulator facility featuring two co-located augmented helicopter fuselages, and accommodations for its students. "This will be the final location for rotary wing tactical training, planning and coordination under Member State direction," said Emilio Fajardo, EDA's Industry Synergies & Enablers (ISE) Director.

Airlift training

Fixed-wing airlift has also been a T&E focus, where the first major development came in 2011 with the launch of the Agency's European Air Transport Fleet Programme (EATF) for tactical airlift training. Again, the overall goal: improve the interoperability and operational availability of crews and aircraft regarding airlift and air drops via agreed SOPs.

By 2016 this effort had evolved to see 11 of the participating nations create their European Tactical Airlift Centre near the Spanish city of Zaragoza, with full operating capability planned for September 2019. There is also a new idea in the works for five EDA member states that use the smaller Spartan C-27 fixed-wing aircraft to integrate their tactical training activities via a collaborative exercise programme that would be run on similar lines.

RPAS, cyber, energy management

EDA's air domain training will even branch out to remotely piloted aircraft systems (RPAS). It is currently developing a training technology demonstrator project to use a virtual private network to link the generic, platform-neutral RPAS simulator centres of 10 Member States together for collaborative training.

"This would not be mission rehearsal training but more a conversion to type and basic collaboration. It would offer a development tool that allows users to concoct their own scenarios for common use within the group," explained Bennington. "We're trying to prove that you can link all the technical sites to a common training network of hardware and software in order to run an ongoing exercise programme – all for less than €1 million euros."

With the demonstrator's final simulator distributed to Germany in February 2019, all the sites will work together as RPAS squads. "Eventually this could link into a PESCO project," said Fajardo, referring to the EU's legal framework for Permanent Structured Cooperation in defence. "Italy, for example, has proposed a European drone centre of excellence as a PESCO project and there are several other related PESCO workstreams that could benefit from the project too."

The Agency has a similar initiative in the cyber-defence sector where it sponsored the linking together of national training sites to create a federated network of cyber-ranges. Other efforts have focused on cyber situational awareness, forensics and training for political leaders during major cyber-attacks.

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One of EDA's more unconventional T&E ideas, but one with potentially big implications for military operational efficiency, is its "Defence Energy Managers' Course" (DEMC). Energy-and-resource management has long been the neglected step-child of militaries around the world, and it is only in recent years that environmental and climate-change concerns, along with increased operational sustainability requirements, have compelled them to start taking notice of new ways to conserve energy.

Having ended in April 2018, the year-long DEMC course's trial run instructed 20 participants from eight Member States on how to develop and apply effective energy management systems in accordance with the ISO 50001 standard. This was done at 10 military installations, ranging from naval stations and armoured vehicle camps to military academies.

The trial run's concrete results speak for themselves: annual energy savings of 2,916 MWh – equal to the fuel required to drive a Leopard II main battle tank around the Earth twice – plus more than 19,000 cubic metres of water saved. That opened eyes. The defence energy managers' course is now oversubscribed, with two more currently under delivery and another three planned until mid-2021.

In sum, EDA's approach to T&E – whether collective training or as a niche focus in areas that a single Member State cannot cost effectively do on its own – always links to the priorities of the EU's Capability Development Plan. Yet at the same time, the Agency is not a permanent training institute. It functions more as a training consultancy by identifying where Europe's military training gaps are and nurturing the structures and activities to fill them – but only up to a certain point.

"We do the initial assessment, build the activity to a certain level and then hand it over to a group of Member States as the effort reaches maturity," said EDA Chief Executive Jorge Domecq. "And that's the way it should be."

"Collective" bargaining: interoperability as pooled demand

Interoperability is not all about common training and exercises. It also derives from sharing the same equipment or services.

Here the Agency has had an increasing role in pooling demand between its Member States' militaries to get the best prices and access for the goods and services they need. Two good examples are satellite communications (SatCom) and in-theatre air medical evacuation (AirMedevac) services.

SatCom is expensive because the military needs guaranteed access to it during operations or crises and must pay for that stand-by privilege. Thus, it makes eminent sense to pool demand to get the best price from commercial providers. The Agency began doing this on behalf of its Member States and the EU's various CSDP missions in 2013. So far it has handled nearly 200 SatCom orders worth €27.3 million – a trend that continues to grow.

EDA used a similar approach for AirMedevac where it has pooled the demand of four Member States – Austria, Belgium, Germany and the Netherlands – to negotiate the most economical price for stand-by medical evacuation during operations. Worth €120 million, the first supply contracts were signed on behalf of the countries in January 2019 via a four-year framework arrangement, which is open to all EDA Member States and associated countries for participation.

Over the past 15 years, EDA established itself as...

Guardian of coherence among EU defence cooperation tools

It has become a commonplace to say that the EU and its Member States have launched more joint defence initiatives in the last two years than in the previous twenty. Yet this ground-breaking drive also point to one overarching challenge: how to ensure that all the different players involved are marching to the same beat as they develop capabilities in support of the EU's common security and defence policy (CSDP) framework?

EDA's coordination role in future European capability development will be central. Together with its Member States and EU institutions, it has helped assemble a set of interlocking tools and policies designed to forge coherence across the full spectrum of capability developments that lie ahead, from defence research to pre-procurement testing and prototyping to acquisition support. Without such coherence, Europe's defence sector will remain fractured into small national markets, with all their associated high costs and duplication of effort.

"The momentum created by these initiatives offers a unique opportunity to overcome this fragmentation," says EDA Chief Executive Jorge Domecq. "Achieving that will take time, of course, but we now have the tools at our disposal. The test will be how they are used and whether they deliver the expected results."

EDA is well positioned to oversee how those tools are used. For example, it is the main forum in Brussels for defence experts to exchange ideas and initiatives on defence research and technology, align procurement cycles, pool demand for equipment and services, define programme management goals and other activities critical to generating capabilities. It has long experience in managing defence research projects, for example, and it functions as the military's voice and interface vis-à-vis EU institutions and policies.

Getting EDA's Member States to move together toward better and more efficient capabilities sounds straightforward enough, and if it was any sector other than defence that might be true. After all, Europe has binding rules and standards for many of its sectors such as telecommunications or transport.

But defence occupies in its own unique category, with only one purchaser – the government – and the obligation to guarantee the security of all other segments of society. These point directly to matters of security of supply, industrial competences, national military prerogatives and other aspects that account for the traditional divergence and duplication of effort that has characterised Europe's defence sector as a whole for the past 70 years.

To create higher levels of interoperability between the Member States' defence capabilities is a major challenge, to put it mildly. But it can be done with enough time and the right kind of effort linked to what is achievable in concrete terms.

The EU's gameplan for generating these results rests on two pillars: identification of the interoperable capabilities needed, and a set of tools to support their development, leading ultimately to common planning among Member States.

