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EUROPEAN DEFENCE MATTERS

Inside the engine room

Checking the EU's defence mechanics

› NEW HEAD OF EDA
HR/VP Josep Borrell on EU defence cooperation

› COVER STORY
State of play & prospects of EU defence initiatives

› INCENTIVES FOR COOPERATION
EDA's Cooperative Financial Mechanism

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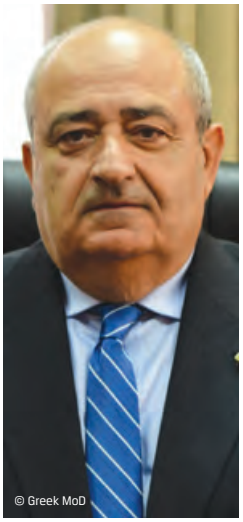

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Corrigendum: In the last issue of the magazine (page 39), we published a picture of Heinrich Brauss (Senior Associate Fellow at German DGAP). The picture was taken at the Berlin Security Conference (source: BSC) and not at the MSC as wrongly indicated. Our apologies.

Check-up time

Groundbreaking reforms overhauling long-established practices often face harder times or slow down once the initial euphoria has evaporated. The current drive towards deeper, better and more structured European defence cooperation cannot succumb to this fate. Three years into the implementation of the 2016 Global Strategy, the success of the new cooperation framework built around the revised Capability Development Plan (CDP), the Coordinated Annual Review on Defence (CARD), the Permanent Structured Cooperation (PESCO) and the European Defence Fund (EDF) must remain a priority for all actors and stakeholders involved.

We are at a crucial moment, once again. CARD, designed to provide a comprehensive picture of the EU defence capability landscape and identify cooperation opportunities, has started its first full cycle with a final report to be presented to Defence Ministers in November 2020. PESCO is gaining cruising speed with the 3rd batch of projects just approved and a strategic review scheduled for 2020. And preparations for the EDF are entering a decisive phase. On top of that, a new EU institutional cycle is about to start with new players: a new HR/VP and Head of the European Defence Agency (EDA), Josep Borrell *(to whom this magazine gives the floor directly, on page 4)*, and also a new European Commission and a new President of the European Council. Hence, an appropriate moment for checking-up what has been achieved so far and what is needed in the future to ensure EU defence cooperation can achieve its full potential.

In this issue of *European Defence Matters*, we review the impressive work done so far on CARD, PESCO and EDF and assess the main first lessons learned for each of them during their initial implementation phase. Importantly, we also give the floor to certain Member States to assess if and how the new EU mechanics have already impacted the way national defence planning is approached in European capitals.

We also shine a spotlight on several collaborative projects run by EDA on such diversified topics as the Cooperative Financial Mechanism (CFM), cyber defence and military diving standards.

We hope you will enjoy this magazine. Should you have comments or recommendations, please get in touch: info@eda.europa.eu

Elisabeth Schoeffmann
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Editor-in-Chief

"Member States must resort to collaborative programmes at EU level more systematically, using the EDA's full potential"
J. BORRELL

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Strengthen Europe, as a partner

In the following exclusive article for *European Defence Matters*, **Josep Borrell**, the incoming Head of the European Defence Agency (EDA), High Representative of the Union for Foreign Affairs and Security Policy and Vice-President of the European Commission, stresses the need for more defence cooperation and calls on governments to make the most out of the new EU defence initiatives (CARD, PESCO, European Defence Fund), notably by incorporating them into their national defence planning. What is needed, he says, is a "change of mindset" in the national Ministries of Defence.

Our world is changing dramatically, and not for the better. Instability and unpredictability are omnipresent, nurtured by surging nationalism and populism, terrorist threats, trade wars, climate change, migration crises, open and frozen conflicts in our neighbourhood and new emerging hybrid threats. The rules-based international order is being challenged by a logic of power politics which is more unstable and conflict-prone.

In the light of this, our citizens look to Europe for protection. They want a more united Europe to make its voice heard and defend their interests and values. They want Europe to step up its response and become a stronger and more efficient security provider in the world.

New level of ambition

It is clear that we must enable the EU and its Member States to take more responsibility for security, working with partners (first and foremost NATO) wherever possible, but acting alone when necessary. For this we need the Union's Common Foreign and Security Policy (CFSP) and Common Security and Defence Policy (CSDP) to become more active, which in turn requires greater defence investment, capability development and operational readiness. President-elect Ursula Von der Leyen's ambition to lead and shape a more 'geopolitical' European Commission must be seen, and welcomed, in the same context.

Cooperation is indispensable

What Europe needs is a more coherent and integrated defence landscape with a more capable, deployable, interoperable and sustainable set of military capabilities and forces. Today, too often, most Member States are doing their national defence planning without taking into account the →

broader European efforts. Member States must resort to collaborative programmes at EU level more systematically, using EDA's full potential.

There are many good reasons for cooperation, indeed. Joint planning, development and procurement and the Pooling & Sharing of capabilities improve the output of military spending and save large amounts of taxpayers' money. But cost-effectiveness is not the only benefit. Interoperability and increased effectiveness are equally important outcomes. Compared to the US, for instance, European armed forces operate far too many different types of military capabilities. Europe cannot afford to have its Member States spending their defence budgets inefficiently because of fragmentation and duplication. We have to spend better, and the best way to spend better is to do it together.

Step change

In recent years, we have mastered more political support for European defence than previously. We have set up new EU defence cooperation tools which, if properly implemented and used, will lead over time to a more structured joint European planning framework that will enable systematic cooperation, from investment and capability development to the joint operational use of those capabilities. The revised Capability Development Plan (CDP) with its 11 European Defence Capability Priorities, the Coordinated Annual Review on Defence (CARD), the Permanent Structured Cooperation (PESCO), and the European Defence Fund (EDF) should allow Member States and their Ministries of Defence to spend their defence budgets more effectively (avoiding duplication) and achieve the full spectrum of defence capabilities that are required in the 21st century, in complementarity with NATO. It will also enhance the competitiveness of the EU's defence industrial and technological base. All in all, it will improve the Union´s ability to tackle security threats more effectively.

No room for complacency

Does this mean we have done our homework and can now lean back? Not at all. The creation of the tools was only a first step. We now need further bold steps in the next five years towards a more capable European Union in defence. The CDP, CARD, PESCO and EDF are powerful instruments, but it is up to national governments to make the most out of them.

First, they must be implemented in a coherent manner and used in the right sequence, meaning that the regularly updated CDP identifies the defence capability priorities Member States need to focus on; the CARD provides an overview of the existing capabilities in Europe and identifies opportunities for future cooperation; PESCO offers options how to develop prioritised capabilities in a collaborative manner; and EDF provides EU funding to incentivise and support cross-border collaborations, with a special bonus for PESCO projects. EDA plays a central role, not only in the functioning of each of the tools but also in ensuring coherence among them.

Second, smooth and efficient interplay between all actors involved in the tools will be of utmost importance. Wearing my three hats as High Representative, Vice-President of the Commission and Head of EDA, I will attach particular importance to ensuring that the implementation work carried out within the European External

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Action Service (EEAS) and EDA is conducted in close coordination and synergy with the Commission services, in particular with the future Directorate General for Defence Industry and Space.

Third, beyond the technical implementation of the EU tools, what we need is a change of mindset in the national Ministries of Defence: they must truly embrace the new approach and use the instruments for their national defence planning. First and foremost, MoDs must ensure that the agreed EU Capability Development Priorities are embedded into their national defence plans and that they are taken into account when new defence capability development projects are initiated, preferably in a collaborative manner. This will require strong and sustained political commitment from all involved in defence planning around Europe.

We can only be successful if Member States remain committed, also in the longer run, to pursue on a more collaborative and integrated way of planning, financing, developing, deploying and operating defence capabilities together.

NATO remains the cornerstone

Importantly, strengthening Member States' single set of forces will not only increase the EU's ability to act autonomously when needed, but also reinforce Europe's contribution to NATO and cooperation with other partners. This is key because coherence with NATO is and will remain an integral part of our efforts to develop a stronger European Union in defence. We remain attached to EU-NATO cooperation because NATO will always be the cornerstone of Europe's collective defence.

Our shared objective is to ensure the security of our citizens and to strengthen the transatlantic bond; both organisations play complementary roles in providing security in Europe.

A stronger EU on defence also makes NATO stronger. By developing European defence, we will reinforce the Atlantic Alliance, and by carrying more weight in NATO we will contribute to a more balanced transatlantic relationship.

> "We need a change of mindset in the national MoDs: they must truly embrace the new approach and use the EU defence instruments for their national defence planning"

Beyond pragmatism - towards the European Defence Union

Considerable progress was made in recent years to enhance Europe's clout in security and defence but more needs to be done, argues **Nathalie Loiseau**, the new chair of the European Parliament's Subcommittee on Security and Defence (SEDE).

The European Union's *raison d'être* is to enhance Member States capacity to be efficient and capable actors, delivering functioning policies and opening up the full potential of the EU's collective strength. This has been the integration process' leitmotiv from the start. In an interconnected world undergoing profound changes, with the certainties of yesterday becoming the liabilities of tomorrow many politicians, and, most of all, voters see the future of our European edifice closely linked to the problem-solving abilities of the EU.

In the area of security and defence the EU and its Member States have not been sufficiently committed for far too long. The world has, regrettably, changed in ways which many of us would not have thought imaginable only a few years ago. It has become a much more dangerous and volatile place. Systemic competition is back on the menu. We are faced with hybrid war tactics, and much worse, on a daily basis. The time when the EU could be content to focus mainly on its role as a civilian power and to go for the easy policy choices is over. The holidays from history are over.

The EU's progress in the area of security and defence, achieved since the European Council of December 2013 and the endorsement of the EU's Global Strategy has been staggering. More has been achieved during these years than in many decades before. But let's face it: much more still needs to be achieved in the coming years in order to make the EU as relevant in security and defence matters as the rapidly changing international environment requires.

In many ways the European Parliament and its Subcommittee on Security and Defence (SEDE) have been the heralds of the developments we can now finally see picking up in the EU's security and defence policy. Since the entry into force of the Lisbon Treaty SEDE has been constantly hammering on the other EU institutions' doors urging them to make use of the Treaty's full potential. In this context, SEDE has always been supportive of the European Defence Agency (EDA), its role in the field of defence capability development and its institutional function.

The pilot project on EU defence research of 2014 was the precursor for a dynamic development that led to the European Defence Fund. Parliament, as budgetary authority of the EU, took the lead and gave the green light to use EU funds in the area of defence. This was a real paradigm shift!

