

SDA Monthly Roundtable

The outlook for security and defence technologies



Bibliothèque Solvay, Brussels, and Atlantic Council of the United States, Washington, D.C.



This roundtable was supported by Motorola and EADS in Brussels, and SAAB in Washington

SECURITY & DEFENCE AGENDA

A *Security & Defence Agenda* Report

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Year of publication: 2008

SECURITY & DEFENCE AGENDA

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SECURITY & DEFENCE AGENDA

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Monthly Roundtable - Monday, 5 May 2008, Bibliothèque Solvay, 12:00-16:00

The outlook for security and defence technologies

Session I

12:00-13:30

Making advanced technologies more coherent

NATO and the European Defence Agency (EDA) are working to develop technologies that span both civilian and military security applications. Is a major transatlantic political initiative now needed to ensure that new technologies ranging from unmanned aircraft to space-borne communications unite rather than divide the western nations? NATO and EU-badged missions as well as domestic public safety services now face 'asymmetric' challenges - what are the lessons to be drawn from present operations and incidents? In the field, network centric troops will clearly enjoy a substantial advantage over their opponents, but will the different national systems under development be truly interoperable? With public safety first responders such as police, fire-fighters and other emergency services vying for the same broadband-based networks, what is the outlook for a harmonised radio spectrum across Europe?

Lunch

13:30-14:30

Session II

14:30-16:00

Will there be a common NATO and EU approach to future defence technologies?

TRANSATLANTIC SESSION VIA SATELLITE WITH WASHINGTON DC

Future warfare technologies span both 'boots on the ground' operations and 'star wars' systems like missile defences and electromagnetic pulse jamming devices. What they have in common in Europe, though, is lukewarm political support and dwindling defence budgets. How successful will be the EDA's effort to create an EU-wide common approach to developing network centric capabilities in support of crisis-management operations? Will NATO and the EU be able to adopt a common approach to the next generation of military technologies? Is the recent agreement by EU transport ministers allowing European bidders to partner with US companies on the Galileo sat-nav system a step in the right direction for transatlantic technology cooperation?

Executive summary

One of the key points to emerge from two debates on the outlook for security and defence technologies - organised by the Security and Defence Agenda and the Atlantic Council of the United States on 5 May 2008 — was the importance of having interoperable communications networks both in Europe and between Europe and the US as well as between Europe and other civ-mil partners. This is regarded as important not just for combat operations abroad but also for the exchange of information between civilian and military users as part of the reconstruction process in countries where the international community is active.

Joint R&T priorities for EU member states

It also emerged that the European Defence Agency is working towards proposing research and technology priorities for its member countries. The point here is to establish which areas EDA Member States decide that they want to invest in jointly or on a national basis and which they should be prepared to buy off-the-shelf technology from other countries such as the US. “In terms of joint projects, if we had a common set of priorities, national decisions on where to allocate funding and resources would be taken more with reference to that agenda and there would be more collaborative undertakings in Defence R&T,” said **Bertrand de Cordoue**, Director of Research and Technology at the European Defence Agency (EDA). He



**Giles Merritt, Director,
Security & Defence Agenda**

also explained that the EDA was keen on non necessarily duplicating NATO in this field, relying for that mostly on on its 20 Member States which are also in NATO.

Call for harmonized and dedicated spectrum for public safety services

Jens Kristiansen from Motorola said that harmonisation is one of the driving forces behind the success of the European Union integration and dedicated, harmonised spectrum for emergency services would provide access to future broadband technologies accessing and transmitting information that could enable more effective responses in emergencies and save lives in day to day situations. This is important also for achieving economies of scale and for resolving cross-border interference issues.

Advanced technology solutions must be easy to use

Lieutenant Colonel **David Versailles**,



The panel talks to Washington via a satellite link-up during the second session.

Director, Research centre of the French Air Force (CREA) stressed the importance of the implementation of advanced technologies on the battlefield: “We need people on the battlefield to be able to work with robust, simple, ready-to-use solutions. They need education and training for that but the solutions must be something easy for them to use.”

Military/civilian interoperability making slow progress

Peter Rasmussen, a national expert from the Danish mission to NATO, said that he had been at a NATO conference the previous week on network-enabled capabilities and that no clear answer had emerged on how to achieve the interoperability from the military and civilian side that everyone is looking for. He also asked why industry cannot get together and exercise the equipment together so that civilian and military users get the equipment they want to make information exchange possible.

