

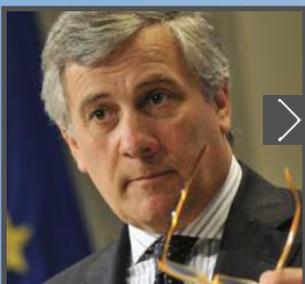
# European Defence Matters

A magazine of the European Defence Agency



Issue 04 2013

## It's decision time for European defence



➤ Commission blueprint for defence

➤ Cyber security work gathers pace

➤ Preserving investment levels in R&T



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This document is published on behalf of the EDA by PMI Media Ltd in the interests of exchange of information

Images: EDA, Airbus Military, iStockphoto, shutterstock, Austrian Air Force, Gorup, ESA

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Catalogue number QU-AB-12-002-EN-C  
ISSN (1977-5059)



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# European defence cooperation: if not now, when?

Introducing common European-wide standards for certifying new types of military aircraft could deliver a reduction of up to 50% in development time and at least 10% development cost (*see page 34, this issue*). The impetus for deeper and wider defence collaboration has never been stronger

**T**hroughout the EU governments are having to continue to make tough choices as they seek to balance spending priorities. They do not, of course, want to be in this position; they understand the need to preserve the security of their citizens at home and abroad, while ensuring they have access to strategic defence expertise which will ensure their sovereign freedoms. But their room for maneuver is small and becoming smaller every year with each budget cut.

According to Catherine Ashton Head of the EDA, speaking at the launch in October 2013 of a report on further strengthening the European Union's (EU) Common Security and Defence Policy (CSDP) (*see page 9 this issue*): "The EU needs to protect its interests and promote its values, and it needs to be able to act as a security provider both in its neighbourhood and at the international level. To be credible, this requires capabilities and a strong industrial base. This is both a challenge and an opportunity."

Europe's military commanders and industries are world leaders but they are in danger of losing technical and operational expertise. "The operation in Libya has a positive story to tell about European leadership, but we also learned that the Europeans lack some critical capabilities," says Anders Rasmussen, Secretary General of NATO (*page 22*). "The main ones are linked to intelligence, surveillance and reconnaissance (ISR). We need observation drones in Europe. We need more air-to-air refuelling capabilities."

The governments of the 27 EDA participating Member

States spent a total of €193 billion on defence in 2011 while the USA spent the equivalent of €503 billion in the same year.

For many nations, understandably perhaps, the threat of a perceived loss of operational autonomy, or sovereignty, which further cooperation implies is still a major obstacle to working more closely with neighbours. But over the last few years Europeans have also become world leaders in cooperating. "Our minesweepers and frigates work in cooperation with the Royal Netherlands Navy in many aspects of their daily lives – training, logistics, maintenance and so on," says General Gerard van Caelenberge, the Belgian Chief of Defence, in this issue (*page 19*). "But when they sail on an operation they do so as Belgian vessels. We have a need to preserve sovereignty, as do all our partners, but we also need to be able to present our political masters with more choices."

The precedents for successful cooperation exist in countless forms in Europe over many years and it would not take a huge cultural shift for new capabilities to be acquired through cooperation rather than isolation. Our new enemies, after all, are no respecters of national borders, nor the demarcation line between one state institution or another. As we report in this issue on how the EDA is working with nations and a wide variety of European institutions against cyber threats: "There is 95% commonality in the threat, regardless of whether the target is military or civil," (*see page 29*).

In the end, these and other threats will have to be met collectively or the fragmented nature of our defences will open loopholes which can be exploited. Why wait? 

# News:

## Pan-European air-to-air refuelling clearance trials under way



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**T**he EDA, Italy and the Movement Coordination Centre Europe (MCCE) have jointly organised the first collective European air-to-air refuelling (AAR) clearance trial on the Italian KC-767. Starting on 5 September, aircraft from France (one Mirage 2000, one Rafale) and Sweden (three Gripens) participated in the campaign to obtain technical and operational AAR clearances for the Italian strategic airlift tanker. AAR is a critical European capability gap and one of the eleven Pooling & Sharing priorities of the EDA. Mandated by EU Defence Ministers in March 2012, EDA is engaged in four work strands in this domain: short-term gap filling; optimisation of existing assets; optimisation of AAR capacity offered by the future A400M fleet and enhancement of Europe's strategic tanker capability by creating a

multinational Multi Role Tanker Transport (MRTT) capability.

"Italy's AAR clearance initiative is a cost efficient way to quickly close an important capability gap regarding tanker-receiver certification; given the urgency based on lessons learned from recent operations, we would have welcomed more nations to participate in the clearance campaign", said Claude-France Arnould, EDA Executive Director.

Technical and operational clearances are mandatory to provide or receive fuel and they are thus a prerequisite to interoperability in multinational operations. Taking place in Italy at Decimomannu airbase from 5 to 12 September, France and Sweden were able to perform the necessary ground and in-flight tests to obtain missing AAR clearances. Today Europe can

deploy 42 tanker aircraft of twelve different types for which more than 40% of required clearances are missing. While for critical requirements and war-time operations clearances limited to a specific operation can be issued on a case by case basis, this campaign allows for a coordinated approach for full and unrestricted clearances. This increases the flexibility of AAR operations and facilitates immediate deployment of assets in future. ◀



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### News in brief

#### Addressing Arctic naval challenges

The EDA, together with the Permanent Representation of Finland to the European Union, in late September hosted a conference on the 'Naval Challenges in the Arctic Region' highlighting the conclusions of a long term analysis conducted by the Wise Pen Team International. Pilvi-Sisko Vierros-Villeneuve, Ambassador and Permanent Representative of Finland to the European Union, opened the



event by underlining the growing importance of the region due to changing circumstances. In her speech, she highlighted that diminishing ice would lead to more activity in the Arctic.

New resources and logistic opportunities were of interest; a European Union Maritime Security Strategy, currently in preparation, would be a key opportunity to address the EU's support to the Arctic area.

Claude-France Arnould, Chief Executive of the European Defence Agency, recalled the growing importance of the Arctic for European security and economic interests, at the same time requiring close attention to be paid to environmental protection. "The opening of the Sea Lines of Communication, the North West and North East passages for example, have required the naval community to focus more on navigational safety, the need for maritime surveillance and maritime security in the Arctic region," she said. "One of EDA's key tasks is to anticipate capability requirements and cooperation opportunities on this basis in the Arctic area, where a truly comprehensive approach will be required."

# Harmonising ammunition qualification: Endorsement of Test Centres

**E**ndorsement of Test Centres is one of the short term actions in the Harmonisation of Ammunition Qualification roadmap, which the European Defence Agency (EDA) presented to the Member States earlier this year. On 14-16 October 2013, EDA organised the first test centre visit to TNO in the Netherlands, with the support of the Dutch Ministry of Defence.

The main objective of the event was to build trust between test centre experts and to provide a better insight into the processes, expertise and methodologies used on the implementation of the ammunition qualification standards. This was the first of several planned visits to be conducted biennially to test centres within participating Member States. These visits provide test centre experts with a forum to



share experiences and hands on working methodology.

This particular visit focused on testing of energetic materials, namely friction sensitivity, thermal analysis, pressure vacuum stability and ballistics. For the first time at European level, more than 30 government and industry experts conducted joint tests and exchanged views on the test results and outcomes.

As a direct consequence, joint follow-on activities have been identified, enabling Member States to continue mutual cooperation

on harmonising the ammunition qualification process and procedures.

The Endorsement of Test Centres complements other actions included in EDA's Harmonisation of Ammunition Qualification roadmap, all aiming to improve European armed forces interoperability, enable more efficient Pooling & Sharing among Member States while in parallel reducing the overall ammunition acquisition cost. The next activity of this kind is planned to take place in Poland in April next year. **◀**

## Poland joins joint purchasing initiative

Poland has joined the Joint Procurement Initiative (JPI) on the common purchase of ammunition for the Carl Gustav recoilless multi-purpose rifle, while the Czech Republic has initiated its accession to the programme.

EDA acts as a central purchasing body in this common effort and is tendering a respective five years framework agreement, with a possible renewal of two more years, allowing all contributing Members to purchase ammunition according to their national needs.

EDA's Deputy Chief Executive, Rini Goos, welcomed the expansion of the Common Carl Gustav Procurement by saying: "EDA is a facilitator and multiplier for European defence cooperation. This common procurement initiative illustrates the success of our approach: it all started with three countries choosing EDA as their vehicle for cooperation; a couple of months later we have two additional countries on board."



Courtesy of www.army.cz

## EDA-Egmont PhD Prize: submissions request

The EDA and the Egmont Institute have opened invitations to European scholars to submit their candidacy for the EDA-Egmont PhD Prize in Defence, Security and Strategy. Deadline for submissions is 1 December 2013. The Award notice will be published on 1 March 2014.

According to submission criteria ([www.eda.europa.eu/info-hub/news/2013/09/12/call-for-submissions-eda-egmont-phd-prize](http://www.eda.europa.eu/info-hub/news/2013/09/12/call-for-submissions-eda-egmont-phd-prize)): "If you have been awarded a PhD in the last academic year or beginning of current academic year (1 September 2012 to 1 December 2013) and feel your findings stand out in terms of quality, innovation and impact on future EU policy, then you are what we are looking for. You need to be a citizen of an EDA Member State (all EU Member States except Denmark) or a state with an Administrative Arrangement with EDA (Switzerland, Norway). You will need to have been awarded the PhD by an academic institution, and you will need to be available to deliver an intervention at EDA's Annual Conference scheduled for 27 March 2014 in Brussels."



# News: /continued

## Hot Blade 13 helps refine combat helicopter skills

**M**ore than 750 personnel from five countries (Austria, Belgium, Germany, the Netherlands and Portugal) participated in the successful second edition of the Hot Blade multinational helicopter exercise, which took place in Portugal between 17 to 31 July. During Hot Blade 2013 (HB13) a total of 324 sorties and over 960 helicopter hours were flown.

HB13 was designed to allow European helicopter crews to practice operations in a hot, high and dusty environment, simulating the challenge and the dynamic conditions that participating forces will encounter when they deploy to a current theatre of operation (TO). Besides the focus on flying in challenging environmental conditions, the exercise was

developed to implement 'joint interoperability training' including air assault, special operations aviation, combat service support, close air support (CAS) including urban and emergency CAS, convoy/helicopter escorts, reconnaissance and security operations, combat search and rescue, personnel recovery, military/non-military extractions, medical and casualty evacuation.

Formation flying was one of the possibilities that the HB13 provided to its participants during this week of exercise. Formation flight means the disciplined flight of two or more aircraft under the command of a flight leader and is

used for mutual support training and for capabilities sharing. It also increases the capabilities of the aircraft involved.

Based on the lessons identified during the exercise, an updated version of the standard operation procedures elaborated within EDA's helicopter exercise programme has been made available to contributing Member States. 



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# › Head of Agency publishes report on CSDP



Catherine Ashton, High Representative of the Union for Foreign Affairs and Security Policy and Head of the EDA, published on October 15, 2013, her final report on further strengthening the Common Security and Defence Policy (CSDP)

**T**he report is part of the preparations for the European Council in December where Heads of State and Government will discuss security and defence topics. The report sets out proposals in three main areas: strengthening the CSDP, enhancing defence capabilities and reinforcing Europe's defence industry.

According to Catherine Ashton at the launch of the report: "This debate among leaders comes at an opportune moment. The EU needs to protect its interests and promote its values, and it needs to be able to act as a security provider both in its neighbourhood and at the international level. To be credible, this requires capabilities and a strong industrial base. This is both a challenge and an opportunity. Defence cooperation is never straightforward, but there is certainly scope for further enhancing cooperation among the Member States to develop and deploy capabilities. In addition, the defence industry can be a driver for jobs, growth and innovation."

In terms of strengthening the CSDP the report says the European Union (EU) needs to be able to respond rapidly to security challenges – cyber, space, energy, maritime and border security. The report asks the European Council to help further embed Pooling & Sharing in Member States' defence planning and decision-making processes and to deliver key capabilities through major projects. Systematic and long-term defence cooperation with agreed priorities and milestones could be supported by a strategic level Defence Roadmap which could also lead the way to closer synergies between the EDA and OCCAR, the Organisation for Joint Armament Cooperation. It says the EDA, through the Code of Conduct on Pooling & Sharing (*See European Defence Matters,*

*issue three, 'New Code of Conduct will help fill capability gaps')* is ready to act as a framework of coordination and transparency to enhance and facilitate synergies and identify best practices.