The desired military capabilities arise from the Union's Level of Ambition and are defined by

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the EU's Capability Development Plan (CDP), which was revised by Member States in June 2018 in EDA. The agreed 2018 EU Capability Development Priorities (11), resulting from the revised CDP, address the entire capability spectrum, taking into account the CSDP capability shortfalls, long-term capability and technological trends, Member States' defence plans, and lessons learned from CSDP missions and operations, and provide a key reference for Member States' and EU's capability development.

It falls to the Member States to generate those capabilities, a task easier said than done. Indeed, the EU has framed capability goals for its Member States several times in the past, but to little effect. However, the pressure on Europe for strategic autonomy combined with the new security threats and challenges that now confront its corner of the world demand a far more effective approach to generating European capabilities.

Fortunately, valuable lessons have been absorbed in national and EU policymaking circles about what has, and has not, worked in previous attempts to generate interoperable defence capabilities. There is a new approach to coherence and keeping it on track.

The coherence toolbox

The EU and its Member States now have the necessary tools for vastly improved capability development at European level. These form a matrix of policies and incentives whose sequencing of steps, if carefully managed, will lead to the capabilities' realisation. The matrix starts with the CDP's priorities.

The next step will be to track national progress toward those priorities and to identify opportunities for multi-nation cooperation. Here EDA will have a vital role. In the second half of 2019 it will launch the first formal Coordinated Annual Review on Defence (CARD) where it will confer yearly with each Member State to assess their defence plans and spending, R&D goals, budgetary and programme cycles and other aspects of capability development regarding the CDP's goals. As the CARD secretariat, the Agency will extract a global picture of the Member States' collective activity and progress toward the CDP from one year to the next.

EDA carefully prepared the ground for CARD, having run a trial version of the process in 2018 and early 2019. Among other things, the trial run identified those areas where the Member States' interest in collaborative capability development converge the strongest. These are reflected in the new CDP and include short-range air defence, armoured vehicles, helicopters, medical support, cyber defence, satellite communications, tactical unmanned aerial systems, maritime security and maritime mine countermeasures.

Among the trial CARD's most telling conclusions is its recommendation that the EU needs to move from ad hoc multinational projects towards a systematic and structured alignment of Member States' defence planning. The forthcoming CARD process will support that by aiming for gradual synchronisation and mutual adaption of national defence planning cycles, thus leading to more systematic defence cooperation Europe.

Indeed, the CARD is expected to function as a pathfinder for identifying where defence ministries can collaboratively develop or procure defence assets. As Domecq observes, the CARD "will be an essential intermediate step in the overall EU capability development process."

As opportunities are identified by the CARD, the coherence matrix's second step hoves into view: PESCO, the EU's legal framework for Permanent Structured Cooperation in defence. Agreed by 25 Member States in December 2017, PESCO also uses the Agency as its secretariat (along with the →

European External Action Service, including the EU's Military Staff).

It means EDA will function as the platform where the PESCO participating Member States can identify, assess and consolidate the projects they want to pursue. At the same time, the Agency will have the leading role in annually evaluating the Member States' contributions and commitments to PESCO.

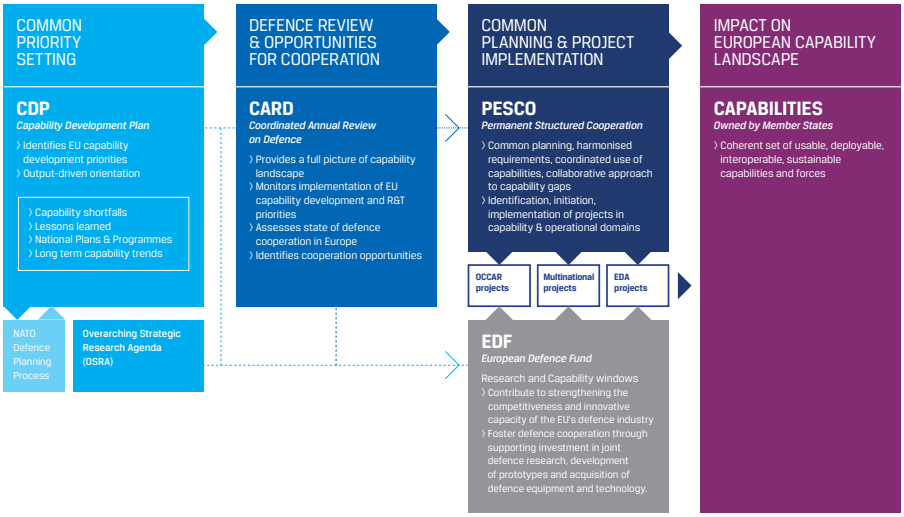
Having already helped assess PESCO's two first rounds of projects, the Agency will soon do the same for the next round, which will be approved in November 2019. EDA's input at the early stage of the projects' assessment helps ensure there is no unnecessary duplication vis-a-via other initiatives, for example. Yet it is important to stress that PESCO is not just about projects. Its more important long-term goal is to expand common planning, defence spending and collaboration among its participating Member States – areas that the Agency has pursued since its inception in 2004.

The third step in the coherence matrix is the Commission's European Defence Fund, which will offer financial incentives for collaborative capability development projects. The EDF will help strengthen the innovation and competitiveness of the EU's defence industry by supporting joint defence research, capability prototyping and acquisition. Whether these are pursued within PESCO or outside it, what counts is that the Member States pursue collaborative capability development as much as possible.

The Agency has long experience in liaising with its constituent defence ministries for collaborative efforts, whether for research purposes or for capability planning and implementation, and with industry. It would be a natural partner for the Commission in managing aspects of the EDF as the fund fully rolls out in 2021. Regardless of how this is administered, though, the EU Capability Development Priorities will remain as the baseline for implementing the CARD, PESCO and the EDF.

Above all, EDA will continue its central role as the inevitable hub for European military cooperation, defence technological innovation and engagement with industry. Its unparalleled technical expertise and unique position as the interface in Brussels between national defence ministries and EU institutions have served the Agency's stakeholders well for the past 15 years – and will do so for the next 15 as well.

A coherent approach from priorities to impact



EU-NATO coherence of output

With both EDA and NATO doing heavy-duty capability planning, how to avoid duplication of effort?

The CDP's coherence of output with the Alliance's defence planning process is of primordial concern to the 21 EU countries that also belong to NATO and are committed to the EU's CSDP, and they insist on that.

Both upstream and downstream, there is a dialogue and exchanges of information with NATO, which goes partially through those EU Member States who are NATO allies. For example, the CDP's Strand A tool and approach are very similar as those used by NATO. Indeed, EDA contracts the support of the NATO Communications and Information Agency to underpin the EUMC activities to run that strand of the CDP work.