Since then we have seen a plethora of activities and actions aiming at strengthening the defence capabilities of the EU Member States. PESCO, for which the third wave of projects has just been endorsed, the CDP and CARD, EDIDP and, hopefully soon, the EDF are the core building blocks of a complex process the likes of which we have never seen before within the EU context. The manner in which these different but complementary elements connect with each other and create the desired synergies will be crucial to the success of the overall policy. There will be trial and error, for sure. This is part of any newly emerging policy. Adaptations and course corrections will be necessary. However, failure is not an option! Too much

is at stake. If the EU and its Member States want to remain relevant in international security and defence matters, if we want to shape our destiny instead of being shaped by others, we must maintain technological sovereignty as the foundation of a vivid technological and defence industrial base which ultimately is the key for strategic autonomy.

Therefore, Parliament and in particular SEDE, will very closely follow and scrutinise the implementation of the agreed measures in the coming years. For that, we will cooperate with the other relevant committees in Parliament and with all EU actors concerned. This will be one of our main priorities for the new legislative term. We will encourage progress as much as we can, but we will also clearly point at all those actions, which fail to deliver the envisaged results. We will use, in a constructive manner, all instruments at our disposal, political, procedural and budgetary to ensure that taxpayers' money is spent the way it should.

However, we cannot simply limit ourselves to be content with the implementation of the agreed measures, as important as this is. We need to systematically develop the EU's security and defence policy further so that we come closer to the goal of establishing a European Defence Union. In this perspective the EDF will be only the first, though important step, towards a fully-fledged EU security and defence policy.

Progress in the EU security and defence policy should be pragmatic and incremental. That is what many interlocutors keep telling the European Parliament. It has worked very well during the last three years or so. So, let us continue and not rock the boat. Really? Parliament has taken a quite different view during the previous legislature. It has demanded, on several occasions, to create a European defence Whitebook.

Developing defence capabilities without having a strategic understanding of what these capabilities are good for, what they will be used for, what our priorities are, is risky, even dangerous. This is where we stand today. Just take a look at the latest report of the European Court of Auditors.

In the EU we cannot escape a serious reflection about our future security and defence strategy. If we fail to put our EU defence efforts into the perspective of a strategy worthy of its name we will ultimately fail to deliver the results we need and which citizens are looking for. Therefore, strategy will be a key priority of my work as chair of SEDE.

Everybody – EDA, the new Commission with its DG Defence Industry and Space and the other relevant EU actors – needs to think strategically. There is no time to lose.

EU defence initiatives, three years on

To live up to the high defence ambitions set in the 2016 Global Strategy, EU Member States agreed on new cooperation tools which would have been unthinkable only a few years ago: the Coordinated Annual Review on Defence (CARD) endorsed by the Council in November 2016; the Permanent Structured Cooperation (PESCO) launched by 25 EU countries in December 2017, and the European Defence Fund (EDF) proposed by the Commission in June 2017.

The whole package of defence initiatives is well underway: after a test run, CARD has embarked on its first full annual cycle to end next autumn; PESCO has already triggered 47 multinational projects to date; and the European Defence Industrial Development Programme as well as the Preparatory Action on Defence Research – both precursor programmes of the EDF – have started co-financing collaborative projects.

In the following pages, we assess the implementation and first achievements of the three instruments and look at the challenges awaiting them in the short and medium term. We also ask if the new instruments – and the cooperative spirit underpinning them – have already started to have an impact on national defence planning in the Member States.

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CHECKING THE NEW EU DEFENCE TOOLS

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CARD's on the table: foster coherent defence capabilit development in Europe

Much of the attention during the past two years has been focused on the EU's PESCO and European Defence Fund initiatives. And it's easy to see why, given PESCO's high visibility and ground-breaking legal framework, and the European Commission's first-time foray into defence funding with the EDF.

However there's another initiative, less well known to the general public, which will very likely have a significant long-term impact on defence planning and capability development of the EU Member States. It's called the Coordinated Annual Review on Defence, or CARD. Its overarching goal: to provide, over time, a comprehensive picture of the European defence capability landscape and foster more consistent defence planning between Member States.

Formally created by the Council in November 2016, CARD's mechanisms will collect information from the Members States on their defence plans, spending and related programmes for aggregation at EU level.

Based on a cyclical two-year process, CARD will build up a bird's eye view of the extent to which the Member States collectively use and implement the 11 priorities of the EU's Capability Development Plan (CDP). Those priorities represent the baseline and main driver for coherent capability development from a European perspective. Ultimately, CARD's output will support senior political and military leaders and their decisions affecting the EU's defence sector.

Identifying trends and cooperation opportunities

Although, the CARD will not function simply as a snapshot of today's defence

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landscape. It will also point to future likely developments in defence capability development such as technology trends and the industrial capacities to exploit them. It will also look at the actual and planned activities of national defence ministries as an indicator of their likely impact on the EU defence landscape, including equipment upgrades, modernisation and replacement. The CARD will also offer a perspective into the Member States' operational activities, and the identification and promotion of opportunities for multi-national collaboration.

All this is an important distinction from the 'old school' defence planning approach, predicated on comparing existing capability shortfalls against a given level of ambition. Instead, the CARD will analyse defence expenditure trends among the Member States by collecting actual and forecasted budgeting figures for each of the domains relevant to military capability development (land, air, maritime, joint etc.). This approach should reveal, in concrete terms, where national capitals are actually putting their money (aircraft, tanks, warships, etc).

"It is one thing to say you are planning to do something, but it becomes much more concrete if you are actually funding it," said Philippe Leopold, the European Defence Agency's (EDA) Head of Unit for Cooperation Planning. "Our approach will provide trajectories and perspectives of capability development at European level, including the impact of the EU's recent defence-related initiatives."

Trial run & lessons learnt

CARD's first formal cycle began in autumn 2019. Prior to that, the Agency and the EU Military Staff ran a trial exercise to test the waters. It was fed by preliminary information from EDA's own databases and enriched by additional budgetary, programmatic and other kinds of defence planning information provided by the Member States. CARD's trial run report was submitted to Defence ministers in November 2018. →

A first encouraging outcome of the CARD's trial was Member States' growing awareness and use of EDA's 'Collaboration Data Base', or CODABA. Created a decade ago within the Agency and steadily populated with national updates since then, CODABA now offers more than 7000 searchable files on the capability plans, programmes and in-service equipment of all EU Member States, plus Norway, Serbia and Switzerland. CODABA users can pinpoint capability ideas either for national planning or cooperation which makes it an essential tool for identifying collaborative opportunities to be then followed-up in the CARD framework.

Furthermore, a trio of lessons learnt emerged from the trial's analysis.

The first was that all agreed that the Agency's consultation and liaisons with national capitals worked well and that it provided added value in support of the overview. "For the first time the trial CARD gave us a view on how the Member States are implementing the CDP priorities and whether they are approaching this only at national level or in cooperative ways with other EU countries," observed Jorge Domecq, EDA's Chief Executive. "That view will become sharper as more information is gathered in future CARD iterations."

The second lesson suggested ways to strengthen the CARD process by expanding the scope of its information. "The trial CARD's focus was mainly on national capability development budgets and programmes. For the future, we are expanding that to include the Member States' research and technology efforts and industrial aspects related to capability development, in order to provide a larger and richer analysis of the European defence landscape" said Mr Leopold.

"We know R&T is sensitive for some countries, so the required granularity of the R&T information still requires some adjustments. There are also some sensitivities in gathering information from Ministries of Defence about industry since some of them are not in a position to talk about activities due to concerns over confidentiality", he added.

The third and final lesson learnt was one of timing and how in future to integrate CARD's cycles with other defence activities in Europe. CARD's bilateral visits and consultation with the Member States will take place every other year, beginning in September and ending in February. It is important that these align in the best way with PESCO's framework and with NATO's defence planning consultations to benefit from the latter's data collecting effort, while avoiding any unnecessary burden on the Member States. PESCO's upcoming strategic review in 2020 and the next CARD report (November 2020) will offer opportunities to adjust the overall timelines of these different processes.

"The CARD will provide the necessary overview and indications to help bind together national planning, multinational PESCO projects and the European Defence Fund, all the while remaining complementary to NATO's defence planning targets," said Mr Domecq. "If it works as we intend, the CARD will provide the overview of the entire European capability landscape, and thus function as a pathfinder to support related political decision making", he concluded.

PESCO: putting capability development to the test

Launched in December 2017 by 25 EU Member States, Permanent Structured Cooperation (PESCO) in defence is the key indicator of how actively its participants intend to pursue collaborative capability development. PESCO's legal clarity, strong high-level political endorsement and link to EU funding create the incentives for multinational efforts to fill Europe's capability gaps.

In less than two years, the number of PESCO projects has increased from 17 to 47. More importantly, the projects are growing in scope and ambition too, with increased budgets and more advanced technologies and capabilities *(see box on page 16)*.

The crucial aspect of PESCO, however, lies in its 20 common binding commitments, which each participating Member State agreed to fulfil when joining the PESCO framework. These are designed to help fulfil the EU Treaty's level of ambition in defence which includes carrying out the most demanding missions and operations, boosting European defence cooperation, and developing national defence capabilities via multinational procurement projects that involve the most appropriate industrial entities, including small and medium sized enterprises. The long term vision of PESCO is to arrive at a coherent full spectrum force package – in complementarity with NATO which will continue to be the cornerstone of collective defence for its members.

To achieve those objectives, the PESCO countries have started embedding the commitments' European perspective in their national defence planning, budgets, →

PESCO was launched by 25 Member States in December 2017

PESCO projects: growing in scope and complexity

PESCO's latest batch of 13 projects, approved in November 2019, ranges from operational projects, such as the special operations medical training project, to capability-oriented projects related to the airborne electronic attack technologies. Two projects from the latter category are **MUSAS** (Maritime Unmanned Anti-Submarine System) and **TWISTER** (Timely Warning and Interception with Space-based TheatER surveillance).

MUSAS, for example, will develop an advanced command, control and communications service architecture to counter underwater threats. It will also help to protect underwater infrastructures and sea-based energy systems. It will be coordinated by Portugal, with Spain and France as partners.

As for **TWISTER**, it will focus on countering hyper-velocity missiles and other platforms. It aims to boost the European Union's ability to detect, track and counter such threats. This will be achieved by combining various enhanced capabilities for space-based early warning and endo-atmospheric interceptors. It will be coordinated by France, with Spain and Romania as partners.

PESCO Secretariat

Within the PESCO Secretariat, which comprises EDA and the European External Action Service (EEAS) including the EU Military Staff (EUMS), the Agency has a supporting role at various levels.

First, it serves as a platform where PESCO participating Member States can identify, assess and consolidate possible projects. EDA's input at an early stage of project assessment helps to ensure there is not unnecessary duplication with existing initiatives, as well as other institutional contexts. This is crucial because the aim is to move away from a culture of duplication of efforts towards more interoperability.

Second, EDA can support the practical PESCO project implementation, at the request of Member States. This role is particularly well suited to the Agency as PESCO's two-layer approach is similar to the project governance structure in EDA: Member States have full control of the project content, with the Agency serving participating nations as a facilitator and service provider.