The report asks Member States to commit to major projects in air-to-air refuelling (AAR), satellite communication, remotely piloted aircraft systems (RPAS) and cyber defence. It highlights the work the EDA is undertaking to find short, mid and long-term solutions to increase tanker/receivers interoperability and maximise the use of existing assets. In satellite



**"The EU needs to protect its interests and promote its values, and it needs to be able to act as a security provider"**

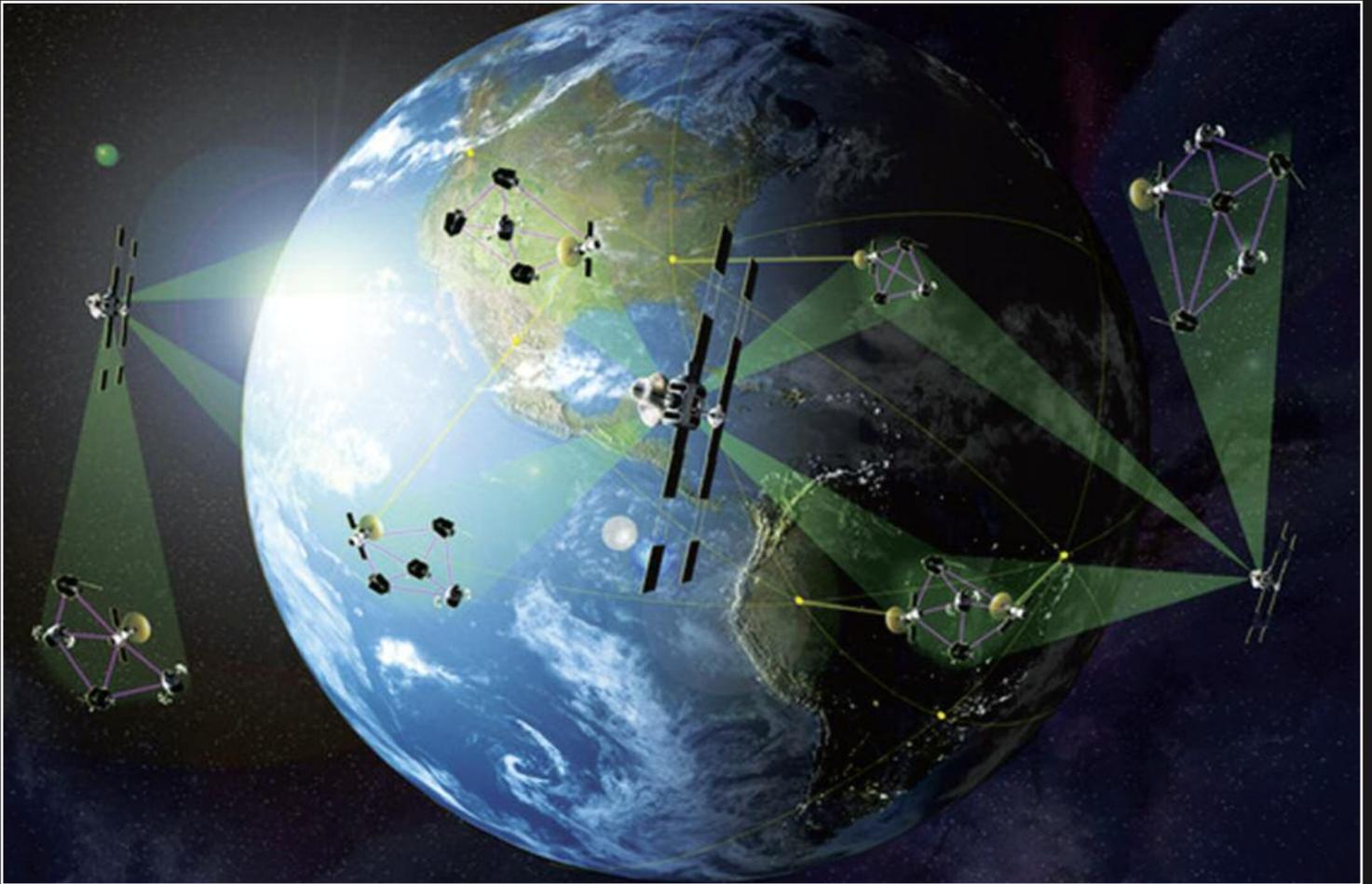


communications the report mentions the objective of a future dual civil-military capability by 2025 via a user-driven approach based on a detailed roadmap. In the RPAS domain the report says the EDA is ready to prepare a programme for next generation Medium Altitude Long Endurance (MALE) RPAS which will need to include regulatory aspects regarding insertion into normal airspace and technology development, possibly through a joint investment programme between the European Commission, the EDA, Member States and the industry. And in cyber defence, the objective is to establish a comprehensive European approach. The report highlights further EDA activities in this area, based on the recently adopted cyber strategy, and focusing on realistic deliverables such

as training, exercises, protection of headquarters and the Cyber Defence Research Agenda.

In terms of strengthening Europe's defence industry "a strong and healthy industrial base is a prerequisite for developing and sustaining defence capabilities and securing Europe's strategic autonomy," said Catherine Ashton. This industrial base has to be safeguarded through substantive and strengthened cooperation at European level, including through major new cooperative programmes. There should be a new focus on small and medium sized enterprises (SMEs). The EDA together with its Member States is also working on concrete measures to increase both short- and long-term security of supply, in terms of supply chains, European non-dependencies, raw materials and investments in key industrial and technological capabilities.

The report also highlights the decrease in national defence research and technology (R&T) expenditure in the last few years which could have a negative impact on the long-term competitiveness of the European industry. It says critical technologies will need to be developed at the European level within the defence, space and the civil sectors. These technologies should be identified on a systematic basis to underpin long-term planning for European R&T. The report suggests that Member States should be encouraged to commit to multi-annual investment in defence R&T through cooperation. Synergies between civil and defence research for dual-use technologies should also be exploited, it says. The EDA is working closely with the European Commission and European Space Agency on dual use research; important areas of cooperation are key enabling technologies, critical space technologies, CBRN, cyber defence and RPAS. 



Industry's response to the need to look forward and innovate ranges from the exploitation and improvement of current systems to a radical re-think of operational concepts and the greater use of unmanned systems and advanced technology on land, in the air and on and beneath the sea.



# › Critical technology investment now more important than ever

Europe has enjoyed a leading position in many aspects of defence research and technology (R&T) over the last two decades. Christian Bréant, the EDA's Director of R&T, talks to Tim Mahon about what the Agency is doing to improve Europe's chances of preserving a competitive advantage

**T**here is no doubt that the landscape has changed with regard to research and technology (R&T) within Europe's defence community. "As budget pressures

have increased and the economic crisis has had an increasingly dramatic effect, the first instinct has been to reduce budget wherever possible, and investment in R&T is, unfortunately, an easy target," said Bréant. The EDA's involvement in R&T on behalf of Member States in 2008 was €230 million in projects, employing 16 dedicated staff; in 2012 it was €60 million. This is a situation that needs to be reversed and carefully managed if Europe is to fully recognise its potential in a number of significant technology areas, he said.

"The Agency focuses on assisting Member States to develop and enhance critical technologies at Technology Readiness Levels (TRL) from 3 to 6 – in other words, on everything short of actual operational demonstrations," said Bréant. To ensure that the most important projects are prioritised the EDA has broken down its R&T initiatives into Joint Investment Programmes (JIP) and specific projects. JIPs usually involve a large number of EDA participating Member States, with a common budget normally over €10 million and covering several individual projects. Specific projects (called Category B) are typically involving from 2 to 10 contributing Members and worth an average €4 million.

Although the situation is one for concern Bréant points to a significant number of projects already under way that are addressing some of the critical technology shortfalls and providing Europe with a stable platform for further development. "In the Chemical, Biological, Radiological and Nuclear (CBRN) arena, we have two major projects – the BIO-EDEP programme, examining enhancement and development of current biological detection equipment (*See European Defence Matters, issue 2*) and a larger scale programme looking at detection and protection technologies. The latter is already at TRL 3 or 4 – but the timescale to bring this to fruition is probably five to seven years. So one of the challenges we face is how to accelerate timing and gestation periods for large

scale projects. These are key issues for us to get this right."

There may be other sources of funds elsewhere in the European Community that may be appropriate for issues such as CBRN, which has implications in security as well as military operations.

Another critical area in which EDA is playing an active coordinating role is the unmanned maritime domain. The UMS (Unmanned Maritime System) R&T programme, signed in 2010, aims to bring 'plug and play' technology insertion in a wide range of disciplines – ranging from propulsion and sensor management to command and control and mine detection – to existing and future UMS. The overall programme includes 15 projects, and – 12 of them – enjoy Category B-like status, with varying numbers of contributing Member States supporting different projects. The three other projects are focused on the critical issue of integration and standardisation – how to de-conflict systems and ensure interoperability – and with all the relevant categories now signed,

there is more than enough reason to be hopeful that tangible benefits are just around the corner, according to Bréant.

With quite a deal of experience in this kind of large scale project management under its belt, where does the Agency's R&T Directorate focus its attention next? "Land

Systems are, without doubt, the next areas on which we need to focus," said Bréant. "The Land Systems landscaping study we have recently completed will form the basis for a number of separate but interrelated projects that will help Member States focus on the areas of technology in which the European land systems industry can develop real competitive advantage – and resolve existing capability and technology gaps," he said.

"Our role is not only a coordinating and facilitating one. We are a small agency – but we are lean and mean and focused on answering the right question – not dreaming about technology. We can have – we ought to have – a dramatic influence if we do this right. The studies we conduct are absolutely critical to ensuring we are answering the right question and taking the right direction. They help us identify areas in which we can leverage past →



"We need to address integration at the system level rather than have a large number of individual project."

Christian Bréant  
Director of R&T, EDA

investment, optimise future development and make far greater use of dual-use technologies," he said.

The question of dual use technologies – areas in which new technology defence spin-off benefits can be applied to a wide range of industrial and user needs – is one that dominates current thinking to a large degree. "We have to make much greater use of these technologies and to that end we are constantly seeking greater collaboration with the European Commission and agencies such as the European Space Agency," said Bréant. There are discussions in hand to further exploit the Commission's 'Horizon 2020' initiative, for example, and there are some €12 billion in funds already earmarked for focused work on key enabling technologies over the next seven years.

Another area where there is potential to access resources outside the military community for developing dual-use technologies is Remotely Piloted Aircraft Systems (RPAS). Although military forces are the principal users of RPAS currently once the problems of air traffic insertion and the regulatory environment are resolved, the civil and governmental market for use of RPAS is likely to show exponential growth. "One of the elements of context here is the US decision to resolve the problem of insertion of RPAS into civil airspace by 2015 – that has given an enormous boost to our efforts to provide an environment in which Europe can regain a competitive edge in this critical area of technology and industry capability," said Bréant.

But there are other, more esoteric, areas in which EDA is focusing its efforts with Member States. One of these is the potentially critical area of Gallium Nitride (GaN) components, which could dramatically improve the design, development and efficiency of electronic components and systems. "GaN has huge implications for some of the more problematic areas of defence technology development for the modern battlefield – for example, in radar capabilities and the critical area of electronic warfare," said Bréant. "Neither the USA nor Asia will give Europe access to the levels of technological competence that Europe need in this field and we need to continue to select carefully chosen and compelling areas for our investment in similar critical Defence technologies. We are already quite far advanced in GaN in Europe – we have already invested over €70 million in the field to date, including significant contributions by industry," says Bréant.

R&T at the component and materials level is a critical element of ensuring Europe does not lose its technological edge; success does not depend solely on the development of new aircraft, naval vessels or armoured vehicles. Mastery of the underlying technologies is essential if platform-level innovation and capability enhancement is to be achieved. The use of Field Programmable Gate Arrays (FPGA) – an integrated circuit specifically designed for space-constrained applications – is a good example of the importance of enabling technologies. Currently quite common in applications in space, the integration of FPGA technology into other volume critical applications – such as communications equipment, for instance – will bring enormous dividends in terms of efficiency and, eventually, costs.

"We need to keep an open mind when we look at our areas of cooperation. Materials, open architecture systems, automation – all these areas which we have added to our strategic research agenda. We have seen investment of over €130 million in software defined radio, for example, and when we look at the issue of information management, we recognise the vulnerability of existing and future systems to the emerging cyber threat, so we have a big R&T work strand in the cyber area," Bréant said.

Bréant will leave the agency at the end of 2013 as his

## Innovation conference and promoting new research initiatives

The 2013 EDA Research & Technology (R&T) Conference will take place on December 5 and 6 2013 at the Hellenic Armed Forces Officers Club, Rigillis 1, 10675 Athens, Greece. It will give attendees the opportunity to survey Europe's defence technology and industrial base and identify vulnerabilities that could negatively impact Europe's production of defence systems. Some specific research areas will be highlighted and the conference will discuss the results of two Joint Investment Programmes (JIP), explore innovative ways of funding dual-use research and search for new ways to connect academia, SMEs and industry for R&T collaboration.

Please visit [www.eda.europa.eu/info-hub/news/2013/10/16/eda-r-t-conference---](http://www.eda.europa.eu/info-hub/news/2013/10/16/eda-r-t-conference---)



register-now! For more information. As part of the event the EDA has launched the EURidea forum for interested parties to pitch novel ideas for defence research. Industry and academics are being asked to propose new subjects of critical R&T in three technology areas – materials and Nano technologies, energy and unmanned systems and technologies, including sensor networks.