There is also resonance between the two regarding the CDP's Strand B long-term analysis. NATO regularly carries out assessments in this regard. "Since there is no sense in our starting from a blank sheet of paper, we capitalise on NATO's document, 'Strategic Foresight Analysis', as a building block for our own analysis. It's a good example of upstream exchange with NATO," said Kris Herrebout, EDA's project officer for the CDP.

There are no direct exchanges between the two regarding the CDP's other strands, however, meaning only EU Member States have access to the Agency's CODABA database, for example. But there is a built-in corrective factor. "The double-hatted Member States will shake their head immediately if we propose something they are already doing at NATO, and vice versa, so that works quite well for avoiding unnecessary duplication of capabilities," he said.

In an exclusive interview with *European Defence Matters*, MBDA's new CEO **Eric Béranger** shares his views and analysis on how European defence cooperation and EDA's role in it have evolved over the past 15 years and what the industrial prospects and challenges are for the future. He also touches upon the implementation of the most recent EU defence initiatives, some current and upcoming European capability projects as well as Brexit.

"Increased defence cooperation among Europeans is becoming urgent"

What is your general view on how European defence cooperation has evolved over the past decade and a half, and particularly since the 2016 EU Global Strategy?

The launch of the Global Strategy in 2016 created a tremendous opportunity. We have since been witnessing the emergence of a brand-new environment that will deeply change the perception and interactions of the defence industry. Although these initiatives are still in their infancy and budgets are limited, we can already see a ripple effect with an extremely significant mobilisation among industries and governments; as if the entire European defence community had grasped the importance of those initiatives and is now looking at them with a lot of attention. It seems that everyone is now understanding and agreeing with this objective of the 2016 EU Global Strategy: "A sustainable, innovative and competitive European defence industry is essential for Europe's strategic autonomy and for a credible CSDP." As you know, MBDA is a truly European company and it is quite pleasant to see, today, a general adhesion to the principles that led to our creation in 2001.

And your overall assessment of the European Defence Agency's (EDA) role in that development?

EDA is playing a key role in the development of defence cooperation. Due to its unique nature, defence policy will remain the political responsibility of the Member States. The end purpose of the new European defence agenda and of the mobilisation of EU funding is to support the development of the military capabilities Member States' armed forces need to perform their operational duties. The intergovernmental dimension of this agenda remains therefore pivotal. In this context, EDA is the forum of choice for Member States to help prioritise the operational needs and technologies that need to be dealt with at European level. As the secretariat of the PESCO initiative, EDA is also evaluating the European added value of the PESCO capability projects and the implementation by the Member States of the PESCO binding commitments, in particular the ones related to the procurement strategies and their impact on the European defence technological and industrial base, which are of particular importance for industry. Last but not least, through its 12 Capability Technology Areas (CapTechs) and networks of industry and government experts, EDA is acting as a catalyst for more R&T collaboration between European stakeholders.

A competitive defence industry is a prerequisite for a strong European defence, let alone for achieving strategic autonomy. What is needed to bring our industry to that level?

European nations undoubtedly have world-class defence industries, but in the current geostrategic environment characterised by uncertainties and the rise of regional powers, increased defence and security cooperation between European nations is becoming urgent. I identify two key priorities. First, the development and strengthening of the European technological base in order to ensure security of supply for European →

"EDA is playing a key role in the development of defence cooperation."

The unique Beyond Line Of Sight capabilities of the MMP land combat missile (here in the turret of this vehicle) led to a PESCO capability project with cooperation between France, Belgium and Cyprus

armed forces, which will lead to increased freedom of action and autonomy for our nations when they need to protect their interests. Second, the ability for the industry to be proactive and anticipate the future needs of European actors with innovative solutions. Today, European countries are committing themselves to the principle of cooperation as well as to the concept of a genuine European industrial base in the defence sector, in particular through PESCO. Our role, as industry, is to make sure we can offer the best solution for every specified requirement, either by proposing new concepts or by mutualising the solutions with the aim to cut costs.

Artificial intelligence, robotics, autonomous systems, etc.: new disruptive technologies are revolutionising the defence sector. Can European suppliers – including MBDA – compete in these domains? If not, what does this mean for EU strategic autonomy?
We certainly can compete and already are. In order to secure its leading position, MBDA is investing a lot in specific R&T and R&D. As an example, we are already introducing decision aid functions in our missile systems to help the operator identify the target and optimise the engagement timing. Just a few weeks ago, we inaugurated our new data centre that will extend the speed domain of our simulations into hypersonics in order to validate and develop an even broader set of missile capabilities. MBDA is certainly among the few European defence industries that have access to the largest possible network of researchers and startups thanks to its multinational base.

However, when it comes to AI and deep learning, sharing of data for machine learning between the member nations should be encouraged as it would help Europe have access to databases of sizes similar to those of the USA, China or Russia in order to better train our algorithms. As those algorithms require huge computing power, another key sovereign technology Europe needs to master certainly is the new generation of low power consumption Massively Parallel Processors (MPP) if it wants to avoid critical dependencies in the future. These are two examples of the challenges that Europe has to face when it wants to sustain its strategic autonomy for the future.

How do you assess the EU's new defence initiatives (CARD, PESCO, EDF)? What difference can they make to improve industry's competitiveness?
The EU's new defence initiatives are in fact the three core elements of the same European defence dynamic. Each of these initiatives has its own added value. Their strength lies in their comprehensive articulation in order to generate new collaborative programmes, which is even more challenging in today's European political landscape. The defence industry has now a solid opportunity to benefit from a coherent process at EU level, starting with the identification of European capability development priorities (CDP/CARD), then the possibility to address these priorities between voluntary Member States within a permanent and binding framework (PESCO), and finally the contribution of the EU budget through the European Defence Fund to implement these capabilities.

The 'European Beyond Line Of Sight' (BLOS) capability approach in the land battlefield missile systems domain is the first concrete example in our sector. The ground combat capability is identified as one of the eleven capability priorities as part of the revised CDP. In this context, France, Belgium and Cyprus launched last year a PESCO capability project highlighting a new operational differentiating capability in this field, which provides the necessary high degree of accuracy and efficiency while avoiding widespread collateral damage and reducing the exposure of friendly forces. The testing of a mounted BLOS capability with a stand-alone target designation will in the end benefit from EU funding support through the EU Defence Industrial Development Programme (EDIDP). As the European champion in missile systems, we fully support and actively contribute to this European approach with the objective to sustain it in the long term and to replicate it in the near future in other missile systems domains.

What is your assessment of the EU's Preparatory Action on Defence Research and the prospects of a future European Defence Research Programme?