The reply from industry was they do already do that, with **Jens Kristiansen**

from Motorola saying that EADS and Motorola and other manufacturers agree and then define a joint standard before doing interoperability tests with each other to come up with something that the market wants.

Acquisitions and development take too long

During the Transatlantic debate, **Giles Merritt** pointed to the fact that Europe spends around one sixth of what the US does on research and technology. **Terry J. Pudas** does not believe that the US will slow down the pace at which it develops technology and stressed that deciding what to invest in was at least as important as how much you invest. His view is that “we need to look at some of the business practices and processes and how quickly decisions are taken to invest and how long it takes to have those technologies in the field. Acquisitions and development take too long. The question is how we can work together and faster”. **Jorgen Berggrav**, the Supreme Allied Command Transformation Representative in Europe, SACTREPEUR Office, NATO, believes that it will be “very hard” to

work together to develop network-centricity if we can't develop policies faster. He also said that "maybe we should put more effort into doing more to implement policies faster" but said that it was difficult to forecast how that can be done within NATO. **Thomas "Dingo" Doyne**, from the ASD Networks and Information Integration Space Programs and Policy Directorate of the US Department of Defense, also called for faster progress on policy. The general feeling was policy-making needed to catch up with the pace of technological change.

"Maybe we should put more effort into doing more to implement policies faster".

Jorgen Berggrav

Competition from India, China and Russia

James Andrew Lewis, Director and Senior Fellow for the Technology and Public Policy Program at the Center for Strategic and International Studies (CSIS), referred to the likely competition on producing the new generation of weapons as coming India and China in particular, with whom it would be important to decide how closely Europe and the US wanted to work. He sees different technologies providing military advantage – eg robotics, decision support software, new power sources, biosciences – as areas where European companies can move ahead more quickly. He also says that the sheer cost of the next generation of technologies is a shared EU-US problem. In his view, for

security, there would be a benefit to exploiting a Transatlantic supply chain via Transatlantic joint ventures but that is a political decision that he does not see being made at the moment.

US defence budget crunch predicted

In the next five to ten years, the US will have a real defence budget crunch, predicted **Hans Binnendijk**. "R&D will probably come under tremendous budget pressure in the US. The question is if we can continue with high-tech operations and stability operations. Is Europe part of the answer? Can we cooperate so that, as the pressure on the US defence budget grows, a more cooperative relationship can fill some of that gap?" he asked.

Boosting EU-NATO ties

Berggrav described closer cooperation between the EU and NATO as being "fundamental" to meet new challenges. He believes that The EDA could benefit from ACT's larger programme of work, both in R&D and experimentation. "NATO is currently considering reforming the defence planning process. The EU Comprehensive Capability Development Process (CCDP) is, as far as I know, still maturing. In my mind, a shared process would increase standardisation and interoperability. If the CCDP could be incorporated into the NATO process by modifying it for the EU's level of ambition and assets rather than starting from scratch, resources could be saved," he said.

Session I

Making advanced technologies more coherent

The debate looked at what plans are afoot to make rather disparate national policies in the EU to develop defence technologies more coherent. **Giles Merritt**, Director of the Security & Defence Agenda, pointed out that there is a need for Europe to focus much more on the technologies of defence and security activity as Europe has a lot of ground to make up in this area. Europe should be spending about 2% of its defence budgets on advanced research and technology development and is spending 1.2% instead.

Merritt said that that is not much to spend on research that will shape our capabilities in the next ten to twenty years. “Even the collaborative European effort is very small in financial terms, about half what it should be,” he said, noting that there was a political promise to spend one fifth of this 1.2% on joint projects but that Europeans are currently only spending one tenth.

Europe needs to make better use of its limited resources in R&T

“Making national policies on advanced Defence technologies more coherent is one of the EDA’s missions,” said **Bertrand de Cordoue**, Director, Research and Technology Department at the European Defence Agency (EDA), in his opening remarks. He added that the EDA does not develop technologies and is not a factory but was set up by member states to help them collaborate and produce military

capabilities in line with European Security and Defence Policy (ESDP) objectives. “It would be misleading to suggest that the EDA is embracing civil security applications,” he said. “We try to focus on defence even though we know that dual use technologies is a growing area. We cooperate with the Commission to avoid any unnecessary overlap. The EDA is definitely more focused on military technology.”