The EDA will select the best ideas and then ask successful candidates to present their ideas to the conference. For more information please visit [www.eda.europa.eu/info-hub/news/2013/10/17/euridea-for-novel-defence-research](http://www.eda.europa.eu/info-hub/news/2013/10/17/euridea-for-novel-defence-research).

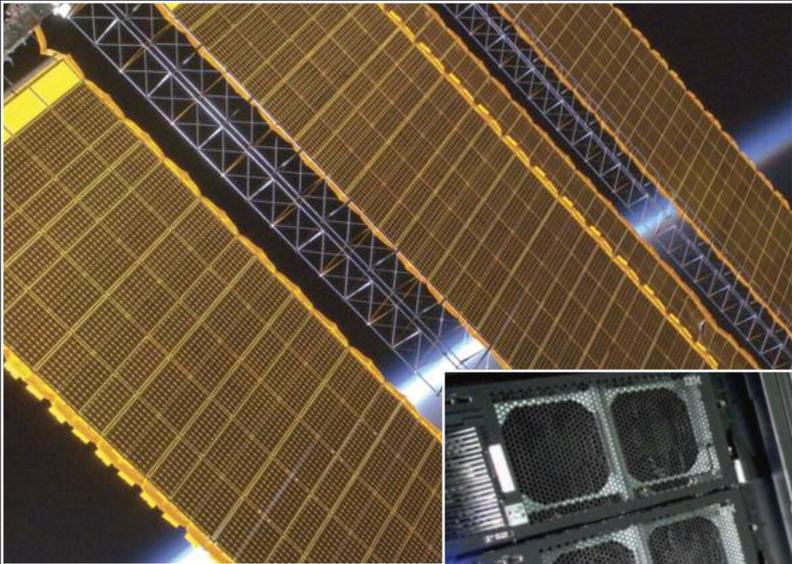
mandate comes to an end. Looking back on the changes he has seen while heading the R&T Directorate, he sees four main themes of development that he feels should drive future efforts. "We need to address integration at the system level rather than have a large number of individual projects – the UMS programme is a good example of where we have done that, but we should be doing the same in the Intelligence, Surveillance and Reconnaissance (ISR) arena as well. By doing this, we can bring significant added value and address issues from a top down and bottom up perspective at the same time."

"Second, we need to fully embrace open architectures. They facilitate 'plug and play' – the future modular ship will only be possible by using open architecture, I think. We need to overcome the issue of seeing 20-30 years between generations of capabilities.

"Third, we need to improve and integrate our collaboration with the European Commission. The next period – 2014-2020 – will see the door opening to coherence in R&T and dual use technologies with respect to defence applications. In the CBRN field I have already mentioned, we will see a move to what the Commission calls 'pre commercial procurement,' which really means more practical demonstrations of the way in which these technologies can be leveraged across government.

"Finally we need to pay attention to the small and medium sized enterprises (SME) in Europe. There are lots of them, its where a lot of innovation comes from and some of them are even prime contractors in some programmes. But the challenge very often comes for them when moving from development to production. That's an area we need to focus a lot of attention on," he said.

Bréant sees great achievements already made but says there is a long way to go, given the continually accelerating rate at which technology developments enable capability insertion, which in turn generates fresh user demand feeding back into the R&T queue. "As long as we manage the balance between pragmatism and aspiration, we will be fine," he says. "After all, R&T should be about 'mission possible.'" 



Solar panels on the International Space Station demonstrate the significant non-military demand for solar power generation



Image courtesy of European Space Agency



Image courtesy of IBM

Laser communications systems will play a significant role in future space missions

Supercomputers will be needed in applications such as weather forecasting and cryptography

# European Commission publishes its blueprint for strengthening Europe's defence industry

The European Commission has set out a number of detailed proposals for consideration by EU Member States to improve cooperation in capability acquisition and reduce duplication, reports Philip Butterworth-Hayes

**T**he Europe Union (EU) needs to evolve the defence internal market by tackling market distortions and improving security of supply, strengthening the competitiveness of Europe's technological and industrial base and by promoting hybrid standards and industrial clusters. It also needs to exploit synergies between civil and defence sectors in research by developing more dual use projects and capabilities. These are some of the key recommendations announced by the European Commission in its official communication 'A new deal for European defence: Towards a More Competitive and Efficient Defence and Security Sector' published in July 2013. The report has

been produced for consideration at the December 2013 European Council, where Heads of State and Governments will discuss, among others topics, how to increase defence capabilities during the current economic uncertainties in many Member States. In 2012 the Commission set up a task force (see 'Moving Forward Together,' *European Defence Matters issue 2*) to examine how industry can be brought within the single market while ensuring key capabilities are retained. The work was co-chaired by Directorate-General (DG) Enterprise and DG Internal Market under the authority of Vice-President Antonio Tajani and Commissioner Michel Barnier and involved 12 DGs of the Commission. The EDA and the European

External Action Services (EEAS) have been associated to the Task Force. The EDA has in particular facilitated the dialogue between ministries of defence and the European Commission and has been used as a platform to elaborate and convey views of the defence community. "Europe needs a more effective defence and security policy for three main reasons", said José Manuel Barroso, President of the European Commission, at the release of the Communication. "Firstly, because this is essential to reinforce our foreign policy and the European Union's role in the world... Secondly, because in times of economic constraints we need to make a better use of public money... Thirdly, the →

"...it contains short-term measures that we can take using the tools we already have"  
*Michel Barnier,  
 Commissioner*



"...in times of economic constraints we need to make a better use of public money"  
*Manuel Barroso,  
 President*



"...we need to remove existing obstacles that still limit innovation"  
*Antonio Tajani,  
 Vice-President*



defence and security sector is a major industrial cluster in Europe.

"Member States can no longer afford an isolated approach to defence – more than 75% of defence equipment expenditure is spent nationally," said President Barroso. "To be more efficient, he said, cooperation between Member States on defence and security is critical; the defence and security industry also needs to be supported."

The Commission is proposing to undertake (see box) to help Member States strengthen their defence industrial base. Many of these proposals would involve the EDA optimising synergies at a European level, between national programmes and European instruments in areas such as standardisation and certification for example. This work would enhance interoperability, reduce costs and increase the competitiveness of European industry.

Apart from a priority requirement to develop common remotely piloted air system (RPAS) standards for airworthiness the Commission in its communication also highlighted the need to support small and medium-sized enterprises (SMEs) in their efforts to access international markets.

"In order to improve the operational context for industry and SMEs, we need to remove existing

obstacles that still limit innovation, research and standardisation efforts," said Antonio Tajani, European Commission Vice President responsible for Industry and Entrepreneurship, at the launch of the Communication. "In particular, the Commission proposes to: strengthen the internal market through supporting European standardisation and certification; support SMEs in their efforts to access international markets and to build networks and alliances; and exploit possible synergies with Member States and the EDA between our security research programme and their defence research agenda."

It has also proposed that the EEAS and the EDA explore the possibility of progressively developing new imaging capabilities to support Common Foreign and Security Policy (CFSP) and Common Security and Defence Policy (CSDP) missions and operations. And the Commission plans to support military 'green' initiatives currently being managed by the EDA, to help participating Member States exploit the potential of renewable energy generation and supply.

"This communication (has been written) to provoke debate and facilitate discussions between Heads of State and Government," said Michel Barnier, European Commissioner Internal Market and Services. "It contains short-term measures that we can take using the tools we

already have – the directive on open markets and standardization – and others in the longer term."

The Commission proposals – together with the report prepared by the High Representative of the Union for Foreign Affairs and Security Policy and Head of the EDA – will be discussed by the European Council in December 2013. Depending on the guidance given by the European Council, the Commission will develop a detailed roadmap with concrete actions and timelines, in close coordination with the EDA and the EEAS. ■

For the full version of the European Commission's proposals please visit:  
[http://ec.europa.eu/enterprise/sectors/defence/files/communication\\_defence\\_en.pdf](http://ec.europa.eu/enterprise/sectors/defence/files/communication_defence_en.pdf)

For EC President José Manuel Barroso's speech to launch the study please visit:  
[http://europa.eu/rapid/press-release\\_SPEECH-13-657\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-13-657_en.htm)

For EC Vice President responsible for Industry and Entrepreneurship Antonio Tajani's speech to the launch the study please visit:  
[http://europa.eu/rapid/press-release\\_SPEECH-13-656\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-13-656_en.htm)

For Commissioner Internal Market and Services Michel Barnier's speech to launch the study please visit:  
[http://europa.eu/rapid/press-release\\_SPEECH-13-659\\_fr.htm?locale=en](http://europa.eu/rapid/press-release_SPEECH-13-659_fr.htm?locale=en)



# The European Commission's proposed action plan

## Strengthening the Internal Market for Defence

### Ensure market efficiency

The Commission proposes to monitor the openness of Member States' defence markets and regularly assess via the EU's Tenders Electronic Daily (TED) and other specialised sources how the new procurement rules are applied.

### Tackle market distortions

The Commission proposes to ensure the rapid phasing out of offsets, among other actions.

### Improve security of supply

The Commission, together with the EDA, intends to launch a consultative process aimed at bringing about a political commitment by Member States to mutually assure the contracted or agreed supply of defence goods, materials or services for the end-use by Member States' armed forces.

## Promoting a more competitive defence industry

### Standardisation – developing the foundations for defence co-operation and competitiveness

The Commission proposes to promote the development of 'Hybrid Standards', for products which can have both military and civilian applications.

### Promoting a common approach to certification – reducing costs and speeding development

The Commission proposes to assess the different options for carrying out, on behalf of the Member States, the tasks related to the initial airworthiness of military products in the areas specified by the EDA.

### Raw materials – tackling supply risks for Europe's defence industry

The Commission intends to screen raw materials that are critical for the defence sector within the context of the EU's overall raw materials strategy and prepare, if necessary, targeted policy actions.

### SMEs – securing the heart of Europe's defence innovation

The Commission proposes to explore with industry – taking a bottom-up approach – how to establish a European Strategic Cluster Partnership designed to support the emergence of new value chains and to tackle obstacles faced by defence-related SMEs in global competition.

### Skills – managing change and securing the future

The Commission proposes to promote skills identified as essential to the future of the industry including through the "Sector Skills Alliances" and "Knowledge Alliances" programmes currently trialled.

## Exploiting Dual-Use Potential of Research and Reinforcing

### Innovation

The Commission intends to support a pre-commercial procurement scheme to procure prototypes, among other actions.

### Development of capabilities

The Commission intends to continue to enhance interoperability of information service sharing between civilian and defence users as piloted by the Common Information Sharing Environment for Maritime Surveillance. The Commission proposes to explore together with Member States the establishment of a civil-military cooperation group in the areas of a) detection technologies, and b) methods to counter improvised explosive devices, man-portable air defence systems (MANPADs) and other relevant threats, such as CBRNE threats.

## Space and Defence

### Protecting space Infrastructures

The Commission has put forward a proposal for EU SST support programme in 2013. Building on this proposal, the Commission proposes to assess how to ensure, in the long term, a high level of efficiency of the SST service.

### Satellite Communications

The Commission intends to act to overcome the fragmentation of demand for security SATCOM. In particular, building on the EDA's experience, the Commission will encourage the pooling of European military and security commercial SATCOM demand.

### Building an EU satellite high resolution capability

The European Commission together with EEAS and EDA will explore the possibility to develop progressively new imaging capabilities to support CFSP and CSDP missions and operations.

## Application of EU Energy policies and support instruments in the defence sector

The Commission proposes to set up a specific consultation mechanism with Member States experts from the defence sector by mid-2014, based on the model of the existing Concerted Actions on renewables and energy efficiency.

## Strengthening the International Dimension

### Competitiveness on third markets

The Commission intends to establish a dialogue with stakeholders on how to support the European defence industry on third markets. With respect to offsets on third markets, this dialogue would explore ways of mitigating possible negative impacts of such offsets on the internal market and the European defence industrial base.

### Dual use export controls

The Commission plans to present an impact assessment report on the implementation of Regulation (EC) 428/2009 and would follow up with a Communication outlining a long-term vision for EU strategic export controls and concrete policy initiatives to adapt export controls to rapidly changing technological, economic and political conditions. This may include proposals for legislative amendments to the EU export control system.

"There is consensus at the political level that collaboration is a necessity and that the EDA offers a platform for the implementation of concrete, results-oriented programmes"



# > "Cooperation has become a necessity, not a luxury"

The EDA's Chief Executive Claude-France Arnould talks to Tim Mahon about the potential outcome of the December European Council, progress on key programmes and the future of the Agency

**In December Heads of State and Government will discuss defence topics for the first time in years. How would you describe the state of European defence today?**

I would say that the performance of our Member States and our industry remains excellent but that this needs to be viewed against the background of the challenges we face. The most obvious have been the defence expenditure cuts which over the last three years have totalled €10 billion – a real term decrease of 5%. There is also a shortfall in key capability areas, such as air-to-air refuelling (AAR), satellite communications, remotely piloted aircraft systems (RPAS) and cyber defence. These challenges are exacerbated by the continuing emergence of new and sophisticated threats that call for the crafting of an adequate response and by the fact that Europe's defence industry is on the verge of serious difficulty.