From an industrial perspective, the new funding opportunities at EU level have three main merits. Firstly, they are a real incentive to generate new European collaborative activities by complementing national funding on topics with a clear European added value and by accelerating the launch of new programmes. Secondly, these instruments give substance to the objective of strategic autonomy, which would otherwise remain theoretical. Thanks to the EU institutions, they also only support genuine European industries and technologies without non-EU restrictions or control. A European design authority is indeed the sole mean to guarantee an effective security of supply and a technological mastery, two critical conditions to achieve freedom of action on the battlefield. Thirdly, they offer concrete opportunities of cooperation between European stakeholders at industrial and technological levels. Keeping in mind the technological excellence and industrial performance requirements, they represent a real possibility to find new partners, enlarge our supply chain network and, in some cases, resolve existing dependencies towards non-European solutions. Due to its European DNA, MBDA can only be proactive, as a leader or as a contributor, to these European initiatives.

What are MBDA's defence innovation and development priorities for the coming years?

MBDA is a truly European company and I will therefore mention those programmes that are led in cooperation and demonstrate our added value. This is the case of the Anglo-French FC/ASW (Future Cruise/Anti-Ship Weapon) that is intended to replace the whole portfolio of deep strike and heavy anti-ship missiles currently operated by France and the UK (SCALP/Storm Shadow, Exocet and Harpoon) with a step change in operational capabilities. This programme is into the second year of its concept phase and we would like to see more European nations joining before the full-scale development is launched in 2024.

We are involved in the Future Combat Air System (FCAS), a French-German and now Spanish programme and in the British Team Tempest with the aim, in those very early steps, to define the best trade-off between platforms and effectors that will lead to an optimised system. MBDA is very proud to contribute with the MMP potentialities to the EU Beyond Line Of Sight PESCO project that will allow European nations to share operational concepts and doctrines on this brand new battlefield combat capability, based on technologies that are fully mastered and owned in Europe with no risk of control nor restriction from abroad.

We are also pursuing internal concept studies on what could be a follow-on to the Aster extended air defence interceptor that equips French, Italian and British forces and six other countries outside Europe. We consider that a protection against the emerging threats of manoeuvring ballistic and hypersonic cruise missiles is a capability that would bring significant strategic autonomy to Europe and that could be a good candidate for being led within the PESCO framework.

MBDA was created in 2001 after the merger of missile systems companies from France, Italy and the UK, later followed by manufacturers from Germany and Spain. Will it further expand in the future to become an even bigger European champion?

To consolidate its stature of European champion is a natural aim for a company such as MBDA... Does it necessarily take new mergers? I am not so sure. As we already discussed, the ongoing European defence agenda is already offering multiple new collaboration opportunities within the European defence community. Obviously, we are eager to be part of it. MBDA will always share support, ideas and expertise with other countries and be looking for other partners. Through PESCO, collaborative programmes or other frameworks is, for now, how we intend to grow and better serve the strategic autonomy of our nations and of the EU as a whole.

What impact do you expect Brexit to have on European defence? Politically, but also for Europe's defence industry and future collaborative projects?

In the field of defence, the UK cannot be treated after Brexit in the same manner as any other third country. The UK clearly shares European values and interests and is among the nations who have historically contributed the most to cooperation in Europe, through programmes such as Tornado, Typhoon, A400M and Meteor. More recently, the decision to join the European Intervention Initiative is a further example of the UK's commitment to European defence and I can see this has been recently recognised by the highest French and German political leaders who called for a European Security Council to which the UK should be associated.

It will therefore be essential after Brexit to maintain access for the UK, under conditions to be negotiated, to the instruments of the EU defence policy; whether it is the European Defence Agency, PESCO or the European Defence Fund. It is indeed in the interest of both the EU and the UK to continue sustaining together their industries that have for long worked together and created mutual dependencies. This is the condition to keep a critical mass and competitiveness for the European industry as a whole.

Eric Béranger was named CEO of MBDA on 1 June 2019, replacing Antoine Bouvier. Prior to joining MBDA, he was the CEO of OneWeb.

MBDA was created in 2001 after the merger of the main missile systems companies in France, Italy and the UK. In March 2006, it acquired LFK-Lenkflugkörpersysteme GmbH, the German missile subsidiary of EADS (now Airbus).

NATO & EU capability development

Enhancing cooperation, improving effectiveness, ensuring coherence

By **Heinrich Brauss**, former NATO Assistant Secretary General for Defence Policy & Planning, currently Senior Associate Fellow at the German Council on Foreign Relations (DGAP).

Europe and North America, NATO and the European Union face unprecedented challenges and threats from multiple directions. To the east, Russia's aggressive actions aim to destabilise and intimidate neighbours and Allies and undermine NATO and the EU. To the south, instability, continuing crises, regional conflicts and wars across North Africa and the Middle East have fuelled terrorism and caused mass migration affecting Europe's stability. In addition, China's global aspirations, economic potential and growing military power increasingly challenge the transatlantic community.

NATO's adaptation and the implementation of the EU Global Strategy

NATO has developed a dual response, namely to strengthen its deterrence and defence posture (essentially by enhancing its responsiveness and the readiness of Allied forces) and to project stability to its neighbourhood by means of assisting partners in their efforts to provide for their own security and defence. The NATO Defence Planning Process (NDPP), a new cycle of which has just started, will review the quantity and quality of all Allies' forces and capabilities needed to implement NATO's overall posture. In general, NATO needs heavier, more high-end capabilities and more forces and capabilities at higher readiness as well as enhanced cyber defence capabilities.

The EU, in turn, is working to implement the EU Global Strategy in the area of security and defence. From a NATO perspective, this essentially is about (1) enhancing the capabilities and structures needed for the types of civilian missions and military crisis response operations the EU wants to be capable of undertaking as well as protecting the Union and its citizens; (2) improving coordination of Member States' capability development and promoting multinational cooperation; in doing so, (3) strengthening Europe's defence industry; and (4) taking forward partnerships, including with NATO. This implementation work has made significant progress with the setting-up of the necessary tools – e.g. with the refined Capability Development Plan (CDP) identifying the required capability priorities; the Coordinated Annual Review on Defence (CARD) promoting transparency and cooperation among Member States; the Permanent Structured Cooperation (PESCO) advancing development of multinational capabilities, collaborative programmes and multinational force packages; and the European Defence Fund (EDF) supporting research and development and multinational capability projects.

Close EU-NATO cooperation

It is clear that capability development in NATO and the EU necessitates close coordination. 22 Allies are also EU Member States and five other EU members are close NATO partners. They all have one set of forces and capabilities each to meet the requirements of both collective defence and crisis response.