The EDA is working hard on a common strategy for R&T by consulting with its 26 member states [all EU countries minus Denmark] and the defence industry via the Aerospace and Defence Industries Association of Europe. De Cordoue added that “we are also keen to have dialogue with NATO, especially the Allied Command for Transformation. They have developed a straightforward methodology and we don’t want to reinvent this. If their methods can be applied in our context, then this is most welcome”.

He stressed the need to make better use of limited resources in Europe to fund R&T. “In terms of joint projects, if we had a common set of priorities, national decisions on where to allocate funding and resources would be taken more with reference to that agenda and there would be more collaborative undertakings in R&T,” he said.

De Cordoue also pointed out that R&T priorities must be defined with reference to common military objectives. “We are developing a common vision regarding which R&T capabilities that we should invest in in Europe. The EDA is also trying to develop a common understanding on how to translate common obvious capability priorities into R&T goals and



Bertrand de Cordoue, Director of R&T at the European Defence Agency

“Making national policies on advanced Defence technologies more coherent is one of the EDA’s missions”.

Bertrand de Cordoue

achievements,” he said.

Call for harmonized and dedicated spectrum for public safety services

The next speaker **Jens Kristiansen**, is Vice President and General Manager, Tetra Products and Solutions, Government and Public Safety within Enterprise Mobility Solutions, Motorola. He explained that his area was not cellphones but government and public safety relating to the police, fire and rescue services and some military users. He pointed out that each individual in our society has the expectation of, if not the right to, emergency services.

Public safety and security services responders provide indispensable police, fire and other emergency services to respond to emergency situations ranging from the routine (sports events, automobile accidents, house fires) to the extreme (terrorist attacks, earthquakes, massive floods).

He argued that harmonisation is one of the driving forces behind the success of the European Union integration. In the mid-1990s, there was no common ground for public networks but he said that one type of technology, Tetra, is now widely deployed in Europe and it has been successful because harmonised spectrum was identified at an early stage providing the necessary certainty to industry to develop equipment to meet the needs of public safety organisations.. The technology is used when there is a crisis. “We’re seeing it moving now into use for peacekeeping missions in countries like Kosovo, Afghanistan and Thailand. We need to see where my part of Motorola can cooperate with peacekeeping forces in some incidents. We see it as a huge benefit if everyone uses the same technology as then they can cooperate more easily with the equipment that they use,” he said. “In the police area, we are moving more towards more pictures and video. We want to see more radio frequency spectrum allocated to our users in Europe and on a worldwide basis.”

Building mission-critical networks for public safety and military users in case they need to talk is important in the view of **Eric Davalo**, Chief Technology Officer for Secure Networks at the European Aeronautic Defence and Space Company (EADS). “We’ve seen



Eric Davalo, Chief Technology Officer, Secure Networks, European Aeronautic Defence and Space Company (EADS)

“We’ve seen events like [hurricane] Katrina, the tsunami or in Kosovo and Afghanistan when different organisations need to talk to each other”.

Eric Davalo

events like [hurricane] Katrina, the tsunami or in Kosovo and Afghanistan when different organisations need to talk to each other. What they need is the next generation of broadband, i.e. more bandwidth capacity than they have now. At EU level what is needed is to develop dedicated networks in dedicated spectrum for mission-critical applications. In the EU, we currently have 2 x 5MHz of spectrum for public safety. With that spectrum, public safety networks in large cities are already overloaded when there is a disaster and those networks are currently just used for voice and limited data traffic.”

He referred to estimates that “we need at least 2 x 15MHz to fulfil public safety needs and allow interoperability between defence and public safety and across borders” for an integrated broadband network needed to fulfil future missions. In his view, this needs to be harmonised across Europe, as having different allocations in different countries means that achieving interoperability is going to be a lot more difficult, and it also means that it will also be difficult to build a large enough market to get the best technology at the best price for public safety organisations across Europe.

Davalo’s view is that, to build the next generation of networks, “we need much more spectrum to be allocated than today, it needs to be more harmonised across Europe and it must be below a 1GHz spectrum limit - there are slots in the 300-800 spectrum that might become available in the near future - to allow cost-effective coverage of the population”.

“For networks a dedicated spectrum is needed because, whether [during] a peacekeeping or public safety mission, governments need control of mission-critical structures,” added Davalo.