It is clear that Member States can no longer meet their capability needs alone; it is increasingly difficult to run a major programme without partners and this means that cooperation has become a necessity, not a luxury.

There is consensus at the political level that collaboration is a necessity and that the EDA offers a platform for the implementation of concrete, results-oriented programmes. The Code of Conduct on Pooling & Sharing, endorsed by all Member States last year, is an important step to embed the concept in Member States' planning and decision-making processes from the outset of a capability development programme, and throughout its life. We see a real dynamic in this respect in the run-up to the European Council meeting, which is very encouraging.

**You mentioned capability shortfalls. What elements of European capability do you see as most critical?**

Frequently the first reaction to budget

austerity is to cut investment, often with potentially severe repercussions on long-term capability development. This is sometimes easier than cutting staff, which can be socially difficult and does not result in immediate savings. Some of the consequences are already clear. For example, Europe has missed the development of the first generation of RPAS while others have not. If a Member State today wants to acquire RPAS capability it can choose between US or Israeli solutions.

Based on recent operations we now have clarity on the critical capability gaps. The most pressing of these is AAR, in which we have in the past relied heavily on the USA. It is now clear from our US partners that they expect us to develop our own capability and the EDA is working on short-, medium- and long-term solutions as a priority. As mentioned above, RPAS remains a critical area and we are working on the next generation from the perspective of both the technologies and the harmonisation of military requirements. We are working towards the establishment of a user-community for the Reapers that are already being used as a short-term solution.

In satellite communications, EDA pools Member States' demand for connectivity through the European Satellite Communications Procurement Cell, which can provide ad hoc support for operations, for example. The long term goal is cooperation on future assets: all five nations with current assets (France, Germany, Italy, Spain and the UK) need to replace them in the 2018-2025 timeframe and this presents a crucial opportunity for Pooling & Sharing of secure satellite communication.

**What would you wish to see emerge from the December summit to improve European defence?**

We need recognition at the highest political

level of the priority to be given to defence, even in the constrained financial situation which is permanently on their agenda. We cannot do 'more with less'. But this should be coupled to the objective of full efficiency of this defence effort which implies: cooperation; focus on real and key shortfalls and future requirements; preparation of the future especially through preservation and development of critical technologies, know-how, industrial base; synergies between the various EU policies and instruments.

And we also need to deliver this political commitment through concrete actions – programmes, in other words – in major domains such as RPAS, cyber defence and satellite communications. This is not only important for Europe's armed forces and to enable Europe to fulfil its role as a security provider but, perhaps even more critically, for Europe's defence industry.

AAR, RPAS, satellite communications, cyber – all these areas need close attention and the ability to accelerate programmes designed to overcome the capability shortfalls. We also need to highlight the incentives for cooperation and urgent attention should be paid to combining and reinforcing the instruments tailored to make this happen, including the EDA and the Organisation Conjointe de Coopération en matière d'Armement (OCCAR).

Finally none of this will really happen without the regular impulse of the Heads of States and governments, a regular rendez-vous on defence.

**What boost can the summit bring to Europe's defence industry?**

Our industry is still world class and is a leader in some areas such as aerospace and electronics. However, this is mostly due to past investment. Industry now needs new programmes to survive. With an annual turnover of €170 billion and supporting 750,000 jobs directly and indirectly, →



defence industry is a vital component of our strategic autonomy.

We need to see major support for research and technology, especially in 'dual-use' technologies, and we need to recognise the importance of support for small and medium enterprises (SME) which often provide the spearhead for innovation. Based on our cooperation with the Commission, we continue to seek all possible sources of funding to support SMEs.

Money, roadmaps, programmes, commitment – that is what is needed. And that requires investment. Defence is an insurance policy and the premiums have to be paid if we are to enjoy security and protection of our vital interests.

**What are the key areas for future cooperation, in your view?**

Cathy Ashton as High Representative and Head of EDA has set out the priority areas. The Commission also proposed a range of actions to support defence in its recent communication. Clearly, the main topics are those identified above, but we also see very promising areas in the field of energy – military consumption of energy as well as the development of a 'greener' approach, standards and certification and in the area of maritime surveillance.

The whole arena of research and technology demands close attention. Many of the evolving threats are complex and multifaceted: the consequence is that innovative technologies will be needed to counter them. If we do not invest now, we may reach a point of no return. Everybody knows that European industry has no alternative but to export, due to shrinking European markets because of the budgetary situation. These exports are largely subject to transfers of technology; which means that the customers today will be the competitors of tomorrow, and many of them are in a position to invest significantly. And we need to keep in mind the importance of technology independence and other areas such as security of supply

**Cyber is of increasing concern to Member States, at both the military and civil/economic defence levels. How do you see the Agency's role in helping Member States to prepare adequately to address these threats?**

A landscaping study of cyber defence

capabilities across Europe was completed earlier this year. The resulting picture is quite mixed with respect to existing capabilities at the national and European levels. But clearly we do not have enough capabilities to face the challenges. The study therefore recommends the strengthening of cooperation in this area and exchange of information. It further proposes pragmatic Pooling & Sharing approaches to some cyber defence capabilities.

The study supports the relevance of the cyber activities the Agency has already undertaken. The Cyber Ranges initiative addresses the identified need for Pooling & Sharing current and future resources for training, exercise and testing. We work on the deployable kits to protect our military and civilian EU missions and operations. We work on research and technologies that our Member States agreed to share.

Cooperation is not necessarily anybody's first instinct when we look at the cyber arena: it is an area in which the intelligence mindset is prevalent. But there is growing recognition that it will bring significant tangible benefits.

**The Agency has taken a prominent role in training, notably in fixed- and rotary-wing aircraft. Many consider training the most effective affordable force multiplier. How do you see the Agency's role continuing in this respect?**

Common training is not only cost-effective but also helps prepare our troops for deployment in multi-national and international operations, increasing interoperability and effectiveness, which in turn also yield savings. The issue of training on a multinational basis is paramount, given that most future operations will be multinational.

Beyond aircraft crews, we see a clear need emerging for future training activities in two developing areas. Cyber defence is becoming increasingly important, as mentioned above. In the field of RPAS, much training is done in simulators, which are expensive to procure and maintain. I should also mention the naval sector. EDA is not – and should not be – a training agency. Our role is to identify requirements linked to capability development, to explore opportunities for cooperation and to coordinate training activities, subject of course to Member States preference,

fostering coherence of standards, curricula, leading to harmonization of licence procedures, pooling of costly simulation devices etc.

**There is a restructuring of the Agency currently in preparation, to become effective on 1st January 2014. What is the motivation for the restructuring and what are its main elements?**

The environment when the Agency was established has changed dramatically. It demands adaptation of our structures to better assist Member States. A second issue is that EU policies are increasingly having an impact on defence and can bring benefits to defence actors.

Analysing this, our restructuring is centred on three key domains. Capability and Programme Development will enable EDA to enhance and increase its output, through faster delivery of solutions and products. Support to Innovation and Synergies with EU Policies will facilitate the interaction with the European Commission – an area that requires specific knowledge and skills. The intention is to anchor this capability within the EDA. Finally, Defence Support – for which the key phrase is planning of priorities and 'through life management of capability'.

In restructuring the Agency this way, we can link the reality of austerity to the achievable goal of efficiency and we can be more innovative in seeking and capturing sources of funding for the valuable programmes on which we will continue to be engaged and finally reinforce our links with our Member States.

**Your three-year initial term as Chief Executive of the EDA draws to a close. What do you think have been the significant achievements the Agency has made during your tenure and where do you see it making greater impact in the future?**

2011 coincided with a strong political consensus on Pooling & Sharing launched during the Ghent meeting of Defence Ministers. For me, the EDA is obviously the place to support this new impulse and this political will.

It is what EDA was created for, ten years ago by the European Council in Thessaloniki. Our objective was to demonstrate the feasibility and value of Pooling & Sharing projects and the relevance of EDA as a platform and enabler to deliver them.

But the potential of EDA is not yet fully exploited. We are a platform for à la carte cooperation, it is true: but this is only the beginning and far from what the Lisbon Treaty provides for. I think there is a very bright future for the EDA. When it comes to the question of effective collaboration in European defence, I like the comparison drawn by a Belgian colleague with a voicemail menu on a phone call anywhere in Europe's defence community: "If you want to cooperate, press EDA!" ☒

## > "We can all benefit by cooperating"

General Gerard Van Caelenberge has been the Belgian Chief of Defence since July 2012. His career as an Air Force officer began in 1970 and he is a former F-16 pilot. He was later appointed Commander of the Air Component of the Belgian Armed Forces and is a graduate of the NATO Defence College in Rome. From 2006 until 2008 he was the Director of the European Air Group. He talks here with Tim Mahon and Eric Platteau

### Do you see new trends emerging in the long history of defence cooperation between the BENELUX nations?

We do have a long history. Belgium and the Netherlands began working together in 1948 and Luxembourg joined them in 1987. But this cooperation hasn't yet reached its full potential. The BENELUX Declaration of April 2012 gives fresh political impetus to the process and defines specific areas of cooperation – such as logistics and maintenance, education and training, procurement of equipment and execution of military tasks.

The two major principles here are to achieve effectiveness and operational input while realising economies through cost-sharing. The waters of the North Sea, for example, do not change their characteristics at the Belgian border so it would be a great pity if all the nations bordering the North Sea developed their own immersion suits or hydro-graphic survey equipment – or even conducted the same research studies. We can all benefit by collaborating.

This does not mean we lose any aspect of national autonomy. Our minesweepers and frigates, for example, work in cooperation with the Royal Netherlands Navy in many aspects of their daily lives – training, logistics, maintenance and so on. But when they sail on an operation they do so as Belgian vessels. We have a need to preserve sovereignty, as do all our partners, but we also need to be able to present our political masters with more choices.

We would like to offer the BENELUX cooperation model as a bridge to collaboration between larger European military powers. The BENELUX agreement is certainly not exclusive – we would



be happy to see much more widespread collaboration. At a European level, cooperation is vital for two reasons: one, to acquire certain capabilities for which the scale of regional clusters is too limited; and second, to reduce duplication of efforts in defence across Europe.

**Belgium has been involved in a number of EDA exercises, including the Green Blade helicopter exercise and the European Air Transport Training programme. What benefits do you see from these and how will they affect current Belgian operations?**

There is a clear win for us here, with the main benefits being in interoperability and environmental training. It is very important to be able to 'train as you operate'. For us, supporting →





defence is an important objective. As the International Security Assistance Force (ISAF) operation winds down further, I believe we should – and will – see more energy and assets being dedicated to training, especially in multinational operations. It is important to ensure that smaller nations should be able to significantly improve their level of experience in leadership and senior command roles and the battle-groups are an ideal construct in which to do this. The Belgian led EUBG 2014/II consists of troops from the Netherlands, Germany, Spain, Luxembourg and Macedonia as well as Belgium.

It is also an area in which some of the balance can be achieved that we always need to keep in mind. Belgian participation in the EU BGs represents a reasonable and regular effort in comparison with our partners – our 'fair share,' if you will. To avoid overloading our units, our contributions have to be carefully balanced with our participation in the NATO Reaction Force, as well as with on-going operations.

The battle-groups also represent an opportunity to further strengthen the visibility and effectiveness of the CSDP. Europe's rapid response capability, including the EUBGs, spearheads the CSDP and deploying a battle-group or some of its constituent parts could be a powerful opportunity to make the policy more visible and credible.

**The Belgian armed forces are now being restructured. What are the main elements of this process and how did it come about?**

There are several areas of restructuring that are aimed at preservation of existing capabilities and roles in a manner consistent with the realities and challenges of current and future resources. Our primary mission remains unchanged and we have preserved the strategic choice to develop expeditionary forces and enhance our existing multinational cooperation frameworks.

That said, there are some structural changes that reflect budgetary and manpower issues – we are faced with the reality that we have ageing people in key positions and need to develop better autonomous decision-making skills at lower levels of command.

The land component has been transformed, focusing our capability on one medium brigade and a light brigade. This has been achieved without dismissals but with a reduction in strength to about 12,500 (from 14,000).

The air component has been concentrated into five operational airbases and one radar site, from the nine former locations, and manpower reduced by almost 1,000.

The naval component has focused its restructuring on strong capabilities in the escort and mine countermeasures roles and close integration with Dutch naval forces.

The medical component remains a discreet unit and will continue to support all deployments of the other three components. It is worth pointing out that the medical services

provide national capabilities as well. We have a burns unit, for example, that is world class and provides support for the nation at large as well as the military.

Recruitment is an issue and we need to be aware of the fact that we need to be an attractive employer. We attract young people with a sense of adventure in many cases – there is an interest among recruits in wanting to do something positive on the world stage. But there is a balance to be maintained – as deployments wind down and others raise their heads in the future, we need to be aware of the issue of motivation at an individual as well as unit level. Like fatigue of continued deployment, the lack/absence of deployments will have a negative impact on motivation as well.