EDA plays a key role in assisting nations to develop required capabilities, strengthening the CDP and acting as an interface between Member States and the Commission. When it comes to NATO-EU cooperation on capability development, EDA therefore is a key counterpart to NATO at staff level. EDA and NATO's two International Staff divisions in charge of capability development, the Defence Policy and Planning Division and the Defence Investment Division, have a collegiate, constructive and mutually beneficial working relationship with regular coordination meetings at all levels. This has become part of a new era of interaction between the two organisations that led, inter alia, to the Joint Declarations signed by the Presidents of the European Council and the European Commission and the NATO Secretary General to promote cooperation in areas that are crucial for the security of both the EU and NATO, such as countering hybrid warfare, cyber defence, defence capabilities, enabling military mobility, capacity building of partners and others.

European Defence reinforces European pillar of transatlantic security

In light of the growing strategic challenges facing both North America and Europe, the European nations together must increase their contribution to transatlantic security and take their fair share in

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ensuring security for their own continent. This means increasing defence spending (up to at least 2% of GDP by 2024) by all Allies, as pledged by their political leaders, investing in high-end capabilities and enhancing contributions to operations and missions that serve Europe's security. The imbalance between the commitments by the US and European nations must be adjusted. With this in mind, while Collective Defence remains NATO's sole responsibility, strengthening European Defence enhances the EU's contribution to Europe's security and thus reinforces the European pillar of transatlantic security. Conversely, enhanced defence spending for improved forces and capabilities developed within NATO and usable for the whole mission spectrum also benefits European Defence.

Coherence and complementarity

In this context, EDA and NATO staffs have been working to ensure that the capability priorities identified in both organisations are broadly coherent and complementary. Capabilities developed within the EU are also available to NATO and vice versa, upon nations' decisions. Also, the biennial NDPP review of Allies' efforts to implement their NATO Capability Targets and CARD are complementing each other in terms of output coherence – with the first focusing on nations' individual efforts and the second highlighting opportunities for multinational cooperation and promoting convergence of capability development. The two processes and timelines are being coordinated to spare the European nations duplicative reporting. It is also essential to ensure full transparency and fullest possible involvement of Non-EU Allies in CSDP capability development, since they provide substantial contributions to Europe's security. This has become particularly relevant in the context of Brexit as the United Kingdom's armed forces remain among Europe´s most capable ones.

The way ahead

Looking at the future, the growing strategic challenges require both NATO and the EU to increasingly focus on those capability areas that are essential for the whole mission spectrum – situational awareness, responsiveness, readiness and resilience. PESCO projects supported by the EDF should therefore help meet both CDP priorities and NATO defence planning priorities.

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The Joint Declaration signed on 10 July 2018 has given an additional boost to EU-NATO cooperation

Due consideration should also be given to defining the set of forces and capabilities the European nations should provide together, in quantitative and qualitative terms. NATO and EU staffs could explore ways and means and advise nations accordingly. Improving military mobility is a case in point: NATO and EU staffs are working together to create the legal, logistical and infrastructure conditions to enable movement of forces to, across and from Europe. The EU will spend several billions of Euros improving the transport infrastructure across Europe: roads, railways, bridges, harbours, airports. This will strengthen Europe's economic cohesion, facilitate deployment of European forces for crisis management, and enable rapid reinforcement for the defence of Europe as well as deployment of US forces to, across and from Europe, thereby contributing to transatlantic burden sharing.

Close partners, strong cooperation

Over the past 15 years, the European Defence Agency has developed close and important working relationships with a wide variety of EU institutions, agencies and bodies as well as other European organisations. A selection of thoughts and reflections from some of them.


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"EDA has played a crucial role"

By **Pierre Delsaux**, Deputy Director General, European Commission (DG GROW)

"Defence matters in a world that is unsettled by increasing international disorder. In response to changing and challenging geopolitics, European leaders decided to join forces to strengthen Europe's common security and defence. Driven by strong political consensus that Member States can no longer address security challenges on their own, a number of initiatives have been launched at the European Union level for the EU to become a more effective security provider. EDA has played a crucial role in this respect. The Agency has been traditionally the forum where Member States define capability development projects and jointly invest in those projects and in collaborative defence research projects. The expertise of the EDA in both capability development and in defence research has greatly contributed to the EU defence initiatives.

The Commission's contribution to defence at EU level is the European Defence Fund (EDF) and its two preceding test programmes, the Preparatory Acton on Defence Research (PADR) and the European Defence Industrial Development Programme (EDIDP).

Both the test programmes and the EDF aim at deeper cooperation in the EU in the areas of defence research and development. By funding collaborative projects proposed by consortia formed by entities such as companies and research organisations across the Member States, the Commission intends to support the innovation and competitiveness of the defence industry so that industry can provide the military capabilities that the armed forces in the Member States need. For the PADR, the Commission found a good partner in EDA that has been fulfilling the task of implementing the programme in a complementary and satisfactory way.

The ambition of the Commission is high. The EDF, PADR and EDIP can be a real game-changer in how industrial defence cooperation is organised within Europe: big military flagship programmes could be developed within the next decade.

But the PADR, EDIDP and EDF do not exist in isolation. Other important defence initiatives by Member States, like CARD and PESCO, for which EDA is the secretariat also aim at greater defence cooperation. All these initiatives have common goals, namely to make sure that the EU has the defence capabilities it needs. Linkages between these initiatives are important and equally important are the relationships between the respective institutions dealing with the implementation. EDA, with its expertise, could play an important role to help the Member States develop the capabilities they need.

First, the EDF focuses on the supply side of defence capabilities. The Commission will fund projects proposed by industry and research centres that can 'supply' a good solution for a defence capability. PESCO and CARD can have a role in streamlining the demand side of a capability. Member States can align their technical requirements for a specific defence capability within the PESCO and CARD framework, which is a requirement for some EDF actions.

Second, the capability part of the EDF is implemented through a co-financing mechanism. The Commission awards grants -at different percentage rates depending on the stage of the development process- from the EU budget to selected projects. Member States commit to finance the remaining costs. Synchronisation of national budget commitments to capability priorities of the EDF is crucial for projects to kick-off. As this is not easy to achieve, PESCO and CARD can assist to anticipate needed commitments and streamline defence budgetary planning of the Member States.

Third, the EDF focuses on projects where EU added-value can be demonstrated. The EDF's objective is not to address all the capability gaps identified in the Capability Development Plan (CDP), as this is the responsibility of Member States. As Member States have an important role in the implementation of the Fund, namely in defining the joint defence priorities within the Programme Committee that decides on the work-programme, they may take, for coherence reasons, priorities of the CDP, PESCO or CARD.

In sum, the different defence initiatives all deal with a different aspect of enhanced defence cooperation. But only through consistency and good relations between the defence initiatives and therefore also the European institutions and agencies can we achieve the shared goal, namely the delivery of European military capabilities".