Third: EDA plays a leading role in the annual assessment of PESCO nations' contributions and fulfilment of the binding commitments for the capability aspects.

programmes, and joint efforts. Thus, the impact and benefits of PESCO should not be assessed against the size and value of the projects only; equally important are the permanent changes initiated and achieved by the 20 commitments.

Along with other players, the European Defence Agency (EDA) is a key PESCO facilitator. Taking the EU's Capability Development Priorities (approved in June 2018) as a baseline, as well as the findings of the Coordinated Annual Review on Defence (CARD), the Agency supports the participating Member States in implementing PESCO in both aspects, to develop a common understanding on the attainment of the commitments and to support capability development projects. Over time, this should contribute to improve the coherence of the European defence capability landscape and strengthen its defence and industrial base.

Commitments are important

PESCO's 20 binding commitments are grouped in five broad categories, related to: the level of national investment expenditure on defence equipment; the alignment of the Member States' defence apparatus; the availability, interoperability, flexibility and deployability of their forces; the multinational approach to close capability gaps; and, finally, the use of EDA as the framework for major joint equipment programmes.

The commitments motivate national planners to assess the impact of their plans and programmes against the European defence capability landscape. One crucial question each planner will need to answer is: will my national programme boost that landscape's coherence or lead to more fragmentation?

Clearly, that kind of thinking rises above a strictly national viewpoint. "It means embedding the EU perspective into national planning and taking into account all those EU inputs and tools such as the Global Strategy, CARD, CDP, the European Defence Fund and other initiatives. This demands a real change in thinking," says Alessandro Cignoni, Head of EDA's PESCO Unit.

Though PESCO's first phase will end in 2025, the Member States will carry out a strategic review of its outputs in 2020 to take stock and define more precise objectives for its evolution. The review will generate data and evidence for better aligning the EU's defence-related initiatives via stronger synergies and cross-fertilisation between PESCO and CARD, for example.

Improving project coordination

Meanwhile, the scope and definition of PESCO proposals have improved with each new batch of projects, particularly the latest, third round approved in November 2019. This is partly due to better consultation and coordination among the 25 national defence ministries as they develop their multinational capability ideas.

The PESCO Secretariat *(see box on page 16)* also helped by organising a series of workshops from June to September 2019 to advise them on ways to strengthen their proposals. "After those events, the proposals' budgets and military requirements were clarified with more granularity. And the projects were also better aligned with EDA's Strategic Context Cases, which help implement the EU's capability development priorities in a coherent manner," said Mr Cignoni.

Another encouraging sign is that there were more mature proposals in the third batch, he said. "Cooperation and preparation among Member States started earlier than during the previous two rounds, so there were proportionally more joint proposals, which were very well described and explained. This is an indicator of a shift towards more quality rather than quantity."

"Emphasis should be given to quality rather than quantity"

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Three questions to... **Lt General Esa Pulkkinen**
Director General of the EU Military Staff (EUMS)

The PESCO Secretariat is composed of the EEAS, including the EU Military Staff, and EDA. How do you assess the Secretariat's work so far?

The PESCO Secretariat has so far successfully managed to fulfil all assigned tasks. All timelines have been met and I understand that participating Member States are satisfied with the service provided. As for the internal proceedings of the Secretariat, the professional attitude of all individuals involved and the output-oriented approach has helped to resolve every question that aroused naturally in the formation of what is a new institutional body.

From the angle of the EUMS: what are the main lessons learned so far?

Obviously, the success of the PESCO framework depends to the greatest extent on the participating Member States. To promote the success of project proposals some more time and opportunities for the presentation and promotion should be provided. With regard to the National Implementation Plans, success could be enhanced by elaborating more on the type of information participating Member States are required to provide in order to demonstrate their efforts to fulfil the more binding commitments. There are already 47 projects set up and running from the first three waves. It may be worthwhile to examine the projects and the extent to which they are related to each other. Activities in similar projects could be coordinated to achieve greater efficiency.

How to ensure PESCO will unleash its full potential from an operational point of view?

Again, subject to the results of the upcoming 2020 PESCO Strategic Review, the criteria relating to the operational point of view may need some revision to better capture the benefit of PESCO project proposals that are focused on training, capacity building and operational readiness. Within the Strategic Review lessons learned and lessons identified from past or ongoing CSDP missions and operations could help to identify the most relevant capabilities/operational resources that may be made available through the PESCO framework. Our emphasis should be given to quality over quantity. From an operational point of view the PESCO framework is on track but needs to maintain and increase momentum in order to achieve the EU military level of ambition. We should keep in mind that the PESCO framework serves the purpose to deliver tangible results to mitigate existing shortfalls in CSDP missions and operations.

EDF: opening new 'windows' for defence support

The European Defence Fund (EDF) will blaze a politically once-unthinkable path when, from 2021 onwards, it will (co-)finance multinational defence projects. Already now, through precursor programmes, the Commission is testing the Fund's two planned 'dimensions' – one for defence R&T through the Preparatory Action on Defence Research, the other for defence capability development and prototyping through the European Defence Industrial Development Programme. Once operational, the fully-fledged EDF will institutionalise the practice and lift the spending to far greater levels.

The EDF will not be a stand-alone instrument, however. Although it is chiefly bound to improve the competitiveness of the European defence industry, it will need to resonate closely with all the other European defence related prioritisation tools and initiatives set up in the aftermath of the Union's 2016 Global Strategy, especially the EU's revised Capability Development Plan (CDP) which delivered the 11 EU Capability Development Priorities, the Overarching Strategic Research Agenda (OSRA), the Coordinated Annual Review of Defence (CARD) which is tracking the Member States' defence plans, research goals, budgets and other aspects related to defence capability development, as well as PESCO, the Permanent Structured Cooperation in defence. The EDF will complement all these tools insofar it is meant to (co-) finance collaborative defence capability development and research projects.

Yet some question marks remain. Whereas the CDP, OSRA, CARD and PESCO are up and running, the EDF still awaits final approval of its implementing regulation (proposed by the Commission in June 2018) by the EU's two legislative branches, the Council and the European Parliament. Directly linked to this is also the crucial question whether its proposed budget of EUR 13 billion will emerge intact, as the European Parliament, Commission and Council are entering difficult budgetary talks over the Union's next 2021-2027 multiannual financial framework. Finally, it is not clear yet how the Commission exactly plans to administer the EDF, including how it will delegate functions to other stakeholders. Meanwhile, preparations for the fully-fledged EDF are well on track on both dimensions: defence research and capability development.

Testing EU-financed defence research

The EU's first real excursion into self-funded defence R&T began with a Pilot Project (2015-2018) followed by the Preparatory Action for Defence Research (PADR) in 2017 which was granted a budget of EUR 90 million over three years to test the political and technical feasibility of using – for the first time – EU money to support defence research.

As this was uncharted territory for the Commission, it turned to the European Defence Agency to run and manage PADR's annual calls for proposals and proposal evaluations and to oversee the granted projects up to their conclusions. This was arranged by having the Commission delegate these responsibilities to the Agency through a delegation agreement signed in March 2017 which required some new management and budgetary techniques within the European Defence Agency (EDA) to fit with the Commission's rules and procedures, according to Jean-François Ripoche, EDA's Director for Research, Technology and Innovation.

"We extracted some lessons learnt. The grant-agreement process for the 2017 and 2018 calls took more time than expected, for example, while it was needed to adapt to the way the Commission deals with classified information and security-cleared facilities. We tried to provide input to avoid the risk

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of over-classification yet we are all getting there in the end," said Mr Ripoche.

Currently the Agency is evaluating PADR's third and final annual calls whose projects will have an average lifespan of two-to-three years, meaning until 2023. One of the topics – disruptive technologies – has attracted a lot of interest. "Whereas we had a maximum of around 10 proposals for the previous two calls, this one saw around 30 coming from industry and other players," said Mr Ripoche. "It's a hot topic."

In the meantime, PADR's other projects are starting to deliver results. For example, in March 2018 the first major PADR research project known as OCEAN2020 was launched. With a EUR 35.5 million budget and a consortium of 42 partners from industry, academia and the military (with the support and assets coming from the navies of 10 EU nations) the project is testing the integration of above-water, surface and underwater unmanned vehicles with manned platforms to boost maritime situational awareness. OCEAN2020 gave its first live demonstration in the Mediterranean Sea on 20/21 November 2019, and another demonstration will follow in the Baltic Sea in summer 2020.

Joint capability development

EDA is also involved in the EDF's other preliminary programme known as the European Defence Industrial Development Programme (EDIDP), designed to support competitiveness and innovation across Europe's defence sector. A two-year initiative (2019-2020) with a EUR 500 million budget, EDIDP supports joint development of defence equipment and technology in a wide range of cutting-edge defence technology domains including drone technology, satellite communication, early warning systems, artificial intelligence, cyber-defence or maritime surveillance.

In March 2019, the Commission published nine calls for proposals for 2019, with 12 further calls expected to follow in 2020. These calls cover priority areas in all domains – air, land, sea, cyber and space.

"EDA has an observer position vis-à-vis the EDIDP where our role is to provide views and expertise based on the agreed EU capability development priorities and the implementing Strategic Context Cases to ensure that the EDIDP's funding goes towards filling the identified capability gaps and the provision of more coherence of the European capability landscape. In addition, upon request by Member States, EDA can provide support in its upstream role and conduct an assessment of the expected impact of specific projects," said Franck Desit, the Deputy Director of EDA's Capability, Armament and Planning Department. "The CDP and the EU Capability Priorities, after all, are the compass for EU-level defence initiatives." →

The bigger picture

As previously mentioned, PADR and the EDIDP are two sides of the same coin in that, together, they represent the test-bed for the future European Defence Fund. What exact role the Agency will have vis-à-vis the EDF remains to be determined.

On the research side of the equation, Mr Ripoche reckons there will not be a global delegation agreement similar to the PADR arrangement EDA signed with the Commission in 2017. "While we are ready and willing to provide support and avoid structure duplication, taking on responsibility for EUR 500 million worth just for the research dimension each year would probably be a huge scaleup for the Agency. But, clearly, there could be a project manager role for us, and that on various EDF research themes," he said.

More important will be the Agency's potential advisory role, both related to defence research and capability development. "Hopefully, we will capitalise on one of EDA's traditional strengths: providing expert-driven upstream advice to Member States and making sure the funding goes to projects which are in line with the agreed European capability development priorities and thus really contribute to significantly impacting the coherence of the European capability landscape," observed Mr Desit. EDA's expertise will therefore be a key asset. "One lesson we've learnt from the Preparatory Action is that the better-structured projects are those where the requirements are tailored to Members States' needs and benefits and the selection of proposals is based on the quality and expertise while looking for cross-border cooperation. Given its scale, that will be a challenge for the EDF," added Mr Ripoche.