**Where do you see the strong points of the Belgian armed forces?**

High levels of training and education, good language skills and cultural awareness and a lot of experience stemming from operational deployment are strengths that ensure the Belgian armed forces are greatly appreciated by others in an international context. Strong local leadership at the unit level demonstrates the quality of our professional education and training systems.

We know we can't afford arrogance, however, and we naturally face compromise solutions in everything we do. Our armed forces are well equipped and supported, and we do work hard to ensure we maintain a high level of operational efficiency. We have comparatively few people to commit to multinational operations, but we are determined that, if we have only a small number, they are all behind the objective and capable of achieving it.

**Where do you see the main future threats? How can EDA support Member States in preparing for them?**

The *Future Global Context* study led by EDA shows a broad spectrum of security risks for the future. Scarcity of resources, global warming, regional power changes, cyber threats and increasing empowerment of non-state actors all contribute to an uncertain security environment. The linkage between these various threats leads to a blurring between internal and external security, which further widens the spectrum of issues for which we have to be prepared.

The EDA is the focal point for capability development and is the point at which top-down and bottom-up approaches meet and that multilateral cooperation can take form to serve EU requirements. Member States will have to strengthen EDA's role to help cope with the broadening spectrum of threats. Capability planning remains a challenging exercise for the foreseeable future: EDA has a clear role to create greater European efficiency by establishing the necessary level of trust between Member States, enabling them to take further steps towards a more integrated approach. ■

# › Squaring the circle with cooperation

Anders Fogh Rasmussen is Secretary General of NATO and talks here with Eric Platteau and Elisabeth Schoeffmann on how, in this era of global security uncertainty, NATO can rise to the challenge of developing enhanced capabilities during tough economic times

**How can NATO help nations faced with the simultaneous challenges of increased budget austerity and a necessity to plug capability shortfalls?**

The key term is what we in NATO call 'Smart Defence' and in the EU 'Pooling & Sharing'. Both concepts are about the more efficient use of resources. Realistically speaking we cannot expect much more money for defence in the near future because of budget austerity. We need to get more value, more security for money.

The best way to achieve this is through more multilateral cooperation. It will be increasingly difficult for individual nations to acquire advanced and expensive military equipment in the future. The only way – even for bigger allies – is to help each other. We call it Smart Defence because it is a smarter way of spending money. Up to now 29 Smart Defence projects have been implemented, more will come.

One of our Smart Defence flagship projects deals with the common acquisition of C-17 transport aircraft. These heavy transport aircraft are very expensive; in particular for smaller allies the acquisition of such aircraft is difficult. Twelve nations – ten NATO allies and two partners – have now joined efforts and acquired three C-17 aircraft.

Individual nations buy flying hours according to their needs. That's a smart and very flexible way and the concept could be applied to other areas.

The operation in Libya has a positive story to tell about European leadership, but we also learned that the Europeans lack some critical capabilities. The main ones are linked to intelligence, surveillance and reconnaissance (ISR). We need observation drones in Europe. We need more air-to-air refuelling capabilities. We might have a lot of aircraft in Europe but we cannot refuel them in-flight. We also know from recent operations that we need more heavy transport capacity in Europe. We have more soldiers than the Americans but we cannot move them.

These three areas – drones, air-to-air refuelling and transport aircraft – could be tackled if the nations help each other in collective projects. I would very much like to see more European investment in these areas. And the way to square the circle to acquire these capabilities in limited budgets is through Smart Defence or Pooling & Sharing.

How to move on is of course for European leaders to decide but seen from a NATO perspective, a strong Europe is also a strong NATO. What we need is more investment in critical military capabilities. That's what I hope could be the outcome of the European Council

## "The operation in Libya has a positive story to tell about European leadership, but we also learned that the Europeans lack some critical capabilities"

meeting in December, a strong commitment to the necessary investments. And, on top of that, political will to actually use these capacities if needed.

### **How do you see the relationship between NATO and institutions of the EU such as the EDA developing in the immediate future? How can Smart Defence and Pooling & Sharing work effectively together?**

A close cooperation between the EU and NATO is of utmost importance. We have seen progress in recent years. The EDA and the NATO Allied Command Transformation in Norfolk work closely together. On a day-to-day basis we have managed to avoid duplication of work and to ensure complementarity. That is of utmost importance.

### **What lessons have been learned from the International Security Assistance Force (ISAF) experience? How will the end of NATO's mission in Afghanistan influence the organisation?**

If we are speaking about lessons learned in terms of capabilities, I think one of the very important developments we have seen are projects to improve our capacity to counter road side bombs and other improvised explosive devices as they have been one of the major sources of casualties in Afghanistan. In a joint Smart Defence project we have developed the best capacity to address this threat, to prevent damages and casualties.

We have also learned from the mission in Afghanistan how important it is to start training and education of local security forces soon after initiating an international military intervention. Seen retrospectively, I think that one of the mistakes we have made in Afghanistan was to start the training of Afghan security forces too late. We have launched training in earnest in 2009; it is quite impressive what we have achieved during four years but we should have started soon after we have engaged in Afghanistan.

With a view to eventual future operations of similar nature, I think one of the important lessons learned must be to begin training and education of local security forces soon after having taken action.

The end of the mission in Afghanistan will of course have a major impact on our future as it is the longest and biggest operation in the history of NATO. As we draw down in Afghanistan, we will free up resources to modernise our alliance and our military forces. We will also work on what we call the

'connected forces' initiative. Fifty nations – 28 allies and 22 partners – were engaged in Afghanistan; it is paramount that we maintain and further develop our ability to work and operate closely together. We need to step-up joint exercises, training and education. We will ensure that technical standards are set in a way so that military equipment can easily communicate and operate together.

The end of the ISAF mission means that we will go from being deployed to being prepared for all eventualities. We cannot foresee what will be our next operation but I am quite sure that one day there will be a call on NATO to take action, to protect and defend our societies against a threat we cannot foresee today. But that's the point of being a military alliance – we shall always stay prepared even for the unexpected.



"Europe has a great potential. But to reap the benefits of that we need a freer, more open, internal defence market in Europe"



### **What are the wider implications of doctrine changes in the USA for NATO and Europeans?**

There is a lot of concern in Europe about the USA's 'pivot' to Asia. The fear is that this rebalancing of US interests towards the Asia-Pacific region will take place at the expense of the transatlantic relationship and the US commitment to European security. I have two points to make in this respect. Firstly, I think it is in Europe's interest that the USA focuses more on the Asia-Pacific region taking into account the rise of emerging powers. That's also about our interests, our security.

My second point is that this development will not necessarily take place at the expense of the transatlantic relationship. It is very much for the Europeans to ensure that the USA stays committed to European security. And the way the Europeans can cultivate the transatlantic relationship is to demonstrate a commitment to fair burden sharing within our Alliance by investing financially, as well as militarily and politically.

Let me add that we have actually seen confirmation on the US commitment to European security. The USA contributes significantly to the NATO missile defence system; they have decided to rotate combat military units to Europe to participate in the NATO response force which is part of this connected forces initiative.

### **How do you see the European defence industry evolve in the future?**

I would say that EUTM Mali contributes to the strategy indirectly. Mali certainly is a fundamental element of the region. Therefore, training the Malian army contributes to the fight against the instability in the Sahel although the mission concentrates on instructing Malian military only. But these forces will later be able to cooperate with others in the region. I would therefore say that the mission is complimentary to the strategy but with an activity which is today limited to Mali only.

### **How do you see the mission develop in future?**

There is certainly a need to strengthen the European defence industrial base. In that respect, I welcome the European Commission communication on the defence and security sector. The problem is that European defence industries are too fragmented. Europeans are very often complaining about a lack of competitiveness compared to American companies. In my opinion, the reason is that our industries are too small, too fragmented. Europe has a great potential. But to reap the benefits of that we need a freer, more open, internal defence market in Europe. The European Commission proposals lead us in this direction. Of course, the communication touches on some sensitive issues as regards national interests. But seen from an overall European perspective, we need to open up markets, we need bigger units to be more competitive globally.

But the competitiveness of Europe's defence industry is also related to the level of defence investment. You cannot develop a strong European technological and industrial base if you are not willing or prepared to invest in it. I hope that Europe will focus on the critical capabilities I have mentioned before: drones, air-to-air refuelling and transport capacity. This will in turn also facilitate the development of a stronger European defence industry. 

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# > "The European Union fulfils its task"

In February 2013 the European Union launched, at the request of the Malian authorities, a training mission for the Malian armed forces. Instructors from 23 European countries under the leadership of mission commander General Bruno Guibert are training combat units of the Malian armed forces at the Koulikoro training camp. General Guibert explains to Elisabeth Schoeffmann the aim, current status and possible future developments of EUTM Mali

**The EU training mission in Mali was officially launched in February 2013 for an initial 15-month period. What are the mission's mandate and objectives?**

The mission's predominant aim is to train four battalions of the Malian armed forces in essential areas of military knowledge such as infantry (tactics), armoured combat, engineering, artillery, logistics and the basics of humanitarian law. The training is very practical and straight-forward; the aim is really to provide operational added value.

Our second mandate is to provide expert advice to the Malian authorities on the restructuring of its army. This is essential to rebuild a sound chain of command to create a solid and structured environment for their armed forces.

#### **How is the training progressing?**

The mission started six months ago and we have just completed the training of the second battalion 'Elou', which includes roughly 750 men. Each training programme lasts for about ten weeks. This is extraordinary when you consider that a typical Malian soldier hardly had any training at all. In my view, the mission is a success because there is an excellent dynamic between the European nations contributing to the mission, the Malian authorities and the soldiers being trained. The Malian Chief of Staff, General Ibrahim Dahirou Dembélé, said at the ceremony marking the end of the second battalion's training that they represented the new Malian army. And the soldiers are proud of that.

The training of the third battalion is due to commence at the end of September. A pre-training course of its commandants has already started. The fourth battalion will arrive at the beginning of January.

The training mission is also an operational success. The first battalion 'Warhaba', which has already been trained by us, has been deployed in the north of the country – in the Tessalit, Aguelhok and Anefis regions – for more than two months,



where it has collaborated with MINUSMA (United Nations Multidimensional Integrated Stabilization Mission in Mali) forces. The feedback we get is very satisfactory.

#### **How are the single European nations contributing to the mission?**

The training mission includes 550 military personnel from 23 nations of which around 200 are instructors. Each nation contributes with specific areas of expertise. This is a question of efficiency but also of coherence of the training. Spain, for example, took over commando training; Italy works on aerial training, the UK on artillery, Germany, together with Austria and Hungary instruct the Malian soldiers in first medical support. The cooperation between the Member States is very good. Minor misunderstandings might occur from time to time but all-in-all moral is very high. Each nation is convinced of the importance of the mission.

#### **How would you describe the cooperation with the Malian authorities?**

In 2012/2013, Mali just narrowly escaped a catastrophe. The political and military authorities were defenceless against the terrorist threat which gained ground every day. Today we are in very close contact with the authorities and are

helping them rebuild their armed forces. For the success of this mission, the buy-in and compliance of the authorities is a prerequisite. These days, the new administration is taking office which will have to confirm the aims of the training mission. It has already confirmed its importance; all signs are positive.

Cooperation with the military authorities is very close. I am in very regular contact with General Dembélé. We'll travel to the north together to visit the already-deployed battalions.

#### **How does the training programme relate to the EU's strategy for security and development in the Sahel?**

I would say that EUTM Mali contributes to the strategy indirectly. Mali certainly is a fundamental element of the region. Therefore, training the Malian army contributes to the fight against the instability in the Sahel although the mission concentrates on instructing Malian military only. But these forces will later be able to cooperate with others in the region. I would therefore say that the mission is complimentary to the strategy but with an activity which is today limited to Mali only.

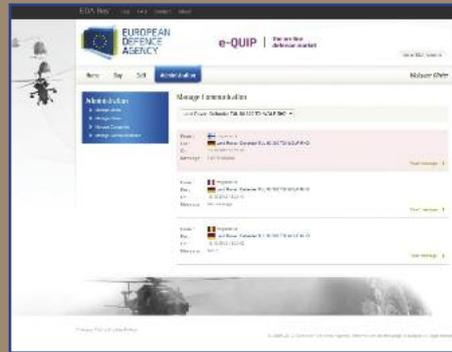
#### **How do you see the mission develop in future?**

Even though we no longer see a direct and visible threat to Mali I think that the mission should be extended. Four more battalions should be trained to ensure a coherent saturation of thoroughly-trained soldiers of this new army. The training of one battalion lasts for about three months, if we trained four more, it would require an extension of the mission for about a year. Apart from the instruction of the forces, our work on restructuring the Malian army could be deepened as well.

EUTM Mali is a fine and necessary mission. The European Union fulfils its task. And the mission's ultimate objective – to help the country – is fully recognised. Mali is a wonderful country with very welcoming people and it deserves to find its way back to peace and stability. Today, we are useful in Mali. This is what is most important to me. 

"In the past this type of sale or transfer has been dealt with by high level discussions between National Armaments Directors in bilateral talks, or via the relevant embassies. But this is not a very structured approach..."