© EUMC

"Cooperation between EUMC and EDA is paramount"

By General **Claudio Graziano**, Chairman of the EU Military Committee (EUMC)

"As stated in the EU Global Strategy, the EU should be credible, responsive and joined-up. It also acknowledges the need for the EU to further develop its hard power and, as a result, its military instruments.

Accordingly, EU Member States and the Union as a whole have clearly identified the need to step up their capabilities including the technological toolbox, which entails the need to address new important challenges and exploit great opportunities.

Drawing from my experience as a field commander, I consider the ability to respond to priority requirements and to benefit from the advantages that new technologies can deliver as a key tool to develop the military instruments.

In this context, the military input to capability development is an integrated part of a broader effort, managed by EDA through the Capability Development Plan.

The EUMC, supported by the EU Military Staff, regularly provides two out of the four strands used in the Capability Development Process.

Technological superiority is a must for European defence and an essential requirement in order to fully achieve the potential of the EU Global Strategy.

Security and defence are difficult and costly to build and to maintain, but very easy to lose. EDA and the EUMC are both expressions of Member States' voice, although with different but complementary roles.

On the one side, EDA supports the development of defence capabilities, acts as a catalyst, promotes collaboration and introduces solutions to improve defence capabilities.

On the other side, the EUMC represents the Chiefs of Defence and through them it ensures that the voice of the military end-users is heard in the EU institutions and that it is incorporated into the decision-making process at all stages and levels of the EU's CSDP.

For this reason, the cooperation between the two entities is paramount in order to ensure coherence in the overall development efforts and to make sure all actors involved are able to play a role in this endeavour".

"Close cooperation between EDA and EUMS is essential"

By Lieutenant General **Esa Pulkkinen**, Director General of the EU Military Staff (EUMS)

"This year is the 15th birthday of the European Defence Agency (EDA), established in 2004 with the aim to support the Member States and the Council in their efforts to improve European defence capabilities in the field of crisis management and to sustain the European Security and Defence Policy as it stands now and develops in the future.

Today, undoubtedly, the Agency has extended its original mission taking into account significant changes challenging the avaailability of military capabilities to meet political strategic objectives derived from a Global Strategy for the Foreign and Security Policy of the European Union. This applies in particular for the main priorities: to respond to external conflicts and crisis, to build capacities of partners and to protect the Union and its citizens.

Close cooperation between EDA and the EUMS is essential. Over the last three years this has led to an increased level of cooperation at all levels and resulted in constructive dialogue – it is through cooperation the goals and interests of the European Union will ultimately be met".

"Fruitful cooperation"

By **Arturo Alfonso Meiriño**, OCCAR Director

"As one of the members of its pioneer's team, I am very happy and proud to see EDA reaching its 15th anniversary. Its creation was most definitely a turning point in the way defence business was addressed at supranational level in Europe. The immediate launch and subsequent implementation of the four EDA flagships at that time - defence industry and market strategy, research and technology, armaments cooperation strategies and Capability Development Plan - paved the way for the recent EU defence initiatives.

Whilst the Organisation Conjointe de Cooperation en matière d'Armement (OCCAR) was already operating with its legal status since 2001, cooperation with EDA was foreseen from the Agency's outset. The Council statement of 10 November 2008, inviting EDA to seek the greatest synergy with OCCAR, came as no surprise. Both organisations share their European identity and the need to strengthen the competitiveness of the European defence technological and industrial base as a key factor to develop the defence capabilities needed in Europe to face current and future threats.

EDA and OCCAR concluded an Administrative Arrangement in 2012 by which both organisations sought and continue to seek that their activities are mutually reinforcing, non-duplicative, coherent and complementary. Whilst EDA has a prominent upstream role in the identification of military capabilities with the promotion of joint activities, research and technology and harmonisation of requirements, OCCAR is fully engaged in the downstream part of the process, focused mainly on the development, production and In-Service Support (ISS) phases associated to obtaining these military capabilities.

Thera are a number of examples of fruitful cooperation between EDA and OCCAR. Programmes such as ESSOR, MMF, MMCM or MUSIS originated in EDA and were then transitioned to OCCAR by those Member States that were willing to bring those projects to their next stage. I am convinced that we will see more examples of such fruitful cooperation in the short term. PADR, EDIDP and PESCO are European initiatives in which cooperation is at stake and EDA and OCCAR can support them by transforming these policies into tangible results.

My most sincere congratulations to EDA for these 15 years full of initiatives in support of European Member States and the Council in their effort to improve European defence capabilities in the field of crisis management. I look forward to our continued cooperation and to the success of both organisations".

"Effective synergies for the benefit of Europe"

By **Jan Woerner**, Director General of the European Space Agency (ESA)

ESA and EDA share several common traits for having shaped, throughout the years, very similar philosophies and work cultures: we are agencies that innovate and build, on behalf of our respective Member States, programmes and technologies that are instrumental in delivering critical services while helping shape Europe's role in the world. This shared disposition of developing innovative, user-driven programmes has been the driving force to our joint efforts, our very purpose and what will shape our future cooperation.

Space is central to security: space assets produce and deliver data and services of critical importance to the full spectrum of security. ESA, as Europe's space agency, has for decades been adamant about pioneering European intergovernmental, cooperative programmes to maximise benefits for a wide-range set of communities focused on science and applications. In this context, the growing relationship with EDA has been a welcomed evolution. The ESA/EDA administrative arrangement signed in 2011 provides a structured relationship to achieve shared goals. Our cooperation has since explored domains that have significant bearing on increasing the effectiveness of space systems for security, be it in critical space technologies for European non-dependence, cyber resilience R&D and training, space-based imagery needs or secured satellite communications, to name but a few of our joint policy and programmatic efforts. New opportunities to grow together in this relationship are multiple and offer an already promising horizon.

Over the last decade, ESA has conducted a strategic evolution of its role towards its Member States and users of space systems alike. Its relationship with EDA has been instrumental in progressively and successfully adapting itself to the requirements and culture of new communities, tackling specific technological and policy areas and delivering on objectives enshrined in our respective mandates. The trust, which ESA and EDA have together built with our Member States is testimony of the confidence our stakeholders give us in this endeavour, and which emboldens us to further strive in this strategic direction".


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"Cooperation makes perfect sense"

By **Alexander Stubb**, Vice-President of the European Investment Bank

"The EU is facing an increasingly complex and volatile range of security threats. Which is why I find it only natural that the European Council in October 2017 encouraged the European Investment Bank, the EU bank, to examine further steps that can be taken to support investments in defence research and development activities. We, here at the EIB, took this task seriously. The EIB approved the European Security Initiative - Protect, Secure, Defend, which has strengthened our support for RDI for dual-use technologies, cybersecurity and civilian security infrastructure. The initiative aims to provide financing of €6 billion by 2021.