Another challenge will be to bring in a sufficient number of smaller companies and also to get the expected outcome from the projects. "We think the EDF's rules of participation – and the money that will be available for them – will compel project leaders to reach across borders and find small and unconventional players. We've helped them to do that with the PADR projects, and this kind of things will grow in importance as the EDF gets underway," said Mr Ripoche. "Above all, for successful implementation in defence you have to follow very closely the work of a given consortium, which is where EDA has long experience. You can't just 'fire-and-forget' the project once a contract is signed".

Bringing it all together

Whether it's for research or capability development, however, a successful EU-funded defence project ultimately depends on the quality of its proposal and, just as important, the quality of its consortium – and there EDA has a couple of aces up its sleeve.

One is the Agency's nascent tool, the so-called collaborative 'marketplace' whose aim is to provide Member States with a flexible, structured and transparent framework for sharing, on a voluntary basis, their ideas about potential projects in the context of EDIDP and the future EDF, and to look for mutual interests. Concretely, the marketplace intents to stimulate cooperative projects to meet Member States' needs addressing the 2018 EU Capability Development Priorities, through clarification of projects' content and building common understanding of Member States' interest in the different proposals. It also aims at further developing the complementarity and synergies between CARD, PESCO and the EDF, based on the EU Capability Development Priorities and OSRA. Launched in 2019, the marketplace is implemented through a test phase approach focused on the second year of EDIDP and the first year of EDF. It will remain informal in nature with an objective to ensure transparency and sharing of information, not causing any distortion of competition.

"Basically, with the marketplace, Member States have the possibility to freely and informally exchange views on their projects and look for feedback from other Member States as well as EDA's view on the project against the background of the European capability landscape." explained Mr Desit.

EDA's other ace is its long-standing "CapTech" community, a network of some

Gripen fighter production *(picture: Saab)*

2500 technical experts linked to the EDA's constituent ministries of defence. Currently divided into 12 different CapTech groups, each brings together Ministry officials and representatives from industry and academia to define the best kind of projects worth pursuing. Meeting three or four times a year, the groups rely on some 140 technology building blocks to guide their work, all of which links technological domains to the priorities of the Capability Development Plan.

Noting that the CapTechs teams have been around for years, Mr Ripoche said "this sort of thing is not built up quickly, but it is crucial because you ensure that way coherence between national and EU level. And when a Member State wants to involve its industry or academia in defence R&T to a larger scale, we always tell them: join the CapTechs! They are the first upstream point of contact."

Three questions to...

Pierre Delsaux, European Commission

Deputy Director-General for Internal Market, Industry, Entrepreneurship and SMEs

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How do you see EDA's role in the implementation of the European Defence Fund (EDF)?

The general objective of the EDF is to foster the competitiveness, efficiency and innovation capacity of the European defence industry. The Fund should notably incentivize cooperation between companies and between Member States in the research and development of defence products and technologies. Such cooperation should be consistent with defence capability priorities commonly agreed by Member States within the framework of the Common Foreign and Security Policy, and particularly in the context of the Capability Development Plan (CDP).

In this context, EDA has an important role to play by helping Member States to increase focus in the EU priority setting on defence capability development and defence research to be addressed by the EDF. The CDP and other prioritisation tools play a central role in this exercise. In addition, EDA, through its role in PESCO and the CARD, can contribute to the identification of cooperation opportunities and help Member States to synchronise their national investment plans.

The partially agreed EDF Regulation refers to EDA's prioritisation tools which should inform and guide the Fund to make sure it is output-oriented and focused on real capability needs. How can the Commission make sure those tools will be used in the most efficient way?

The EDA's prioritisation tools will inform the identification of EDF funding priorities reflected in its annual work programmes where the Commission defines the categories of actions and topics to be supported by the Fund. In preparing the work programmes, the Commission is assisted by a Committee of Member States (the Programme Committee). As an observer to the Programme Committee, EDA will have the opportunity to provide its views and expertise, and can thus help to ensure that the work programmes are consistent with CDP and OSRA.

The experience with the precursor programmes of the EDF show that this process works. We have ensured that categories of projects identified as funding priorities in the European Defence Industrial Programme (EDIDP) and the research topics defined to be supported by Preparatory Action on Defence Research (PADR) are fully consistent with those of the Capability Development Plan.

As regards the research dimension of the Fund, to what extent will the EDF build on the experience acquired and lessons learned from the implementation of the Preparatory Action?

First experiences from the Preparatory Action have been influential in shaping the specific rules on defence research of the proposed EDF Regulation. Some of the practices applied for PADR research actions were different from the civil research programme Horizon2020 and seemed well adapted to defence research. Examples are the 100% EU funding support for research actions, the use of 'Special Reports' to inform Member States in detail about the results of defence research projects, or the specific IPR rules that allow Member States that commit to a follow-up research project to get access to research results under certain conditions. These rules aim to ensure that results of defence research actions do not end up on the shelf, but are taken forward. This is fully in line with the objectives of the EDF that aims to support, in a single programme, research and development actions from low TRL levels, including disruptive technologies, to the prototype stage.

Furthermore, the results of the calls for proposals for the Preparatory Action are quite satisfactory. We received a substantial number of proposals, some of which submitted by consortia composed of a large number of companies, RTOs and SMEs. We had similar positive and encouraging results from the first round of calls for proposals published under the EDIDP. This demonstrates that these programmes actually contribute to better cooperation between Member States. On the basis of the experience acquired with the Preparatory Action and EDIDP and the cooperation of all actors involved - Member States, EDA and EEAS - we are confident that EDF will be a success.

"The time of purely national approaches is over"

The launch of EU tools for enhanced defence cooperation was a first indispensable step towards a more integrated, coherent and efficient defence landscape in Europe. The required next step, equally important, would be that decision-makers and defence planners in the Member States embed and make use of them in national planning processes. What is needed is nothing less than a change of mindset, a culture change.

We sat down with representatives from three European Defence Agency (EDA) Member States – Austria's Defence Policy Director **Major General Johann Frank**, Greece's National Armament Director **Vice Admiral Kyriakos Kyriakidis** and France's National Capability Director **Major General Eric Charpentier** – to hear what impact the EU defence initiatives have already had on their national defence planning.

Major General Johann Frank,
Defence Policy Director, Austria

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Vice Admiral Kyriakos Kyriakidis,
National Armament Director, Greece

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Major General Eric Charpentier,
National Capability Director, France

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What in your view is the biggest added value of the new EU defence cooperation tools in general and for your country in particular?

After having discussed possible tools for years, it is good to see those ideas now being put into practice. For Austria, it is especially important to see EDA in a managing role when it comes to implementing the Austria-led CBRN project. In general, one of the biggest benefits for the EU and individual Member States is the possibility to increase cooperation, coordination and transparency in defence development among Member States, as well as providing a benchmark for cooperation in the context of PESCO. The whole process is stimulated by a political/high-level debate, with the clear aim to do more in security and defence, financially incentivised by the European Defence Fund. Cooperation and coordination are the corner stones of this EU-initiated approach in the development of defence capabilities, investment in joint projects and the improvement of the operational readiness of the EU. We think the work on these initiatives is progressing well.

By setting-up a scene of incentives, commitments and processes, the EU defence cooperation tools have prepared the ground for the progressive cultivation of a common approach toward defence matters, assisted by the establishment of a consistent and effective maturation chain of related technologies towards capabilities. A key element behind that process is the early involvement of the general staffs, being the end users in interaction with industry and RTOs.

Regarding Greece and having in mind the country's geographical location, security and defence challenges are constantly high in the national priorities. Nevertheless, due to the size scale, resource and other constraints, the derived prioritisation leads to a limited MOD's research and development effort, compared to its armament requirements, but also compared to the actual skills and competences of the domestic technological and industrial base. That is precisely the opportunity offered by the EU cooperative initiatives. As a member of the European family, Greece intends to take advantage of the offered resources and shared experience in order to establish the appropriate governing structures, regulative framework and associated processes to foster the domestic RTOs and industrial ecosystem to demonstrate its best as part of the EDITB.

In my view, these new tools have two main benefits. First and above all, I think they have enabled the establishment of a coherent capability process. This process aims at satisfying clearly identified military needs so as to reach political objectives defined by the global strategy. In that respect, this mechanism ensures that developed capabilities will always comply with EU ambitions. Furthermore, tools such as PESCO or EDIDP have already encouraged a very efficient cooperation between Member States. This unprecedented and tight cooperation contributes significantly to tackling the capability deficit which we have to fill. Beyond, it helps with fostering a common approach to shared issues, be they operations- or capability- driven, or a shared strategic analysis. By doing so, the effects will make Europe stronger and consequently consolidate NATO. I am therefore convinced that cooperation is the key! In France, this process has clearly enabled us to think more collectively and more specifically the idea of European defence. In fact, tools such as PESCO or EDIDP have already shown tangible results. I noticed that these first results triggered further fruitful discussions within the French Ministry of Armed Forces, thus feeding again this great project. Let us keep up the good work! Our efforts will soon provide us with military capabilities that will make the difference on tomorrow's battlefield.

To what extend have the tools already made an impact on the way defence capability planning and development is handled in your MOD?

For Austria, being a non-NATO EU-member, CSDP is the most important framework for our security policy. Therefore we demonstrate high participation in CSDP related projects. For example, Austria is currently participating in 8 PESCO projects. Right from the beginning, we participated actively in the different defence initiatives such as the Coordinated Annual Review on Defence trial run (CARD), the strengthening of the Military Planning and Conduct Capability (MPCC) by providing additional staff personel or in various PESCO, especially the one led by Austria (CBRN SaaS) and in the development of the scenarios within the framework of the Headline Goal Process. The Capability Goals derived from this process are directly transferred into the Austrian MoD Capability Planning Process. The Requirements Catalogue feeds into the further development of the Austrian Concept for Missions Abroad that defines the national ambition and necessary capabilities for Austria's participation in international crisis management. All the different EU defence initiatives, especially the PESCO projects, are reflected in our national defence planning.

The Hellenic MoD is actively involved in the EU initiatives from the early stages of deliberations and related decision making. At national level, specific actions have been taken to raise awareness and inform interested parties within the MoD, other competent authorities as well as industry and academia. The General Staff took the initiative to prepare PESCO project proposals while special attention has been paid by GDDIA to ensure the defence industry is ready to participate in the EDIDP as the test bed to the future EDF. To succeed with all these novel tasks a number of customised ad-hoc processes has been approved which will eventually lead to the adaptation of the defence capability planning and development procedures to the new realities. The outcome at this stage is considered notably satisfactory: Greece leads five out of the 47 current PESCO projects while it is involved in another 14 as participant or observer. Furthermore four Greek led EDIDP project proposals have been submitted responding to the initial 2019 calls in cooperation with Cyprus, with two of them being under the PESCO context. Overall, it has to be stressed that there is a strong will and commitment of the political and military leadership to face the challenges and move forward for the sake of our shared European vision.