*Daniel Klein,  
Senior Armaments  
Cooperation Officer,  
EDA*



Participating agencies can use e-Quip to inform potential buyers of the availability of surplus equipment in a clear and categorised manner



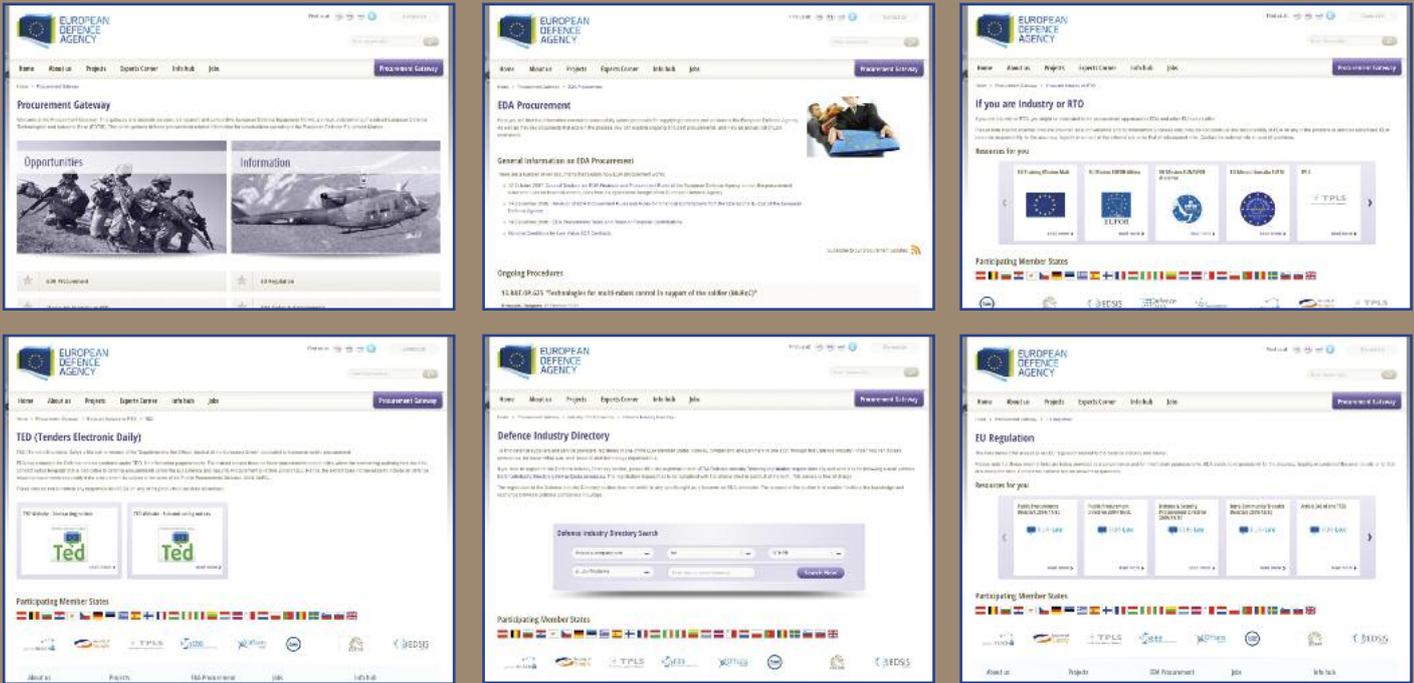
# Electronic proc bring closer co



The EDA has launched two programmes to improve the defence equipment procurement process.

Project e-Quip is a government-to-government platform where participants can identify and share redundant or surplus equipment and the Procurement Gateway gives contractors comprehensive information on procurement regulations, writes Tim Mahon





The interface for the Procurement Gateway has been designed from the outset to be as simple, user-friendly and intuitive as possible

# Procurement initiatives operation

The EDA in June 2013 launched e-Quip, a government-to-government electronic market place for surplus defence equipment. Through e-Quip national governments can exchange information on available assets ranging from defence equipment such as armoured vehicles or fighter aircraft through to ammunition, space systems and even logistics, training and maintenance services.

At the time of launch 13 Member States had access to the platform, which is open for all EDA participating Member States as well as states with which the Agency has an administrative agreement. E-Quip is designed as a cost-free, non-commercial market platform that brings together potential buyers and sellers. The initiative dates from February 2012, according to Daniel Klein, EDA's Senior Armaments Cooperation Officer, when a small number of nations "decided it would be a good idea to have an electronic market tool to help in the issue of surplus equipment – from the perspectives of both supply and demand".

"In the past this type of sale or transfer has been dealt with by high level discussions between National Armaments Directors in bilateral talks, or via the relevant embassies. But this is not a very structured approach and if you are talking about all 27 nations participating across a broad spectrum of equipment, with many line items, it is not a very efficient

method of achieving the objective," said Klein.

It was also important, however, to ensure that this was not a commercial service. Participating Member States cannot sell or buy anything online through e-Quip; it is more of a 'match-making service' – an information exchange platform that puts some structure and transparency around the early stages of the process.

EDA has developed the software in-house "using agile methodologies and additional programming methodologies," said Olivier Havel, Deputy Head of the Agency's Information Technology Unit. The result has been a very user-friendly and intuitive interface. Close discussion with and feedback from national project officers have informed a series of enhancements and capabilities that make it an extremely agile tool for the future. The current beta version will remain in situ on a distributed basis while the final version is engineered by the EDA, according to Patrick Rey, Assistant Director Armament, who said that a training period of only one or two hours is required for someone to become fully functional in operating and understanding the tool.

Considerable work is now being devoted to determining and agreeing the terms of reference of the database that underlies e-Quip. The major categories of equipment – land, sea, air, space and so on – may be obvious, but the process of defining the hundreds of sub-categories into which equipment or services on offer →

"We know that language is a problem, since some of the websites are in the relevant national language – but our first priority has been to provide comprehensive information; the second is the identification of business opportunities"

*Isabelle Desjeux,  
Principal Officer Defence  
Markets, EDA*



might fall should not be under-estimated. There are already some indications of the way the database may take initial shape, said Klein. "There are large numbers of protected vehicles returning from current operations as a result of the withdrawal of forces from Iraq and Afghanistan, for example, and another category may include equipment that is being considered for disposal as a result of budget pressures or changes in future operational requirements – main battle tanks are a good case in point," he said.

The establishment of a non-commercial government to government portal such as e-Quip carries multiple benefits with it. The political aspirations and security policies of an individual nation may well be effectively served in providing for transfer of surplus equipment to a partner nation at extremely low prices compared with those that a more commercialised operation would need to levy. The issue of flexibility is an important one from another perspective. "The EDA will provide central administrative services for the database, but it is very important that each Member State be able to define the 'customer nations' that will be able to see the items they enter into it," said Havel. This discrimination – which national operators will be able to cater for down to the level of individual line items – provides for the flexibility to ensure that there is no conflict arising from the aspiration of a buyer nation seeking to obtain items the selling nation's export control policies make impossible. "The degree of access granularity built into the platform will prevent this from happening," said Havel.

This issue may, perhaps, not be of critical importance in the early stages, since free exchange between the Member States within Europe should not present export control problems of any substantial nature. But if in the future – as seems likely – the platform is extended to potential buyer nations outside Europe, the

issue of access discrimination will be of concern to nations with equipment to dispose of. Such extension will be "to buyer nations only – we do not plan to invite non-European nations to list their equipment for disposal," said Klein. The possibility may in future exist, however, for such nations to list needs that may be of interest for Member States that have not yet listed equipment for disposal in the specific relevant category.

A group of experts from the Member States has been meeting regularly to discuss the experience with the beta version and make recommendations for further development. In the space of a year the Agency has taken project e-Quip from the concept of "can we do something to provide a structure within to do this?" to the stage at which it is fit for use. Technical complexity – which is considerable, according to Havel – is hidden from the user through the use of a transparent and easily understandable interface. Flexibility to cater for the different political and operational needs of both seller and buyer nations has been built in from the start. The entire project has been achieved without outsourcing, to cater for the degree of sensitivity of the information contained in the database.

As an additional service to smooth procurement cooperation, the Agency has also launched a Procurement Gateway, accessible through the EDA website. Isabelle Desjeux, EDA's Principal Officer Defence Markets, said the intention of the gateway was "to provide all contractors – but particularly SMEs (small and medium sized enterprises) – with access to all the regulations governing defence procurement for all 27 nations."

The gateway offers access in a single federation of resources to regulatory information at national and EU levels and provides further ancillary information that will prove useful for any company seeking opportunities in the European defence market. The information is sourced direct from the participating Member States and the gateway seeks to be a 'one stop shop' for industry.

Desjeux said the limitations in the gateway's initial iteration were being addressed as its function is enhanced and improved. "This is a first step and is already helpful because users do not need to browse 27 separate sources. We know that language is a problem, since some of the websites are in the relevant national language – but our first priority has been to provide comprehensive information; the second is the identification of business opportunities," she said. Business opportunities at the moment appear as a result of links to TED – Tenders Electronic Daily, the official journal of the EU dealing with requests and invitations for tender as well as national on-line official journals.

The work to create the gateway started about a year ago and has been entirely funded within the Agency, said Desjeux. Officially launched at the end of June this year, the service has already attracted positive feedback and there are a number of initiatives under way to enhance the utility of the service. Not the least of these is a 'Defence Industry Directory' of companies in the European defence and security community. Companies can take advantage of an entry in the directory to promote and enhance awareness of their capabilities.

Project e-Quip and the Procurement Gateway between them offer a powerful demonstration of EDA's commitment to smoothing the path to procurement collaboration and rationalisation. Work to increase the utility of both services continues as Member States feed-back their experiences with both systems. 

 Officially launched at the end of June this year, the service has already attracted positive feedback and there are a number of initiatives under way to enhance the utility of the service 

# Cyber defence: combating threats to both civil and military institutions

The EDA is working in several different but related technology and operational areas to help implement a comprehensive cyber defence strategy for Europe, writes Tim Mahon

**T**he EDA's work on cyber security is picking up pace and now covers multiple activities as part of the Agency's work to support Member States' national efforts. Recognition of the serious nature of the threat is paramount, according to the Agency's Project Officer, Cyber, Wolfgang Roehrig. "We have to recognise that cyber is a discreet operational domain, just like land, sea, air and space," he said, adding that military cyber security cannot be considered separately from an overall government-wide cyber strategy.

The variation in perception and capabilities among Member States is considerable and necessitates a very structured approach by the Agency. To take one nation's view as an example, the UK recently announced that the government's secure intranet is the subject of some 400,000 separate attacks every year and that, as a result, the government is launching an offensive component of its cyber security strategy. Not every nation has the same perception or, indeed, the same capability to respond.

The starting point, according to Roehrig, is to accept that systems cannot be protected 100% "...because you have to assume that they, the enemy, are already in," he said. With Microsoft Windows source code, for example, containing around 3.5 million lines of code there will always be vulnerabilities. So the principal thrust of EDA's cyber work to date has been to establish and agree a common environment from which to grow a strategic approach.

The springboard from which these activities are launched has been a 'landscaping study' performed by Rand Europe and the Paris-based Fondation pour la Recherche Stratégique, delivered at the end of 2012. Within this study, EDA has developed a five-level maturity model, against which the current situation, knowledge and capability of each nation's cyber strategy has been assessed. "These levels

vary enormously across Member States, and the velocity and agility of the threat means that these variations will continue," said Roehrig.

There are four main work strands being addressed by EDA in the current project, aimed at developing a strategy from which all Member States can benefit, no matter what their current maturity level.

First is training – limited, at first, to military personnel. What Roehrig describes as "a holistic training needs analysis" is being conducted, with the aim of providing a curriculum, or menu of training activities, that will address the needs of the armed forces across Europe. This work is being coordinated with the European Union Agency for Network and Information Security (ENISA), based in Heraklion, Crete.

The second strand is focused on improving the situational awareness (SA), from a cyber perspective, of the headquarters units that will coordinate future EU missions. There is current lobbying for funds from which a SA Capability Kit can be provided to such headquarters units. Using a dynamic risk management model, these kits would be a first step towards supporting the human factors part of the equation, according to Michael Sieber from the Agency's Research and Technology Directorate.

"This is not about technology for technology's sake – this is about how to employ technology in support of the human," he said, reinforcing one of the prime tenets of the cyber work at EDA – that it is about people, not only technology.

The third area of work focuses on strengthening existing capability in the fastest and most efficient manner. "What architecture do we need? What are the component parts of the capability required? What are the minimum standards acceptable in future missions?" said Roehrig. One of the most important initiatives in this work strand is the creation of virtual

'cyber ranges' in which regular training and 'what if' scenarios can be facilitated. Making this sort of facility available to Member States and then analysing the varying results of national training activities will inform the way in which a common architecture can be developed, which in turn will lead to the Holy Grail of being able to federate a network of cyber ranges across Europe.

The final current work strand focuses on encouraging technological cooperation – not only between nations but between civil and military government agencies within nations. On the premise that there is 95% commonality in the threat, regardless of whether the target is military or civil, further sources of funding and expertise across the full spectrum of European institutions is now being sought.