The EIB and EDA have teamed up to support the EU's Common Security and Defence Policy.

As first steps, EDA and the EIB have signed a memorandum of understanding to strengthen cooperation, and now envisage cooperation in the Cooperative Financial Mechanism (CFM). The CFM is foreseen as a mechanism for EDA Member States to financially support the set up and conduct of the development of military technology. The EIB's role in the CFM would focus on supporting the development of dual use technologies.

Additionally, the two organisations will exchange expertise, in particular with a view to identify possible financing opportunities for defence and security-related research and technology projects of interest to the Member States participating in EDA. This could include both projects promoted by the Member States, such as those in the context of the recently launched PESCO, as well as projects promoted by companies including small and medium-sized enterprises in the defence and security sector. Given the risks and the emergence of new threats across all areas of the economy, we see it as the EIB's mission to provide financing for innovative solutions to help tackle some of these challenges. It makes perfect sense that we cooperate closely with EDA on this task".


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"Example of sharing efforts and avoiding duplication"

By **Eamonn Brennan**, Director General of EUROCONTROL

"I would like to congratulate EDA on its 15th Anniversary. It's an important milestone, and I am very glad that our two Agencies have built up a strong cooperation, over more than a decade of partnership. This cooperation has intensified over the years and has become instrumental when it comes to military involvement in Single European Sky (SES) implementation and SESAR research, development and deployment.

Our strategic partnership has helped ensure that relevant EC implementing regulations and EASA rulemaking take due regard of military requirements to avoid adverse impacts on military training and exercises.

It is also a great example of sharing efforts and avoiding duplication: EDA has the role to facilitate military views at EU level, while EUROCOONTROL provides operational and technical level expertise and solutions to best support military and civil aviation in Europe.

In that context, the civil-military cooperation and collaboration in ATM, CNS and Security is one of the key enablers for achieving the SES goals, and ensuring that the European ATM Network performs well and benefits both its civil and its military users. The new Network Functions Implementing Regulation, the outcomes of the Airspace Architecture Study and the Wise Persons Group have provided EUROCONTROL, which has just been reappointed by the European Commission as Network Manager until 2029, with guidance and targets in order to master the current capacity shortages in Europe's skies, and to establish a better performing European ATM Network

The excellent relationship built on trust and cooperation between EDA and EUROCONTROL will be key in the future also for the efficient and effective accommodation of military and civil aviation needs in a spirit of balanced considerations between economic needs, and security and defence requirements".


© SESAR JU

"Very solid cooperation"

By **Florian Guillermet**, Executive Director of SESAR Joint Undertaking

Over the years, EDA and SESAR JU have built up a very solid cooperation, guided by the principle that the European airspace is a resource shared by all airspace users whose specific needs must be taken fully into account. This relationship has been key to ensuring the active engagement of the military in all aspects of the SESAR research and innovation programme, from setting the strategic vision for Europe's skies in the European ATM Master Plan, to prioritising the research needs and then contributing to validating the resulting technologies and procedures (SESAR Solutions).

We believe this strong level of cooperation and trust between civil and military stakeholders, enabled through the SESAR JU-EDA relationship, are key to achieving the Single European Sky and ensuring that the airspace is used in the most optimal way by all those that seek to access it. In this respect, we need to continue to work together to harmonise civil-military procedures and technologies, without placing unacceptable constraints on either stakeholder groups.

We must also strive to find ways to share information and infrastructure in the more cost effective and efficient way. The technologies are there for greater interoperability and connectivity between civil and military stakeholders. We look forward to building on our current collaboration so that we can go further together in the future".

Quo vadis EDA?

By **Dick Zandee**. This summer, the European Defence Agency celebrates its 15th anniversary. What lies ahead in the next 15 years? The Agency has to be at the centre of European military capability development.

Since its creation in 2004, expectations about the future of EDA were high. The founding fathers had learned from the past to avoid a stove-piped institution solely focussed on one single area of capability development, such as research and technology (R&T). No, EDA would encompass the whole chain, from demand to supply. This was reflected in EDA's original structure with four Directorates: Capabilities (setting requirements); R&T; Armaments; Industry & Market. Based on the assessment of Europe's military capability shortfalls, R&T projects would be launched and armaments procurement programmes initiated, involving European defence industries as early as possible to ensure a capability-driven approach.

It sounded too good to be true

Indeed, reality turned out to be different. Most of EDA's achievements have been realised in what was originally considered as 'low-hanging fruit': organising training programmes (helicopters, transport aircraft, air-to-air refuelling, unmanned aircraft); pooling acquisition by Member States, for example with regard to commercial satellite communication services; or launching portals and tools to assist Member States and EU actors in defence planning, operations and other activities.

There are many other EDA projects and their importance should not be underestimated. Nevertheless, the number of large equipment procurement programmes, initiated by EDA, is just a single digit figure. The pooled acquisition of the Multi-Role Tanker Transport (MRTT) aircraft, now by five European countries, is an example. For the development of the Medium Altitude Long Endurance Remotely Piloted Aircraft System (MALE RPAS), initial work was also conducted in the EDA framework. However, even for these multinational acquisition programmes there is almost no visibility of the Agency's involvement. EDA conducts the upstream work of initiating and facilitating such European collaborative capability projects while the Bonn-based Organisation Conjointe de Coopération en matière d'Armament (OCCAR) manages the development and acquisition programmes downstream. Recent initiatives, such as the Franco-German Future Combat Air System and the Main Ground Combat System projects, were launched outside the EDA context.

Small Agency

In 2019, EDA is still a small Agency in terms of budget and staff. It is worth looking back at what the original expectations looked like. At the end of 2005, the first full year of EDA's existence with a budget of €21.2 million, the staff headcount was 80. In the summer of 2005, Nick Witney, EDA's first Chief Executive, asked all personnel present at an internal meeting to provide their forecasts on the numbers of staff and the Agency's budget in 2008. The average score was 150 staff members and a €40 million budget. At the time, this was considered as a realistic outcome, somewhere in the middle between the optimistic and pessimistic forecasts. The 2019 budget figure is even lower (€32.5 million), while the number of staff (around 170 today) barely exceeds the 2008 forecast. It is interesting to compare EDA with Frontex, the European Border and Coast Guard Agency. Frontex started in 2005 with a budget of €6 million; in 2018 it had risen to €320 million. It now employs 320 personnel and the number will grow to 1,250 by 2021. Thus, compared to Frontex, EDA has experienced a very limited growth-path.