I can say that European cooperation in capability planning and development, more powerful now with the new tools, has become a priority for France. Cooperating enables us to respond to national requirements while contributing to EU's strategic objectives.

The Future Combat Air System (FCAS) perfectly underlines my point. Three Member States - Germany, Spain and France – cooperate in order to develop a future 6th generation combat aircraft. It is obvious, that if these three Member States benefit from the capabilities of this weapon system, the EU will do so, too. We have learned to be more inclusive, and this has helped us deepen our reflection on the combat cloud as an example, which is tomorrow's main challenge. With this conviction, France has decided that 35% of the capabilities scheduled in the current Military Programming Law will be developed in cooperation with partners. This dynamic development, mostly driven by EDA, has led us to partnerships with Member States we had not often collaborated with before. The multilateral approach appears very valuable, it fosters cohesion and thus enables even more efficient cooperation. Moreover, I would like to emphasise that a fruitful cooperation, especially if it is pushed by the EDF, will for sure strengthen the EDTIB.

Finally, capability co-development appears to be a very efficient driver for improved interoperability between the European armed forces. I am convinced that a strong EDTIB together with coordinated DoDs and armed forces capable of operating jointly will enable the EU to realise its ambition. The new capability development tools will be very helpful in this regard.

Which, in your view, are the biggest challenges and hurdles to overcome in order to make the EU defence tools work and achieve their full potential?

The EU defence industry still remains nation-oriented and fragmented. This results in unsatisfactory cost structures, disadvantages in international competition and thus potentially higher burdens on our defence budget. The national orientation can also lead to a lack of interoperability of the armed forces in Europe in joint operations. It is therefore necessary to jointly plan, develop, procure and provide military capabilities and increase the interoperability of the armed forces in Europe in order to further improve Europe's capability to act. An active integrated management will be required in order to ensure the sustainable implementation and coherence of the EU defence initiatives. The HR/VP and Head of EDA has to play a crucial role in that. The objective should be to coordinate the instruments in order to achieve the best possible results. This requires, in particular, a strategic approach for a common and coordinated European military capability development, early information sharing at political-strategic level and early EDA involvement in a strategic planning process as well as the harmonisation of defence procurement cycles. A sufficient degree of EU-internal transparency is a prerequisite for ensuring coherent implementation. Although the current toolset is beneficial, it also adds an additional layer of complexity. This is particularly true for the current annual PESCO cycle. We should reflect upon the suitability of the annual call for new PESCO initiatives in favour of properly implementing what is already in the making and analysing/implementing lessons from what has been achieved so far. This is of particular relevance in view of the ongoing discussions about the main capability and technology areas that are to constitute the core of the upcoming EDF. In this regard, Austria would welcome more collective efforts on concept development to stimulate thinking about future EDF priorities and projects.

The biggest challenge is the development of trust as key to incentivise and thus unlock effectiveness along the complex network of cooperating actors including EU bodies, industries, governments and military staffs. First of all, the general staffs need to be convinced that cooperation is still, if not more, effective for fulfilling their own targets and that EU funded R&D will contribute to fit for purpose capabilities that will not be industrially imposed. This is important in order to justify the required extra burden in manpower and adaptations. On the other side, SMEs require evidence that the EDF funding will not be spent to make traditional players stronger, irrespective of their potential. EU bodies have to demonstrate their ability in effectively coordinating and facilitating defence cooperation and also in handling the development of the defence technological and industrial base with the appropriate attention and sensitivity. And then, governments need to establish confidence that the common priorities, policies and actions will cover the national security and defence interests and will reinforce domestic capacity development. Above all, European citizens have to be convinced that the CSDP and the associated defence tools provide them with better security and defence no matter where they live and what they face.

It is an interesting bet. It requires focus, patience and persistency to gradually change the stereotype beliefs and the traditional mindsets.

In my view, the time of purely national approaches is mostly over. This new paradigm guides our reflections. It is necessary to reconsider sovereignty in order to be able to collectively agree on common specifications and express converging requirements. These necessary efforts will ensure the inclusive nature, which drives the European capability development process. Its efficiency depends on these efforts.

In this spirit, eight states driven by an unprecedented cooperative dynamic joined forces within OCCAr to realise the A400M project. Their ability to reason on a supranational level explains the success of this innovative programme.

In this way, it seems essential that EDA keeps playing the role for which the Agency was created in 2004. To me, this intergovernmental entity appears as the perfect forum for cooperation. For 15 years, in the name of its Member States, EDA has inspired, coordinated and managed many successful capability projects. In this regard, the Agency gives Members States the possibility to influence projects. We should never forget that only states can order, procure or use military capabilities! They alone bear the political cost of the legitimate use of force. We must therefore ensure that the new Directorate General for Defence Industry and Space within the European Commission provides the expected added value, without generating imbalances with Member States.

Leveraging the EU's New Defence Tools

European defence took a qualitative step forward by unveiling new defence initiatives such as CARD, PESCO, and the EDF. Presently, the emphasis is on fully implementing these new initiatives while strengthening their overall coherence. Looking ahead, policymakers should keep in mind three factors to maximise these tools' respective contributions towards a stronger and more coherent European defence, says **Dr. Gustav Lindstrom**, the Director of the EU Institute for Security Studies (EUISS), in the following analysis for *European Defence Matters*.

European defence has undergone several important evolutions since the establishment of the Helsinki Headline Goal in December 1999. At that time, the focus was on achieving specific quantitative goals with respect to military (and later on civilian) capabilities. Among the better-known goals was to be able to deploy 50,000-60,000 personnel within 60 days for a distance of up to 4,000 kilometres. Over time, the EU entered a second wave prioritising qualitative dimensions and establishing specific support bodies. Through the Headline Goal 2010, the emphasis shifted towards qualitative aspects such as achieving greater interoperability, sustainability, deployability, and other related objectives among European forces.

In 2014, a third wave of European defence commenced in the aftermath of the European Council 'defence matters' Summit held in December 2013. Trademarking this third wave were numerous defence initiatives aiming to intensify links across capability requirements, boost transparency among national defence policy plans (through CARD), and promote collaborate defence projects (PESCO) – all while introducing a new financing option (EDF). Besides strengthening European defence, these current initiatives serve to decrease industrial fragmentation and capability duplication.

European Defence 3.0 – Sustaining the momentum

Leveraging this third wave will require attention to at least three issues. The first, and probably most crucial, is to consider amplifying the prominence of one of the four 'elements' that serve as the foundation of the Capability Development Plan (CDP). Presently, the CDP process examines four perspectives: 1) current CSDP shortfalls, 2) lessons from CSDP operations, 3) Member States' defence plans and programmes, and 4) the long-term capability trends - recognising technological developments and changes in the security environment.

It is the last component, the examination of disruptive technologies and the security context from a longer-term perspective, which is increasingly critical to defence planners and policy makers – especially given how quickly the security landscape can change. Already now, we can discern how developments in areas such as the Internet of Things, artificial intelligence, robotics, nanotechnology, biotechnology and quantum computing might be employed via hybrid means. As countries and societies move towards 'smart cities', 'smart grids', and 'smart logistics' to name but a few, vulnerabilities and challenges will materialise in ways previously unseen – requiring new strategies, capabilities, and tactics.

From a different vantage point, trends in other (non-technological) areas such as climate change and urbanisation are also likely to impact defence requirements in ways unseen. For instance, the effects of climate change spread unevenly across the globe. They are more notable in the Polar Regions and along central geographic belts – affecting Africa and Asia in particular. As a result, some countries across those continents may suffer more from challenges associated with food security, health security, water security, or megacity governance to name but a few. These in turn will have implications for European defence, especially concerning its contribution towards the integrated approach and capability development.

Overall, these trends place a greater premium on more wide-ranging and frequent examinations of global and technological trends over the next five to ten years[1]. Such reflection should largely inform the CDP process, helping to identify future force requirements and new types of operational needs. It is encouraging that the capability development priorities approved in June 2018 include cyber responsive operations and innovative technologies for enhanced future military capabilities (under the heading cross-domain capabilities contributing to achieve the EU's level of ambition). Guiding the practical implementation of these priorities are the Strategic Context Cases endorsed on 27 June 2019, which guide the 11 European capability development priority areas over the short, medium and long-term horizons up to and beyond 2035. Going forward, such reflections should ideally have ample space to guide future revisions, including with reference to the Overarching Strategic Research Agendas used to identify

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research and technology priorities and the Key Strategic Activities for industrial manufacturing capacities.

As European defence efforts evolve, a second area likely to require additional attention is the degree of EU/NATO synergy. The need for continued EU/NATO collaboration is well known, anchored on the understanding that Member States' have a single set of forces that they can employ in different frameworks. Currently, there are systematic exchanges concerning the new instruments (e.g. CARD and PESCO) with NATO processes such as the NATO Defence Planning Process. These exchanges serve to facilitate common prioritisation while minimising unnecessary duplication.

Looking ahead, however, there may be a need to seek synergies even further upstream, including at the strategic level. A possible starting point, while recognising the different nature of the two organisations and their responsibilities, might be to increase EU/NATO exchanges when either organisation enters a process to update or release new strategic guidance documents such as the EU Global Strategy or NATO's Strategic Concept. To date, there were limited opportunities to do so, recognising for example that NATO's current Strategic Concept dates back to 2010 ('Active Engagement, Modern Defence'). Of particular value would be joint EU/NATO exchanges on the evolving global security environment and its implications, especially in light of the 74 EU/NATO common actions.

Lastly, steering European defence forward over the longer term might benefit from a joint vision or guidance document beyond the Headline Goals or PESCO binding commitments. While there are many calls for a White Book or its equivalent, an easier starting point might be to revive the long-term vision (LTV) process. In 2006, the European Defence Agency (EDA) released the Long-Term Vision report based on collaborative work across EDA, the EU Military Committee, the EU Military Staff, the EUISS, and EU Member States. NATO's Allied Command Transformation as well as the defence industry likewise provided input into the process. The LTV served as a compass for defence planners with respect to capability requirements with a 20-year horizon, just as the EU Global strategy currently guides EU external action. Specifically, the LTV provided an overview of the global context, the specific challenges for defence, as well as the implications for capability development and military contributions on the ground. Besides communicating an understanding of future capability requirements, the exercise in itself facilitated discussions across a wide range of defence and security-related stakeholders. An enlarged LTV-process could eventually provide the initial groundwork or support for a future White Book or other strategic guidance document concerning European defence.