Sieber illustrates the importance of this collaborative approach in describing a workshop



"We have to recognise that cyber is a discreet operational domain, just like land, sea, air and space"

**Wolfgang Roehrig**  
Project Officer, Cyber, EDA

that took place in October 2012 to examine possible research and innovation, for example, to protect European satellite communications from attacks. "We took from this the potential benefits of using modelling and simulation for doctrinal development and the possible mining of the defence industrial base for crypto-logical expertise," he said.

There is a long way to go, but the Agency is providing a valuable and stable virtual platform from which a cohesive and comprehensive pan-European cyber security strategy can be implemented – sooner, rather than later. ■

# ➤ Advancing armament cooperation know-how

With tight European defence budgets the need for more effective spending increases. The EDA, the European Security and Defence College (ESDC) and the Austrian Ministry of Defence and Sports have established a two-level European Armaments Cooperation (EAC) course which allows participants to learn more about the essentials and finer points of armament cooperation, writes Elisabeth Schoeffmann



**C**urrent prominent cooperative armament projects include the NHIndustries NH90 military helicopter and the Airbus Military A400M Atlas transport aircraft. For the latter, a milestone was achieved with the official handover of the first aircraft to France in September this year. While these two examples are flagship programmes, cooperation on a smaller scale is becoming more frequent. "The EDA supports cooperative equipment programmes on different levels," said Giampaolo Lillo, Armaments Director of the EDA. "We have established a close relationship with OCCAR, the European organisation for joint armament cooperation. EDA has also developed an effective procurement methods initiative which supports Member States directly in common acquisition programmes. Education and training of staff working in international armament projects is another way to facilitate cooperation in this domain in the long run."

The EAC course is the first European Union joint training initiative to address the specific issue

of armament cooperation. Its main aim is to train national experts to efficiently undertake international armament cooperation projects in the context of a developing Common Security and Defence Policy. Ernst Felberbauer of the Austrian National Defence Academy and EAC course

Wolfgang Sagmeister from the Austrian Defence Ministry, and one of the instigators of the course, said that while soldiers from all over Europe might learn the same commands, a common language for cooperative acquisition programmes is missing. While some countries run these kinds of training courses in others there is little or no formal preparation for international tasks. "If we want to strengthen armament cooperation in Europe, we need to speak a common language," said Sagmeister. "We need to develop a common understanding of basic principles, institutions and possibilities. The course also offers the opportunity to learn from best practices and to establish networks." He is certain that this alumni network will be one of the key factors for enhanced cooperation in future. "Trust is important in international cooperation. I can only trust someone that I know."

The EAC course is innovative in its set-up. It builds on three separate modules. A web-based preparatory module has been developed to assure a common basic knowledge among participants. The awareness level course targets programme



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director said: "Experts taking part gain deeper insights into the main trends in capability development and armament cooperation, analyse existing frameworks and identify best practices and lessons learned. The course also focuses on the principles of strategic management and common tools in European armament cooperation and aims to establish a group of multipliers for the concept of armament cooperation and its added value in the development of CSDP. Within the EU and globally, no comparable training mechanism for armament experts exists."

"Current prominent cooperative armament projects include the NHIndustries NH90 military helicopter and the Airbus Military A400M Atlas transport aircraft"



Images courtesy of NHIndustries

managers and comprises three-day residential training concentrating on the political and economic environment, intercultural awareness, institutions and stakeholders. The five days expert level course, which builds on the other two, tackles programme management skills, international rules and regulations and cooperative frameworks. It concentrates on best practices and lessons learned to give participants as much practical advice as possible. A very successful pilot course was delivered in 2012 with a total of 50 participants coming from EDA Member States and the industry. Feedback from participants was very positive and highlighted the relevance of the cases discussed; they also appreciated exchanging knowledge and experience with colleagues from other Member States.

The second course takes place in October (awareness level) and November (expert level) this year. "On the basis of this first course in 2012, the European Security and Defence College

established a standard curriculum for the EAC course with validity for all Member States. Based on the participant feedback, we have increased the interactive sessions in the course, with an additional focus on intercultural awareness



"Education and training of staff working in international armament projects facilitates cooperation in this domain in the long run"

**Giampaolo Lillo**  
Armaments Director, EDA

training and interactive core management skills. For Austria, the course is an important contribution to EDA's Pooling & Sharing initiative", said Ernst Felberbauer.

While the EAC course mainly targets representatives from national ministries of defence it also has advantages for industry; cooperation experts have easier access to European acquisition opportunities which they can then communicate to their national industrial organisations. 

# ➤ Progress on integrating unmanned systems into civil airspace

The EDA has a key role to play in the coordination of European efforts to integrate unmanned aircraft into European airspace, writes Tim Mahon

**T**here is a complex matrix of issues confronting those European bodies involved in smoothing the path for routine insertion of Remotely Piloted Aircraft Systems (RPAS) into domestic airspace. The agreement of pan-European regulations, the issue of 'sense and avoid' – the degree to which RPAS are able autonomously to detect other objects in the airspace and take evasive action where necessary – and agreeing the standards of airworthiness all have to be addressed and resolved before the real benefits of the utility of these systems can be realised. Which is why the EDA has taken a prominent position among the various EU institutions, bringing its expertise to bear on the wealth of separate concerns that will govern future use of RPAS in both military and civil domains.

One of the more important milestones en route to the target date of 2016 for the start of routine, safe and incremental insertion of civil RPAS into European air traffic was the handover of the European RPAS Roadmap, which took place at the Paris air Show in June this year, according to

David Chinn, Assistant Research & Technology Director at EDA. "The roadmap, which is the product of a lot of work by the European RPAS Steering Group (ERSG) and the Commission's Directorate General of Mobility & Transport (DGMOVE) in coordinating the efforts of participating Member States, addresses the interests of all users," he said.

Philippe Leopold, EDA's Project Officer Capability Progress, said the coordination of multiple work strands is characteristic of the work in which EDA is currently engaged. "We have airworthiness issues under study, using the established Military Airworthiness Process; we are working on the creation of a 'user group' for existing operators of RPAS in Europe – primarily those nations operating the Reaper; the MIDCAS (Mid-Air Collision Avoidance System) programme is addressing the issue of 'sense and avoid,' and the DeSIRE (Demonstration of Satellites enabling the Insertion of RPAS in Europe) programme has just completed phase one and we are now embarking on phase two," he said.

"That interoperability will come about largely as a result of establishing common training standards and courses, an area in which the Agency has a degree of expertise at facilitating."

DeSIRE is a joint programme being run by EDA and the European Space Agency (ESA). Led by



Spanish company Indra and taking place in Spanish airspace, the programme aims to demonstrate the safe insertion of RPAS in non-segregated airspace using satellite capabilities for command and control, air traffic management communications and the transfer of mission data to ground stations. Using a Heron I RPAS, several test and evaluation flights will provide airborne

"the MIDCAS programme is addressing the issue of 'sense and avoid;' and the DeSIRE programme has just completed phase one and we are now embarking on phase two"



maritime surveillance data to users during the evaluation period, which will come to an end in late 2014.

MIDCAS is an EDA-sponsored €50 million programme to develop advanced collision avoidance capabilities and processes for RPAS. With Sweden as the lead nation, some 13 companies from the five participating Member States will demonstrate standardisation, systems engineering, safety and conduct thorough test and evaluation on a demonstrator airframe in France and Sweden, with completion scheduled for the first half of 2014.

Simultaneously with the regulatory and evaluation work being conducted, EDA is also concentrating on other pillars of the overall RPAS requirement. These include the creation of a user group, focused on the European nations currently deploying the Reaper RPAS in military roles, which aims to bring relevant military operational experience to the mix, as well as ensuring a high degree of future interoperability between nations. This interoperability will come about largely as a result of establishing common training standards

and courses, an area in which the Agency has a degree of expertise at facilitating.

Since the military are the only current users of medium-altitude long-endurance (MALE) RPAS in Europe, their experience should inform the



**"interoperability will come about largely as a result of establishing common training standards and courses"**



current and future EU developments in a significant manner. Also under way is a programme that aims to reduce the costs associated with inserting RPAS into civil airspace by standardising all the issues surrounding certification of the airframes. Integrating military RPAS into civil airspace will be a challenge for all

European air forces when they have to train in Europe after their withdrawal for theatre of operations like Afghanistan. Air traffic insertion (ATI) is key issue in the definition of a possible European programme on MALE RPAS developed in Europe, another initiative conducted in the EDA framework. The agreement of a common staff target (CST) on operational requirements for future generations of RPAS will be fundamental to defining all aspects of the EDA's interoperability work.

"This may seem like a lot of work – and it is. But it is essential if we are to succeed in the goal and the tight timeline we have before us. Two of the strands we are working on now (the user group and cost reduction initiatives) didn't even exist a year ago. But we are driven by the question of what happens if we don't do this," said Leopold.

He is right to point out that timing is the key issue. With a target date of 2016 set for realisation of the goal of being able to operate RPAS safely and routinely in the skies over Europe, the coordination role of the EDA is a vital component of the work being conducted across the continent. ◀

# › Moving towards more joint military airworthiness standards



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European Union States have begun the process of implementing a single set of harmonised European military airworthiness standards, though there is still much more to be done, reports Philip Butterworth-Hayes

**T**he agreement between France and the UK to jointly implement European Military Airworthiness Requirements (EMARs) into their national regulations to cover the approval of maintenance organisations to support Airbus Military A400M operations is an important step in the process of introducing common harmonised EU military airworthiness requirements.

Under the current schedule, both countries will implement EMAR 145 - covering the approval of maintenance organisations and the activities they undertake - by September 2014.

"This creates the opportunity for cross-border maintenance," said Jurgen Stegmeir, Assistant Director Armament Policy at the European Defence Agency (EDA), "Germany is now also looking at implementing the EMARs into its national regulations."

As well as EMAR 145, two other EMARS have also been released: EMAR 21 for the certification of new aircraft - including the approval of the design and production organisations, and EMAR147 detailing the responsibilities of organisations responsible for the training of maintenance personnel (see *European Defence Matters, issue 2*).

The benefits of developing a common set of European-wide certification standards will be substantial. According to an EDA study, the implementation of the EMARs into national regulations by participating Member States would deliver a reduction of up to 50% of the development time and at least 10% development cost up to initial type certification. Significant further cost savings are achievable during the aircraft's in-service phase.

Participating Member States have agreed to work towards implementing common European Military Airworthiness Certification Criteria (EMACC) that can be used as the basis for certifying newly

developed and/or modified military aircraft by 2015, and the EDA has been working to set up the institutional framework to facilitate this. In June 2013 at the Paris Air Show, the EDA's Chief Executive Claude-France Arnould and Patrick Goudou, Executive Director of the European Aviation Safety Agency (EASA), signed an agreement of enhanced cooperation in the harmonization of military aviation safety requirements with a primary focus on airworthiness. Also at the Air Show, the EDA 'delivered' the released EMARs to OCCAR (the Organisation Conjointe de Coopération en matière d'Armement), which is now considering how they might be integrated within the organization's Project Management Plan (PMP).

While the near-term focus of joint work is on the introduction of the A400M - which has already been certified by EASA in its civil aircraft configuration - other areas of joint activity include Remotely Piloted Aircraft Systems (RPAS). "At the European Council in December where defence issues will be discussed, one of the most important subjects will be certification and standardisation of dual-use RPAS platforms and systems," said Jurgen Stegmeir. "When we look into our co-operation with EASA in the future, we should perhaps consider forming a community of certification representatives where we could develop military standards which could then be adopted by EASA. We shouldn't be in a position merely to wait to see what our civil colleagues do, because with RPAS there is only a very small civil market. It is essential that the military present their solutions - a certified military RPAS fulfilling a future specification for operation in civil airspace could then be acknowledged by EASA."

The EMARs can be used to cover RPAS as well. It is therefore possible that a new Task Force could be formed by the end of the year so that EDA - in

co-operation with the European Commission and EASA, for example - might be able to develop the framework conditions for the certification of RPAS, including both the air vehicle and ground systems, as well as the insertion of these systems into civil airspace.

This all suggests that in the future, especially if supported by possible European Council agreements to speed up standardisation work, participating Member States could develop a more comprehensive way of implementing military aircraft certification standards. "There is currently a huge European Stakeholder landscape that is not perfectly linked. This might be the catalyst needed for a mandate for the development and expansion of the Military Airworthiness Authorities (MAWA) Forum," said Jurgen Stegmeir. The MAWA has been established to harmonise European military airworthiness requirements and processes of the participating Member States and comprises representatives from National Military Airworthiness Authorities. It is chaired by the EDA, which also provides the organisational and administrative support.