For him, key points regarding the next generation of networks are:

- Typically you need over 99% coverage of the population and that cannot be based on getting a return on investment for each of the users, which on the other side is the main driver for coverage for commercial wireless networks.
- Reliability — the system must work when all other networks are down



The roundtable during the first session.

- Security — for communication but also for all base station sites deployed all over the country
- Add all the costs together and the return on investment for wireless communications networks is very difficult to achieve, not mentioning the liabilities associated with mission critical communications for first responders.

People on the battlefield need robust, simple, ready-to-use solutions

Implementation of advanced technologies on the battlefield is very important for Lieutenant Colonel **David Versailles**, Director of the Research Centre of the French Air Force (CREA). “We need people on the battlefield to be able to work with robust, simple, ready-to-use solutions. They need education and training for that but the solutions must be something easy for them to use.”

He explained that, in the past it was easier to manage costs where the specifications were determined at the

outset but that “now we have to accept using solutions that may need to evolve with other specifications”. “We need the military to have the possibility to define the doctrine as technology evolves,” he added. “We need a direct interface between all the actors – military, actors in the defence ministries and industry or science laboratories working on the implementation of the advanced technologies.”

Available spectrum needs to be used in a more efficient and flexible way

Mark Bogers, Team Leader Electrotechnical Sectors, DG Enterprise and Industry, European Commission was unconvinced by the plea by Davalo and Kristiansen for Europe and the world to move to an exclusive 2 x 15 MHz spectrum allocation. His reaction was that things have moved on in spectrum policy. Bogers said that radio frequency is a needed resource in battlefields and compared it with ‘ill-managed public motorways’. “We give a third to the military in case there is a

war, a third to journalists and the rest to many users. The end result is that the military and journalist parts are hardly used – it’s a bit like motorways that are hardly used,” he said. “GSM spectrum and wireless software radio communications are used more efficiently. So the pleas for more spectrum for the military or journalists is difficult to understand for us. We need to move on with new technologies and use the available spectrum in a more efficient and flexible way.”

He sees a paradigm in which the ‘motorways’ [ie the radio spectrum] can be shared and for there still to be an ‘emergency lane’ on the motorways in case public services need it as better than the ‘2 x 15 MHz one’ and the idea of having one single standard technology.

Next to speak was **Kenneth Carter**, who is one of the authors of a report on reinvesting the ‘digital dividend’ in safeguarding citizens, prepared for Motorola. On efficiency of allocation, he said that the FCC (Federal Communications Commission) had published papers looking at the creation of a new generation of economic protocols that can be embedded in radio wireless devices to coordinate congestion.

He said that a system, such as with motorway tolls, where those people valuing the networks most pay the highest tolls, and where if no-one is on the highway at night or on Sunday then it is open, does not work with public safety as the networks need to be secure, robust, reliable and always available. They also need to be able to cope with high levels of peak demand. Carter does not believe that the



Mark Bogers, Team Leader Electrotechnical Sectors, DG Enterprise and Industry, European Commission

“We need to move on with new technologies and use the available spectrum in a more efficient and flexible way”.

Mark Bogers

technology will be available in the foreseeable future to combine military and civilian networks.

Giles Merritt pointed specifically to the Iraq invasion, when British and US soldiers could not talk to each other via communications networks and therefore used mobile phones. He asked if “we have got past the cellphone era yet”. Kenneth Carter’s response was that a public network (e.g. using mobile phones) was acceptable for non mission-critical situations but that you would not want to rely on them in an emergency situation, where hard-end reliable networks were needed. “When lives hang in the balance, you need networks that are there and are going



The panellists discuss the issues.

to be there,” he said.

EDA network-centric communications report due out in May

Giles Merritt then asked to what extent money was a problem, i.e. that smaller amounts of defence spending were going to advanced technologies, and what could be done to put that right. With regard to an EDA report on network-centric communications due out in May, he asked if the panel could see a political framework for a timetable to address the various issues.

The EDA has no say on the level of spending. “This is a national issue and it is not for the EDA to impose any spending objectives in defence,” explained Bertrand de Cordoue. He said that the EDA could however remind member states about something that they have agreed on in general, i.e. that they should spend more to prepare the future than just on manpower and existing means. The EDA can also point to non-binding benchmarks that it has suggested in connection with defence budgets. He also pointed out that a

share of these budgets spent together has an obvious multiplying effect when the money is put into joint projects.