Conclusion

The EU has progressively advanced when it comes to European defence. This will continue as we await the completion of the first full CARD cycle report in November 2020, a strategic review of PESCO at the end of its first phase in 2020, and a new call for PESCO projects in 2021. These processes, while representing a critical component of the European defence picture, are a 'means to an end' – supporting the EU's evolving role as a security actor and partner. Other pieces of this puzzle, which over time should increasingly help anchor the new defence initiatives, include Europe's vision of the evolving global landscape and its security implications, its levels of security collaboration with likeminded partners, and its selected posture as a global security provider – especially as it develops concepts on cooperative autonomy.

[1] For some reflections on this, see *'Exploring Europe's Capability Requirements for 2035 and Beyond – Insights from the 2018 update of the long-term strand of the Capability Development Plan'*, EDA, June 2018.

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Strategic autonomy more coop less rhetor

The goal of strategic autonomy in defence, put forward in the EU's 2016 Global Strategy, has sparked a somewhat abstract debate, often fueled by doubts and fears, on what it means in practice and how it would impact NATO and the transatlantic relationship.

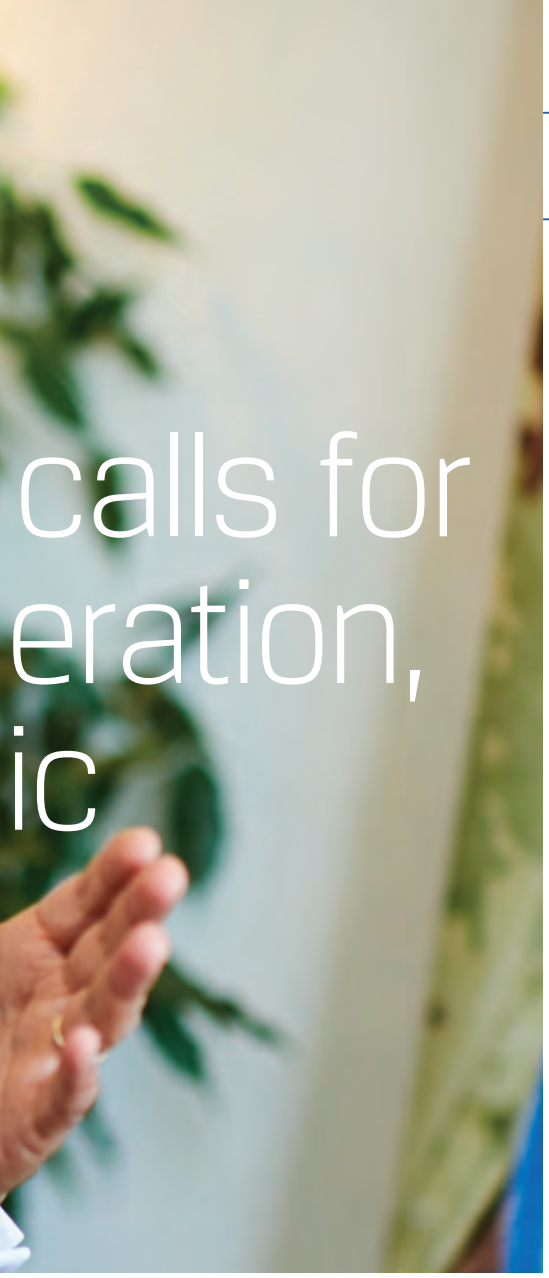
In the following article, the European Defence Agency (EDA) Chief Executive **Jorge Domecq** argues that strategic autonomy is too important an ambition to be flogged to death in endless theoretical talk on its end-goal. What counts, he says, are practical steps allowing the EU to move closer towards this goal.

It is time we Europeans, but also our transatlantic partners, approach strategic autonomy in a more constructive spirit and with pragmatism. Strategic autonomy has to be looked at as a positive endeavour, not something directed against NATO, the United States or anybody else.

In fact, it's about putting EU Member States in a position where they can autonomously develop, operate, modify and maintain the full spectrum of defence capabilities they need. It's about giving EU Member States the option and ability – technological, industrial, operational, political – to be able to take military action whenever needed to defend its values and interests, either together with partners (notably NATO) wherever possible, or separately if required.

This ambition was strongly reiterated last June when the European Council agreed on the EU's New Strategic Agenda 2019-2024 which highlights the need to pursue a strategic course of action and increase the EU's capacity to act autonomously. Therein, Member States' Heads of State and Government insist the EU takes more responsibility for its own security and defence, in particular by enhancing its defence investment, capability development, technological expertise and operational readiness.

Instead of undermining transatlantic trust and security, as some fear, a more robust and autonomous European defence will ultimately lead to a stronger NATO. It is in the



> "EU strategic autonomy is not just around the corner, but not unattainable either"

interest of our transatlantic partners to have a more capable and efficient EU in defence.

The US wants Europe to take its fair share of burden in defence? A stronger and more credible European pillar in NATO will contribute to that.

Ambition and action

The EU's ambition, as stated in the 2016 Global Strategy, is to reach "an appropriate level of strategic autonomy" in order to "ensure Europe's ability to safeguard security within and beyond its borders". However, it takes more than ambition and political will to get there.

Strategic autonomy presupposes at least two things. First, that our Member States' armed forces have at their disposal the full spectrum of military assets that, taken together, could enable the EU to take military action and on its own, if necessary. Second, that the functionality and usability of these assets are not restricted by any technological or political caveats controlled by non-European actors.

Today, admittedly, this is not the case. Hence the need to invest more, and better, in defence. The good news is that we are moving in the right direction, both in terms of 'more' and 'better'.

Spending & planning

Spending figures are there to prove that more is already being done: EU Member States consistently increased their defence budgets in 2018 and 2019. By 2020, the vast majority of Member States also intend to increase to 20% the share allocated to defence investment.

But more spending does not automatically guarantee more efficiency or interoperability.

To achieve that we must plan and invest better, through cooperation: from joint priority setting to the development, procurement and deployment of cutting-edge defence capabilities. Over the past two years, we put in place an end-to-end defence planning framework at EU level with the Capability Development Plan (CDP), the Coordinated Annual Review on Defence (CARD), the Permanent Structured Cooperation (PESCO) and the European Defence Fund (EDF).

Prioritisation is the foundation stone on which all subsequent steps must build, and it is already in place: the CDP, developed through the Agency and revised in 2018, lists Member States' joint priorities for the years to come. One of them targets cross-domain capabilities that can contribute to strategic autonomy.

Using the priorities as a compass will ensure efforts and funding are spent on assets that are really needed and contribute to making EU Member States, as a group, more efficient and coherent in military terms. The CARD will help keep the focus on agreed priorities.

This being said, the proof of the pudding is in the eating: cooperation must lead to projects which must produce a tangible outcome, i.e. usable defence capabilities.

Several cooperation platforms are available, including EDA, which, since its creation in 2004, has gained robust expertise and track-record in initiating and managing collaborative capability programmes. PESCO, a first-choice framework for cooperation for the 25 participating EU Member States has been put in place. These Member States have taken binding commitments, inter alia to increase their engagement in collaborative projects and use of EDA as the European forum for joint capability development.

In PESCO, Member States should therefore be bolder and collaborate more on assets and capabilities directly focused on having a real impact on the European capability →

Air-to-Air Refuelling is a strategic domain in which Europe still lacks capabilities

landscape, thereby inspiring strategic autonomy. However, today, not all PESCO projects put forward have genuine strategic clout; moving forward CARD will ensure they will. Finally, the EDF must serve as a potential financial incentive and reward projects relevant for this.

Knowledge, skills, capabilities

To achieve strategic autonomy, the EU must also be able to master cutting-edge technologies and their integration into defence products. That's why it is so crucial that it acquires, maintains and develops the technological knowledge and industrial manufacturing skills required to produce the defence equipment it needs.

Those *Key Strategic Activities* have to be preserved and strengthened if we want to turn the goal of strategic autonomy into reality.

EDA, which is the EU hub for defence innovation and collaborative capability development, has been involved in this critical work since several years. At the Agency, we identify critical research areas and other key strategic activities underpinning the EU's strategic autonomy. The aim is to identify, and then support, 'must-have' technologies and industrial abilities without which strategic autonomy isn't possible.

Artificial intelligence (AI) is only one example of such critical disruptive technologies that

> "We must plan and invest better, through cooperation"

are reshaping defence. Although Europe still has a leading edge in AI (behind the US but ahead of China), it must raise its game to remain relevant. EDA also does its bit: the Agency's network of research experts explores potential AI applications in defence to help industry develop them into usable military capabilities.

Besides that, there is a plethora of new technologies and components which, if fully mastered by our researchers and manufacturers, can contribute to building Europe's strategic autonomy.

Gallium Nitride, for example, has been identified as a crucial component for satellite communications and various defence applications, such as radars. Member States invested some €100 million over 10 years through EDA to develop a complete European supply chain, helping to keep related skills and business in Europe. System on chip (SoC) and field-programmable gate array (FPGA) technology is another example. As military operations get increasingly digitalised, Europe must have capacities based on technologies such as advanced signal, digital processing (data fusion, big data, deep learning) and encryption.

Here too, Member States started investing through EDA, €25 million, with more to come. In the satellite communication domain, EDA is helping governments develop a common, European solution to better protect governmental and commercial SATCOM systems, for instance against jamming. Another example is air-to-air refuelling (AAR), a strategic enabler for military operations. As the future of AAR lies with automation, EDA works on harmonising the operational requirements to guide industry and help governments make the right investments.

Defence cooperation is not an option but a necessity for strategic autonomy. It's through concrete action in defence spending, planning and technologies - not political or academic rhetoric - that we can progress towards it. At the same time, we must of course ensure coherence and avoid any unnecessary duplication with NATO which continues to be the cornerstone of collective defence for its members. This is not in question.

EU strategic autonomy is not just around the corner, but not unattainable either. The closer we get to it and the more additional defence cooperation it triggers, the better. We will be more able to stand up to our defence commitments, including, as regards collective defence with our allies.

From modest beginnings to multiple initiatives:

EDA's growing role in cybersecurity

The European Defence Agency's (EDA) evolutionary role in matters of cybersecurity largely mirrors that of government and business in general. Ten years ago, the subject was almost exclusively the concern of IT specialists and backroom operations.

Since then, the criticality of cyber networks – and how much the modern world depends on their proper functioning – has been driven home to all, from the ordinary consumer to the highest-level policymaker. Whether civil or military in nature, cybersecurity today extends far beyond the backroom to encompass training at all organisational levels, focused exercises, research and development of advanced cybersecurity tools and processes, coordination with auxiliary stakeholders and, not least of all, creative approaches to deploying society's limited resources against virtually unlimited cybersecurity threats and attempts at subterfuge.

In one way or another, EDA has been a player in all these areas, be it cyber training and exercises, research and development, optimising resources among its Member States or outreach to stakeholder groups. For example, the latter activity – outreach – has been a particularly important EDA activity to facilitate the exchange of technical information and lessons learnt among Europe's front-line organisations involved in fighting or defending against cyber-attacks.