But for the moment the challenge is to increase the number of Member States implementing EMARs into their national regulations. Because of the high degree of customisation of military platforms and air systems, many Member States are possibly more comfortable remaining with their current system of national approvals. However, with increasing Pooling & Sharing of capabilities, it is likely that in the very near future the new generations of platforms, such as the Airbus Military A330 Multi Role Tanker Transport (MRTT) - which are likely to be operated in increasingly close cooperation between Member States - will offer more opportunities for shared maintenance and certification protocols. **K**

# › The European defence and security environment and geopolitical threats

Europe faces a multitude of short-term and long-term threats which can only be met by a major re-appraisal of the way national and European Union organisations work more closely together

**I**n the era of multi-polarity - with multiple centres of power or influence - the most destabilizing threats to world order are systemic. They concern global and medium sized powers and their areas of geo-strategic influence. They have made obsolete in Europe the traditional concept of national defence. The front line is now at the periphery of - or outside - Europe, forcing European states to act together in a coordinated and proactive manner.

We are now witnessing the coming together of three cycles of crisis: the crisis of decline and alternating hegemonies (which happen about every 100 years), changes in the economic cycle (about 40-60 years, according to the Kondratieff model) and long-term systemic and civilizational transition crises (many centuries). This creates multiple scenarios of conflict. Strategic responses by the European Union (EU) depend firstly on its interpretation of the international system; then on the nature of risk; institutional leadership, forces' structure and capabilities; and finally the network of alliances - collective security among coalition States.

The military effectiveness of the EU also depends on the political and operational arrangements between the Member States, NATO and the USA as they set the framework within which strategic partnerships in the West are formed. But such effectiveness is primarily the result of its strategic autonomy. A Europe of 28

States as a regional group still faces threats of political destabilization in its immediate vicinity, in its southern and eastern peripheries and in internal revolts or civil insurrections.

Such threats do not overshadow more strategic concerns, such as Russian-US tensions, the underlying rivalry between the USA and China and between Japan and China in the Far East. In the view of Brussels, the definition of 'opponents' and their war aims among States in the Middle East - as well as the challenge of Russia and the Euro-Asian region - requires a strong and independent Europe, a 'partnership in leadership'.

## Enlargement, neighbourhood and security dilemmas of the EU

However, the enlargement of the EU, resulting from the restructuring of the continent since 1989, has opened new areas of tensions, crises and conflicts. The security dilemmas of Europe raise questions about what sort of neighbourhood policies to pursue in areas such as the Western Balkans, the Caucasus, the Turkish Plateau, the Gulf and Central Asia.

Consequently, the geopolitics of global threats is changing. There are direct threats - terrorism and cyber attacks - and growing vulnerabilities in areas such as intimidation, blackmail and subversion. There are also threats of disintegration, societal decomposition, chronic instability and diffused conflicts outside Europe in regions of pre-modernity



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and lawlessness. If the threat takes precedence over confrontation, respondents are divided.

In the European context, diplomatic reactions are the competence of the EU while military responses are the competence of NATO. No 'linkage' politically exists between the two structures in the development of a foreign policy. The southern and eastern outskirts of the Union, unstable and unpredictable, have blurred the political calculation and aggravated the strategic uncertainty.

Cooperation such as Pooling & Sharing between Member States has become vital because defence concerns - such as falling budgets- are now widely shared. Maintaining the EU's border security has been an issue of strategic disinterest until recently but now most actors have responded massively, though belatedly and in a disorganized manner, to events such as the Georgian crisis, the Arab uprisings and the Syrian conflict. These are the first multipolar conflicts of the post-Cold War era.

Within the EU the defence capabilities of the Member States can be defined in two ways - as 'consumers' and 'producers' of security in a geopolitical environment. The 'producers' are located in the centre of Europe in a peaceful environment, the 'consumers' on the outskirts of the Union and in the troubled regions. For the 'consumer' countries security assurance has been weighted in favour of a rapid accession to NATO. For the 'producer' countries, it has slowed down their autonomous evolution towards the USA and the rest of the world. →

"Cooperation such as Pooling & Sharing between Member States has become vital because defence concerns – such as falling budgets – are now widely shared"

The strategic autonomy of Europe has decreased due to an increasing dependence on the global market for energy, information and transport infrastructure.

**The military sovereignty of the EU and its limits**

The identification of direct and indirect threats that have led to a common European defence policy, include 'offensive' protection measures – or effective countermeasures – developed in the industrial area and through research and technology development. Threats come from attacks by potential enemies and the weakening of our strategic autonomy. Europe's military sovereignty and its strategic autonomy are limited through the control systems it has inherited as a result of acquiring two defence systems based on 'American Homeland' defence architectures- anti-ballistic missile (ABM) defence systems and the intelligence gathering data system of the National Security Agency (NSA).

ABMs were designed to counter attacks from weapons of mass destruction (WMD) at European borders; the digital information system managed by the NSA is aimed at gathering Internet-based data. If the first is regional, the second is global. The meta-databases stored by the information system are analysed by software programs using statistical and probabilistic algorithms – which are essential to counter direct threats. They are major assets in the global war against terror and cyber threats. The information collected constitutes a database indispensable to the conduct of war – including covert and economic – and towards a pooling of defensive resources and European countermeasures needed in the form of an advanced digital policy.

**Conventional societal threats, intra-State conflicts and indirect confrontations**

Open threats, fought with conventional methods and means, include illegal activities, immigration, mass violence, piracy, control of territories, resources and the protection of land and sea lines of communication. The geopolitical competition for resources will also increase conflict, which grows in periods of transition and movement towards democracy.

Europe will need to meet the difficult challenge of identifying and naming the State actors behind hostile acts in these areas. Coordinating responses to these will be needed and here Europe is vulnerable in several areas, the most important being the timidity of the elite, 'débelligisation' of society and the moral disarmament of opinions.

The offensive led in the Muslim world by Al-Qaeda Jihadists and the Salafist forces - such as the Al Nosra



front against Bashar Al Assad in Syria and against the government in Egypt – are linked in their forms of indirect confrontation, violently disrupting public spaces. They rely on the concept of the fourth Generation War (4G4) – the war of the weak against the strong, without a front and with no possibility of reply from their political opposition.

The threat to Europe comes from the recruitment and training of fighters to project this combat in Europe. This threat, severe and degenerative, aims to generate internal insurrections. It is externally generated and manifests itself in the form of civil wars in openly democratic countries such as Greece, Spain, France, the UK and Germany. This threat is likely to break the democratic consensus, divide defence institutions of public order and ruin the European ideal.

### The capability gaps of the European Union

Technology change also increases the overall vulnerability of developed societies. European vulnerabilities appear as capability gaps in at least three areas: the lack of effectiveness in preventing crises; duplication of efforts that impede cooperation and pooling of resources; an absence of investment in the preservation of the defence industrial base alongside an inability to develop synergies in technology and the lack of suitable single market legislation.

The foundation of a European defence policy can be summarized in one key requirement: the implementation of a common response to threats. The Lisbon Treaty provides the framework of 'Permanent Reinforced Cooperation'. It is in this context that an active investment policy of re-industrialization of Europe makes sense. The idea of a European defence policy can only be justified on the basis of pre-positioning operational units in readiness for military action. This was the concept behind the 'battle groups (BGs)' – quick reaction forces set up at short notice and at the beginning of a violent crisis.

BGs are structural parts of the Common Security and Defence Policy (CSDP) which sets political and operational limits. They must respect two principles: the involvement of all actors; and an organisational flexibility that includes civil and military expertise.

### From the analysis of threats to the definition of European interests

Faced with threats, vulnerabilities and weaknesses that undermine Europe's overall

security, rationalization and the pooling of resources is certainly needed. But it should be subordinated to Europe's geopolitical interests. In a world ruled by power politics, the success of a foreign policy and external action of the Union will depend in the future on Member States agreeing the objectives achievable through the EU as a 'force multiplier'. This implies that Europe focuses on a limited number of strategic priorities. It will also depend on policy instruments adapted to achieving mission success and giving the military necessary resources. It will also need European institutions to ensure coherence between the EU missions and national actions.

### A European Pentagon?

The spectrum of both military threats and non-military security risks could broaden the concept of defence so it becomes dual (internal and external) and global (multidimensional). Intra-State and inter-governmental coordination between EU Members to

meet these threats could lead to a reconsideration of the best way to develop a common response. The strategic autonomy of the EU could take the form of an institutional coordination around the concept of a 'European Pentagon'. At the heart of this concept, inspired by the Nice and Lisbon treaties, EU bodies could flexibly adapt their strategies depending on the general orientation of the European Council:

- For security and intelligence policy: the Political and Security Committee (PSC) which is responsible for regional strategic planning, Europe's anti-ballistic missile system, the EU's nuclear deterrent strategy and the internal supervision of the fight against terrorism;
- For strategic, operational and doctrinal orientations: the Military Staff and the Military Committee of the European Union (EUMS and EUMC), with a full, independent and permanent chain of command, including anti-ballistic and nuclear components;
- For scientific and industrial policies, robotics, RDT and the internal defence market: the Commission;
- For the promotion of competitiveness and permanent innovation: the European Defence Agency (EDA), specifically responsible for airspace policy, strategic air transport and satellite observation systems, for

communication and localization, backed by a specialist strategic intelligence agency;

- For diplomacy, foreign affairs and the Common Security and Defence Policy (CFSP and CSDP): the High Representative and the European External Action Service (EEAS).

The European Pentagon is a holographic futuristic hypothesis. Its object is to consolidate the skills and power of the EU, which has until now only been considered from a functional viewpoint rather than a strategic or operational one. It has no analogy with its US counterpart or ambitions other than to formulate a project of reflection on the need for an effective joint defence policy. The concept has been developed to:

- Promote joint institutional action in the fields of deterrence and proliferation policy, linking conventional and nuclear defence;
- Transfer national power to a common European body;
- Promote a two-step consideration of existential issues facing France, Germany and the countries of the 'Weimar Plus' community and then draw in other treaty signatories in accordance with the respective sovereignty interests;
- Give Germany the responsibility at the politico-strategic level to engage in the long term definition of options for a triumvirate of France, the UK and Germany to determine ballistic and nuclear policies, where committees of senior experts would aim to establish a system of 'dual-use' offering a security guarantee to all members;
- Provide a more advanced strategic integration and with a stronger political impact;
- Create a common understanding of the international system and promote a common global threat response methodology;
- Develop a doctrine of proportionality and the progressive deployment of military force;
- Develop agreement around the defence elements to the EU economic and social policies;
- Promote the adoption of a 'different' kind of partnership between Member States and a re-balance between global powers – and primarily with the USA – in the definition of a transpacific strategy and a Eurasian condominium with China.

The European Council would have authority over the 'European Pentagon' and be supported by a think-tank of global international politicians, independent and attached to a network of National Institutes of Foreign Policy.

With so many unsolved problems a new political organization will be needed which will promote a realistic adaptation of the international system to the needs of the twenty-first century. ■

  
**"The security dilemmas of Europe raise questions about what sort of neighbourhood policies to pursue in areas such as the Western Balkans, the Caucasus, the Turkish Plateau, the Gulf and Central Asia"**  


# Key Quotes

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"There is certainly scope for further enhancing cooperation among the Member States to develop and deploy capabilities. In addition, the defence industry can be a driver for jobs, growth and innovation"

*Catherine Ashton, High Representative of the Union for Foreign Affairs and Security Policy and Head of the EDA*

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"Our role is not only a coordinating and facilitating one. We are a small agency – but we are lean and mean and focused on answering the right question – not dreaming about technology. We can have – we ought to have – a dramatic influence if we do this right"

*Christian Bréant, the EDA's Director of Research and Technology*



## Page 13

"Europe needs a more effective defence and security policy for three main reasons. Firstly, because this is essential to reinforce our foreign policy and the European Union's role in the world... Secondly, because in times of economic constraints we need to make a better use of public money... Thirdly, the defence and security sector is a major industrial cluster in Europe"

*José Manuel Barroso, President of the European Commission*

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"The waters of the North Sea, for example, do not change their characteristics at the Belgian border so it would be a great pity if all the nations bordering the North Sea developed their own immersion suits or hydro-graphic survey equipment – or even conducted the same research studies"

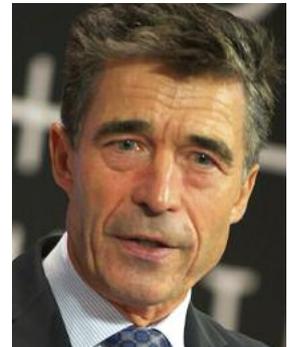
*General Gerard Van Caelenberge, Belgian Chief of Defence*



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"The EDA and the NATO Allied Command Transformation in Norfolk work closely together. On a day-to-day basis we have managed to avoid duplication of work and to ensure complementarity. That is of utmost importance"

*Anders Fogh Rasmussen, Secretary General of NATO*



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"If we want to strengthen armament cooperation in Europe, we need to speak a common language. We need to develop a common understanding of basic principles, institutions and possibilities"

*Wolfgang Sagemester, Austrian Defence Ministry*

## Page 8

**During Hot Blade 2013 (HB13) a total of 324 sorties and over 960 helicopter hours were flown**

## Page 29

*With Microsoft Windows source code, for example, containing around 3.5 million lines of code there will always be vulnerabilities*



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