An underused Agency

EDA's performance should not be measured by the size of its budget and staff, though. Member States were right in opposing institution-building as a goal in itself. Output should be the benchmark, it was often stated. Unfortunately, results only partly materialised as most Member States were reluctant to use the Agency for seeking

> "If Member States were to take European military capability development seriously (...) then EDA should be fully used for that purpose"

collaboration on R&T and armament procurement programmes. The figures speak for themselves: at the end of 2018, EDA's R&T portfolio amounted to €274 million in projects and programmes stretching over several years. The collaborative European Defence R&T expenditure as a percentage of the total Defence R&T budgets has gone down from its peak of 16.6% (2008) to 8% (2017), far away from the 20% benchmark agreed by Ministers of Defence in 2007. For European collaborative defence equipment procurement, the benchmark is 35% of the total; EDA data show that European countries only spent 16.8% together.

Conclusion: a big gap continues to exist between political statements on the need for European defence cooperation, and daily practice. Despite all the initiatives taken after the launch of the EU Global Strategy in 2016 – such as the Coordinated Annual Review on Defence (CARD) and Permanent Structured Cooperation (PESCO) – the 'dating house' for collaborative investment to improve European military capabilities remains largely underused. Even more worrying is that the 2017-2018 CARD trial run has shown that three quarters of Member States allocated less than 50% of their defence investment to priority actions stemming from the Agency's Capability Development Plan.[1] If in the past fifteen years the majority of European countries have not implemented what their Defence Ministers have subscribed to, will it happen in the future?

Change is needed

Europe's security is endangered by a complex set of threats and challenges which require well-coordinated responses by all actors involved, nationally through a whole-of-government approach or even a whole-of-society approach, and internationally by the coordinated efforts of the two leading organisations: EU and NATO. Looking at all the available instruments that are needed for integrated responses, the military element is most underdeveloped. The European capability shortfalls, which were listed at the start of the European Security and Defence Policy in 2000, still exist today despite improvements in areas like strategic transport, intelligence and reconnaissance. Others have been added, from cyber capabilities and artificial intelligence applications to high-end fighting power. The latter has returned prominently on the priority list due to the threats that Europe is facing, to its East in particular. There is no lack of priorities, but there is a lack of solutions. In the meantime, US President Trump is increasing the pressure on European countries by asking them to share the defence burden more equally with the United States.

The new framework

In recent years, important new initiatives have been launched under political pressure to improve European defence capabilities, both in the EU and NATO. In the EU, the famous trio of CARD, PESCO and the EDF (European Defence Fund) now provide the framework for European military capability development. In particular, PESCO and the EDF have been labelled as 'game changers'. PESCO marks the transition from 'voluntarism' to 'commitment' and the EDF is a revolutionary step of making the Union budget available for defence investment.

Nevertheless, the question may be asked whether these breakthrough initiatives will deliver a quantum leap in European military capability development. Member States have the lead in PESCO: a justified principle as they own the capabilities and they decide on their national participation in multinational military operations. Yet, based on the same principle, project selection may be driven by national needs rather than European capability shortfalls.

The 34 PESCO projects, launched so far, constitute a mixed bag. If they were fully implemented, the most pressing European capability shortfalls would continue to exist. The EDF offers great potential to stimulate collaborative capability development programmes as the Fund makes cross-border cooperation a precondition for investing money from the Union budget for defence. An important aim of the EDF is to strengthen the European Defence Industrial and Technological Base (EDTIB), as underlined in the Commission's EDF publications. The selection of projects and programmes in the pilot programmes – the Preparatory Action on Defence Research (2017-2019) and the European Defence Industrial Development Programme (2019-2020) – is in accordance with the capability priorities as defined in EDA's Capability Development Plan. →

[1] Roland Van Reybroeck, *What's in the CARDs?*, Egmont Security Policy Brief no. 103, February 2019.


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So far, so good. But the risk of an industry-driven selection process will not automatically disappear. Throughout the EDF's full lifetime, which is up to 2027, the capability-driven approach will have to be ensured. In that context, it is not comforting to read in the EDF (draft) Regulation that EDA will have observer status in the programme committees.

At the centre

If the EU Member States were to take European military capability development seriously – not only in declarations and Council conclusions but also in practical collaborative programmes – then EDA should be fully used for that purpose. This would imply at least three key changes to the current situation.

- First, the Agency should be the central place where the defence investment of the Member States is monitored and assessed, based on the capability priorities stemming from the Capability Development Plan. CARD and EDA's (shared) secretariat role in PESCO offer the necessary tools. They have to be used fully and should be further enhanced as required. Equally, EDA should play such a role for EDF investment, from the start in the programme selection committees by ensuring the capability-driven approach and throughout the programme implementation phase.

- Second, the whole chain of capability development – from setting common requirements to the production of equipment – should be managed under one roof. With too many actors in the chain, the door is open for deviating from the original definitions of operational and technical requirements during the downstream phases of capability development. We have seen it in the past. Commonly procured ships, vehicles and helicopters look the same on the outside but they are often very different on the inside – thus restricting the potential for interoperability and cost saving both for production and during the through-life maintenance period. In this context, the merging of OCCAR and EDA should be investigated. Multinational programme organisations outside the EU could be connected to EDA for reporting and assessment.

- Third, Member States should consider a serious growth path for the Agency's budget and staff when they express the political will to use EDA to the maximum extent. It is not about duplication with NATO nor about unwanted EU institution-building. EDA is the Defence Agency of and for the Member States. If they want to be in the driving seat, then they have to entrust EDA with the appropriate resources. The Agency has already been given new tasks in recent years – such as for implementation of CARD and PESCO – without any increase in the budget. Now, it is time to address the issue of resources in an output-related manner, not on the basis of ideology or politics. It will simply be impossible for the Agency to conduct the increasing amount of work without additional staff and money.

Naturally, making EDA the real centre of European capability development should not be done in isolation from NATO. Since the CDP is already defining European capability priorities beyond the needs of the Common Security and Defence Policy, it is not too difficult to synchronise capability development with the NATO Defence Planning Process. Equally, this applies to monitoring and assessment.

The way ahead

The one-liner of the first EU High Representative and Head of the Agency, Javier Solana, 'to spend better and to spend more together' is as relevant as it was in the early years of EDA's existence.

The years of austerity (2010-2014) resulted in a certain renationalisation of defence planning and programming. Across Europe defence budgets are now rising again. Under President Trump, the US pressure on Europe to contribute more to its own defence has been stepped up considerably. NATO remains fundamental to European security, but the Alliance's future is becoming increasingly dependent on Europe's contribution. The fragmentation of European capability development has to stop. Just pumping more money into defence is not enough. It can even lead to further fragmentation and a waste of resources.

Spending better and spending more together implies coordinated defence planning and maximising collaborative investment in order to increase interoperable forces and standardised equipment. This cannot be done solely between the capitals. It needs a European house. EDA was created for that purpose fifteen years ago. Let us use it to its full extent.


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