Multi-player cooperation

A good example of EDA's outreach is its May 2018 Memorandum of Understanding (MoU) with three other EU organisations involved in cybersecurity: ENISA (cybersecurity), European Cyber Crime Center (EC3)/Europol (law enforcement cooperation) and CERT-EU, the Union's computer emergency response team for EU institutions. The MoU's purpose is to leverage civil and military synergies among the players to boost the safety and security of the cyberspaces in which they all operate.

At their most recent meeting in July 2019, the MoU partners reported significant progress in the exchange of views and knowledge regarding the policy, technical, and operational aspects to cybersecurity. Their shared 'collaboration roadmap' calls for closer cooperation on training and cyber exercises, capacity building, stronger information exchanges and, of course, ways to avoid duplication of effort. They will stage another major event in the second half of 2020, to carry forward these issues, along with a special focus on improved incident-response mechanisms.

Another example of EDA's cooperative approach to cybersecurity is its participation in research and development. Aside from the R&D projects that it funds on its own or organises among its Member States *(see box below on CySAP project)*, EDA is involved in several EU-funded cybersecurity research projects.

A trio of projects are cases in point. Each of the projects was launched in February 2019 as a pilot to test the viability of the EU's forthcoming European Cybersecurity Competence Network. The network will facilitate the EU's support and retention of the cybersecurity technological and industrial capacities needed to secure its digital single market. Though the legislation is still being drafted, the main goal is to create a cybersecurity competence centre by 2021 which will coordinate the EU's funding for research, as distributed via the network to national entities.

The three research projects are CONCORDIA, ECHO, and CyberSec4Europe. Within each, EDA has a supporting role vis-à-vis their advisory board regarding the project's dual-use or military cybersecurity potential. Given that a vast swathe of software and cybersecurity measures lend themselves to either civil and military application, it makes eminent sense to involve EDA in the network in observation/advisory mode to keep an eye on innovation that could benefit Europe's militaries.

The reliance of Europe's militaries on cutting-edge cyber technologies is so important that these have been incorporated into the recent work by the Agency and its Member States on capability development. Known as Strategic Context Cases (SCCs), these scenarios were approved in June 2019, and will transfer their releasable versions to industry in November.

One SCC is based on cyber and contains five modules: cooperation; education and training; research and technology; land, air, maritime and space operations; and finally, systems engineering for cyber operations. Regardless of its subject focus,

Cyber situational awareness for commanders

It is a truism that a modern military's core operations depend heavily on digital technologies, from command-and-control (C2) of weapons systems to the surveillance and analysis of battlefield conditions to logistics and other support services.

Indeed, the need for cyber-awareness blazes several paths within an operational headquarters. One leads to the situational status of a commander's assets and battlefield space; another indicates the attacks against an HQ's digital networks and systems; and yet another points to the decision-support data required for an HQ's overall cyber-operations. Together, these demand an all-seeing cyber-situational awareness based on a specific architecture of hardware and software services.

EDA's 'CySAP' project aims to do just that. Launched in early 2019 and led by Spain with partner countries Germany and Italy, its goal is to develop a prototype architectural design for a fully-fledged C2 system for cyber operations.

The group is not starting from scratch, however.

"We defined these requirements as early as 2013 and then went to the marketplace to see what was available," said Wolfgang Roehrig, EDA's Head of Unit for Information Superiority. "There are a lot of situational awareness packages out there for cyber-centres but these tend to be made for the technical side of things and not for the needs of high-level decision-making. Nothing really exists in terms of cyber operations planning and its implementation for, say, a maritime operation and the needs of its commander for decision-support on countering cyber challenges."

Working with their respective industries, the three countries will strive to produce a technological package that includes cyber-intelligence, real-time war-gaming operational options and other features. Of special interest will be the package's potential use of artificial intelligence. "We expect a lot from AI in this area," observed Roehrig.

The CySAP team will have to move fast, given that it aims to develop the architecture in only 18 months – by summer 2020.

however, each of the SCCs is designed to operationally frame the short-, medium- and long-term capabilities that Europe's militaries need to consider, and how to develop them.

Pooling cyber-ranges for resilience

One of EDA's most ambitious undertakings is its stewardship of the following: the "Cyber Ranger Federation" (CRF), an 11-nation project to knit together their respective national cyber-ranges into an integrated system for real-time training and exercises in simulated operational environments. Such an objective requires massive amounts of computing power and, just as important, a careful parsing of digital labour regarding who simulates what in order to collectively create realistic cyber-training scenarios.

"Very few national ranges have the ability to realistically simulate all the threats and the assets to protect and the defensive measures needed to protect them," said Mario Beccia, EDA Project Officer for Cyber Defence. "Thus, it makes sense to bring these together into a single network where you feed out a slice of the scenario to each partner, and then bring it all together at a designated time for a complete training environment. The idea was also to enable any military or civilian government entity that interfaces with EU institutions to use it as well."

Composed of three layers of technology – a hardware/software architecture, management software services, and the content of its training and exercises – the CFR network put on its first major demonstration in Helsinki in November 2019.

Though the project is scheduled to end in March 2020, EDA is working with its Member States to launch a second three-year phase to create new standards and protocols to enable all the network participants' services to talk to one another. Among other advantages, this could lead to much faster simulation set-up times and a wider range of things to be simulated, thus helping boost Europe's overall protection and resilience to cyber-attacks.

Live demo: Pooling & Sharing of cyber ranges

On 6 November, as part of the afore-mentioned Cyber Ranges Federation project, EDA and the Finnish Ministry of Defence jointly organised a multinational demonstration exercise in Helsinki attended and supported by experts from several contributing countries (Finland, Estonia, Sweden, Latvia) as well as the European Space Agency (ESA). The live demonstration allowed participants to showcase the practical implications and benefits of connecting and jointly using Member States' cyber ranges in order to improve and expand each one's cyber training capabilities.

Practically speaking, the event consisted of a live fire exercise, based on a fictive but realistic training scenario, in which one team had to respond to and defend itself against cyber-attacks from another. The exercise used SD-WAN technology as the backbone network technology. The participating national cyber ranges as well as those provided by ESA were all interconnected and interacting in real time, with each of them having its own particular role to play in the exercise.

The demonstration event was part of the European Union's combined Cyber and Hybrid Week held under the auspices of the Finnish EU Presidency. "There probably isn't a domain from which more new security threats are emerging than from cyber. Therefore, stepping up our common cyber defence is a matter of priority and urgency, as it is also reflected in the revised European Capability Development Priorities approved last year. By Pooling & Sharing their national cyber ranges, participating Member States will be able to improve their joint training conditions and, as a result, strengthen their cyber resilience. This successful exercise has shown that we are on the right path", said Jorge Domecq, EDA's Chief Executive.

Fueling joint capability development:

EDA's Cooperative Financial Mechanism

One of the historical barriers – and there are still too many – to collaborative multination defence programmes in Europe has been the lack of budgetary synchronicity between the EU's Member States. The Cooperative Financial Mechanism (CFM) stands now ready to mitigate this problem.

Mismatching budgetary cycles or provisional gaps in

One nation's annual defence budgetary cycle might end with the calendar year while its neighbour's starts earlier or later. As a result, several countries can be ready to launch a programme but others cannot do so until money is approved or available. This often leads to launch delays or a reduction in the number of participants in a given programme.

Another impediment to collaborative efforts is the use-it-or-lose-it pressure on a defence ministry (or any other ministry, for that matter) to spend any unused money by cycle's end for fear of seeing its budget reduced the following year. This leads to unnecessary spending and hasty decision-making.

Whether the problem has been cyclical disparity or lack of funds, both play havoc with a defence ministry's ability to forecast and plan for collaborative defence capability development. These two issues are about to be mitigated, however, by the European Defence Agency's (EDA) Cooperative Financial Mechanism (CFM), which should get off the ground in early 2020.

"The Agency's role is to promote and incentivise collaborative defence capability development in Europe and to help create the right conditions for that. The CFM adds a very powerful instrument to our toolbox," said Jorge Domecq, EDA's Chief Executive. "In future, mismatching budgetary cycles or provisional gaps in funding should no longer exclude Member States from participating in multinational programmes".

So far, 11 EDA Member States have declared their intention to sign the CFM: Belgium, Bulgaria, Cyprus, France, Greece, Hungary, Lithuania, Netherlands, Portugal, Slovenia and Spain, with another five (Germany, Italy, Malta, Poland and Romania) expected to join in the coming months. Once all their national parliaments have ratified their participation, the CFM is expected to enter force during the first half of 2020.

First proposed by the Agency to its Member States in November 2016, the CFM has been designed to support any type of collaborative effort, whether research and technology/development or for a capability's acquisition phase. It will have a unique structure, with two innovative sources of finance to enable the smooth launch of multination capability projects and programmes.

European Investment Bank

The first will be an unprecedented line of credit to be opened by the European Investment Bank (EIB), the EU's infrastructure lending arm. Following calls from the European Council to step up its support to the defence sector, the EIB launched in December 2017 its 'European Security Initiative'. Worth EUR 6 billion over three years, this credit line will provide co-financing of up to 50 percent for eligible national or collaborative R&D projects and defence programmes. Moreover, the EIB signed a Memorandum of Understanding with EDA in February 2018. This foresees that the Agency will support the bank by assessing defence-related projects, or sub-work packages of a given project, against the EIB's lending policy. In other words, the Agency will provide advice and technical expertise to the bank to help it assess a project's eligibility for EIB lending.

The EIB's participation represents a sea-change in the bank's lending mandate,

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funding can seriously hamper collaborative programmes.

which has traditionally steered it around any defence-related projects. But the bank's new policy shift is a recognition by policy-makers of the urgent need to support dual-use technology development in Europe. *(See EIB interview, page 37).*

State-to-state lending

The CFM's other pillar is all the more surprising for its ground-breaking nature. It will entail state-to-state lending – be it end-of-cycle budgetary resources or fresh money – between national Ministries of Defence for collaborative projects.

"This was a very sensitive thing to pull off, for several reasons," said Fabio Liberti, EDA Policy Officer for Strategic Analysis. "First, we had to persuade national finance ministries to go along with the idea of potentially supporting partners in a way that is compatible with EU treaties and national budgetary legislations. The great novelty embedded within the CFM is the possibility for countries to use funding – either newly committed or unused year-end leftovers – in a multiannual way to support cooperation. Once a Member State decides to contribute to the CFM, its money can stay there from one year to the next without being pulled back into a country's general treasury. That was a major political break-through."

The second area of concern was to frame the CFM's rules in such a way that its lending would not permanently subsidise one or more Member States' participation in a programme or offer any bail-out sources of finance. Its operating principle is tide-over lending for launch and programme participation. That means loans will have to be repaid among the Member States and cannot substitute for spending elsewhere that a Member State would otherwise have to do anyway.

To further keep that principle on track, inter-state lending will only take place between a lender and borrower country where both are involved in the same collaborative defence project or programme. Also, a beneficiary CFM country will only be able to request the amount strictly necessary for the project or programme's realisation, with the total sum of the support it receives not exceeding 70% of its contribution.

> "In future, mismatching budgetary cycles or provisional gaps in funding should no longer exclude Member States from participating in multinational programmes"

Individual bank accounts

Putting aside these lending intricacies, the way the CFM will function is fairly straightforward. Each participating defence ministry will open its own CFM bank account where it will decide how much to put there and when it wants to collaboratively lend to another Member State per the latter's formal request for support (RfS).

The Agency will oversee all the accounts and pre-screen the funding requests to ensure they fall within the CFM's scope. It will then carry out the inter-ministry transfers and subsequently monitor developments to ensure that each CFM country fulfils its RfS obligations. It will then report annually to its Steering Board about the CFM's state-of-play from one year to the next.

If the Cooperative Financial Mechanism unfolds as planned, it should offer a trusted platform for inter-state support and outside lending from the EIB in a way that Europe has never before attempted. At the same time, as unused end-of-cycle budgetary amounts from national defence ministries start to accumulate in their CFM accounts, this will increasingly grease the wheels of collaborate programmes and thus begin filling Europe's gaps in defence capability.

There are few situations that are truly win-win in any domain, but if the CFM works as planned it will be one.

"Close cooperation with EDA makes perfect sense"

© EIB

Two questions to...
Alexander Stubb
Vice-President of the European Investment Bank (EIB)

In the current geopolitical context, how does the EIB see its role in supporting EU defence cooperation?

Europe is confronted with a rapidly evolving environment, where disruptive emerging technologies and the pervasiveness of information such as artificial intelligence (AI), robotic, new materials and information technologies are fundamentally changing the character of the security threats and of warfare. These capabilities are increasingly initiated outside of the defence sector. Several jurisdictions (particularly the US and China) have equipped themselves with tools (notably investment funds) to actively identify and invest in the development of such promising technologies, including within the EU, with the associated risks of 'technology drain'.

Meanwhile, while defence spending across Europe has been rising in the last four years, research and technology as a percentage of total defence spending has been steadily decreasing. Lack of access to suitable financing solutions allowing to better synchronise joint resources is seen as one of the major impediments to the launch or implementation of defence-related cooperative projects.

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 research, development and innovation (RDI) for dual-use technologies, cybersecurity and civilian security infrastructure.

Last year, EIB and EDA signed a MoU designed to strengthen their cooperation. Where do you see the biggest potential?

Despite a certain degree of consolidation at the level of large players, the EU defence industry is fragmented. This also affects cross-border access to the defence industry supply chains: access for new suppliers, especially for those located in other Member States, remains limited, leading to low levels of cross-border engagement in the defence industry's supply chains. Barriers to the cross-border participation in the supply chains have particularly negative effects on SMEs' participation in the defence market.

In that context, The EIB and EDA have teamed up to support the EU's Common Security and Defence Policy. The objective will be to reap the benefits of the single market for defence by fostering cross-Member State cooperation.

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 Permanent Structured Cooperation, 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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Towards European military diving training standards

Naval forces throughout Europe struggle to maintain a sufficient number of specialised diving teams able and ready to intervene 24/7 in the event of maritime accidents or military crises, let alone deploy them to international operations for longer periods of time. European cooperation, i.e. military diving squads from different EU countries helping out one another or teaming up for common operations, could alleviate the problem. However, this option fails because of a lack of harmonisation in training and equipment standards. the European Defence Agency (EDA) is working towards filling this gap.

Joint diving operations involving different EU Member States' navies are almost impossible because up till now, there are no common diving standards that would even allow a diving team from one country to refill their air tanks from another country's replenishment station – simply because air quality standards vary from one Member State to another. The same applies to navies' operational diving concepts: some operate with having one ship diver in the water on a fixed line and a supervisor to guide him, while others rely on the so-called 'buddy system' where there are always two divers checking each other's safety in the water. Medical standards, training requirements and material also strongly vary.

This has led to a severe shortage in ships and rescue divers which, however, are indispensable assets in every national or international naval operation. While smaller EU countries find it difficult to train sufficient divers on their own due to a lack of resources and training facilities, larger navies' often find themselves overstretched by emergency requests for diving squads after incidents such as the sinking of the Norwegian Frigate *Helge Instad* in November 2018 (after a collision with a merchant ship) or the sinking of the *MS Concordia* cruise liner in January 2012 off the Italian coast.

Naval Training Support Study

To increase interoperability and enable cooperation in this field, EDA's Project Team Naval Training launched a 'Naval Training

Support Study' (NTSS) in 2012, focused on three aspects: navigation training, naval mine warfare, and diving training. The aim of this study, the results of which were presented in 2014, was to provide a landscape of existing capabilities, propose possible common requirements, derive shortfalls based on a gap analysis, and propose recommendations to solve them.

As regards Diving Training, the study made several recommendations, including to establish a doctrine concerning military diving (starting with air/ship diver), to establish a shared diving regulation to meet the operational needs, to standardise training and operational qualification criteria and to have a common certification process for diving centres. A follow-up to the NTSS study (phase 2) was commissioned in 2017 and completed in December 2017. It delivered, among others, a comprehensive set of data and analyses of Member States' national diving standards, a common requirements list for ship divers and minimum qualification standards for military divers. The results were presented to EDA's Project Team Naval Training in January 2018.

EU certified training module for ship and rescue divers

Based on the extended NTSS study and the conclusions of a diving workshop held in La Spezia (Italy) in September 2017, EDA launched a new project in spring 2018 in order to design and conduct a course module to harmonise European ship diving and ship-based rescue diving standards →

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and practices. The overall objective is the identification, recognition and mutual certification of common EU military diving standards.

Showcase event held in Toulon

As part of that ongoing project, and in order to test and confirm the practical implications involved in joint diving training and operation, an EDA 'showcase event' was held on 3 April 2019 in the harbour of St. Mandrier, near Toulon (France). Four diving teams from Germany, Spain, Poland and Romania participated in this exercise, as well as high ranking naval officers from Bulgaria, France, Germany, Spain, Ireland, Poland and Romania. The aim was to conduct joint interventions under real conditions based on realistic naval incident scenarios and to demonstrate how the proposed common standards would successfully work in practice.

As an example: Romanian and Polish divers worked hand in hand to recover an anchor while Spanish and a German diving team jointly inspected a frigate's hull and performed repair work on a pier using heavy underwater welding equipment. The practical part of the event was complemented by a static display of different equipment and procedures ashore.

The in and out of water demonstration of interoperable diving teams from different Member States applying proposed common standards was hailed as a great success by all participants. EDA's Project Team Naval Training was encouraged to continue promoting the identified standards and seek their swift endorsement by EU Member States as a next step.

Participants of the showcase event concluded that the identification of common diving standards is a perfect example of how Member States can strengthen their defence capabilities and make them interoperable at a low cost, for the benefit of everybody. In attendance on the day, Commodore Malone, Flag Officer Commanding the Irish Naval Service, commented that "EU common diving standards will facilitate greater Pooling & Sharing of diving training across Member States, while enhancing interoperability".

Once the standards are endorsed, the next step would be to create a pilot course for ship divers open to Member States' trainees to achieve a common certification recognised in all participating Member States.

PESCO

In the meantime, Bulgaria, Greece and France launched a PESCO project aimed at setting up a 'Deployable Modular Underwater Intervention Capability Package' (DIVEPACK). The objective is to develop an interoperable specialised modular asset for full spectrum defensive underwater intervention operations in expeditionary setting. The DIVEPACK unit will integrate a wide range of diving and unmanned underwater vehicles materiel, operated by qualified personnel, in a comprehensive capability package. Its mission tailorable open architecture 'plug-and-play' concept will facilitate the versatility of response in the framework of EU CSDP operations and will provide a quick reaction capability, applicable to a broad range of underwater scenarios, both at sea and in inland waters.

Furthermore Romania, Bulgaria and France have launched the PESCO project 'European Union Network of Diving Centres' in order to optimise the use of training capacities, harmonise training requirements and course syllabuses.

EDA's 15th Anniversary Ceremony in pictures

On 25 June 2019, EDA celebrated its 15th anniversary with a ceremony in its premises attended by the Head of the Agency, Federica Mogherini, Romania's Defence Minister Gabriel Leş (representing the Romanian EU Presidency), as well as a long list of distinguished guests – including Ministers, Deputy Ministers, State Secretaries, Chiefs of Defence and Ambassadors from its 27 Member States and the four associated countries, the Chairman of the EU Military Committee, Deputy Secretary-Generals of the EEAS, the Director General of the EU Military Staff, European Commissioners and Commission Director-Generals, Executive Directors and senior officials of all EU institutions and agencies, NATO senior representatives as well representatives from the EU defence industry.

A special audience for a special occasion.

FLASHBACK: 15TH ANNIVERSARY

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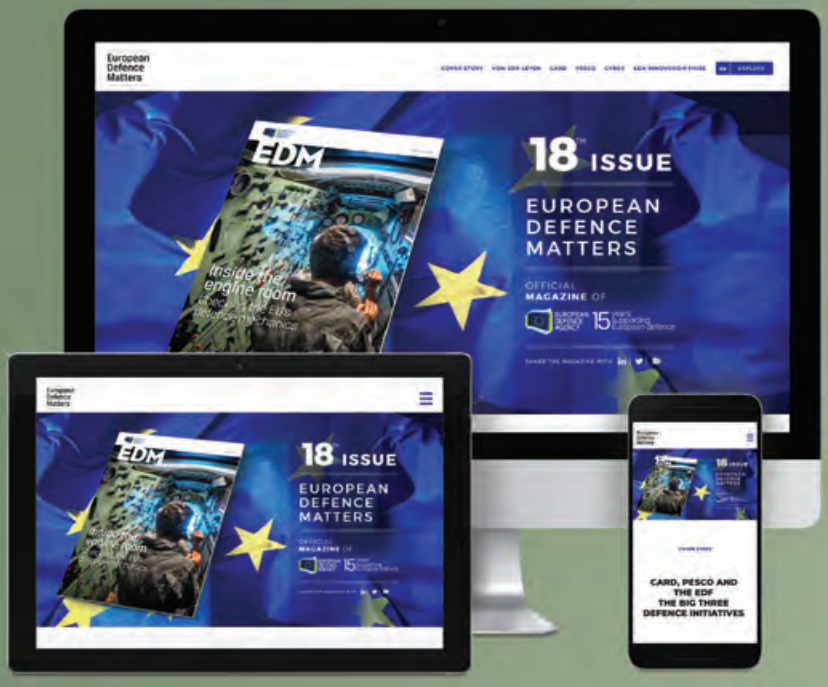

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