The example he gave was the EDA’s Force Protection R&T programme, with 20 member states contributing to a budget of roughly 55 million euro. He pointed out that Germany, for example, has put in 10 million euro but will get a return of 55 million euro from this. The EDA’s challenge is to come up with a reliable method of delivering convincing results under this kind of scheme.

As for the report, he said that “we can expect from it a better common understanding of what priorities are important strategic fields and where we can propose collaborative programmes and investment”.

EU-US cooperation

Jens Kristiansen cited Motorola and EADS cooperation as an example of EU-US cooperation, but added that there were others. On standards, he explained that Motorola goes through the European Standards Organisation,



Jens Kristiansen, Vice President and General Manager, Motorola

“There is an opportunity now to define technology on the EU and US sides so that it is similar”.

Jens Kristiansen

the body that standardises equipment and protocols that we work on. It has enabled police, fire and ambulance services to come onto one network in Europe and become interoperable where before they were on separate networks. “The US may not use exactly the same equipment but it should be interoperable. There is an opportunity now to define technology on the EU and US sides so that it is similar,” he said.

Eric Davalo sees much more US and EU cooperation than in the past on broadband and next generation networks. He explained that both sides of the Atlantic worked well together on the MESA (Multifrequency Energy Sensor Array) project to define needs

for public safety and first responders. “With more broadband technology coming from the commercial wireless environment, we need to adapt it to fit public safety requirements. The best solution for first responders is to produce something global so that there is a mass market available and therefore competition that will bring public safety organisations the best price and the functions they need,” he said.

UAVs (Unmanned Aerial Vehicles)

Asked about other communications networks such as Unmanned Aerial Vehicles (UAVs), David Versailles said that they are a very interesting solution but that UAV costs are not easy to manage. “UAVs are claimed to be a magic solution and seen as a ‘ready-to-use’ and ‘throw-away’ option but that is not the case,” he said. “We need to focus on network capabilities and find specific solutions for soldiers to work on the same mission in compatible ways on the battlefield. There is a lot of experience from NATO or bilateral exercises which we can gain a lot from,” he added.

Flexible use of radio frequencies

Asked if Galileo could be a catalyst to get Europeans working together more effectively, Mark Bogers said that he would not draw a parallel with Galileo as it cannot rely on normal market mechanisms and clearly needed what the French call an industrial policy action. There are technological developments (MESA) and EU-US cooperation on software-defined radio.

“Our role is to see that the communications ‘motorways’ are open to everyone in a flexible manner and not have individual lanes for everyone,” he said. “My plea is for industry to handle [radio] frequency use better and make use of technological abilities, there needs to be more follow-up of the MESA project to make more flexible use of the frequencies.”

As an example of flexibility, he said that there is spectrum for LANs (Local Area Networks) for normal wireless activity and that this is shared with military radar. “The rules are that when the military radar needs the spectrum, then wireless LANs have to vacate that spectrum. We need to think about other models and negotiation agreements. Everyone talks about them but so far we have failed to translate them into regulatory reality on which basis industry can develop its technologies – an area we should perhaps explore.”

Civ-Mil interoperability

No clear answer has emerged from a NATO conference last week, on network-enabled capabilities, on how to achieve the interoperability from the military and civilian side that everyone is looking for, explained Peter Rasmussen, a national expert from the Danish mission to NATO. As a user of military equipment, he said that he would expect firm commitments from industry to facilitate the development of equipment that is interoperable before it is launched on the market. “Why can’t industry get together and exercise the equipment together so that civilian and military users get the equipment



Lt. Col. David Versailles, Director, Research centre of the French Air Force (CREA)

“UAVs are claimed to be a magic solution and seen as a ‘ready-to-use’ and ‘throw-away’ option but that is not the case”.

David Versailles

they want to make information exchange possible. It is not only during combat operations (10% of the communications requirement) but also during the comprehensive approach [e.g. civilian reconstruction operations] (90%) where this is needed,” he added.

Esra Dogan Grajower from the Turkish Delegation to NATO gave an example of Turkey’s efforts to reach the same goal - a ‘Joint Warrior Interoperability Demonstrator’ annual exercise looking at joining civ-mil and public safety aspects.

She said that the aim of the European Defence Agency must be to make



The panel responds to a question from the floor (L-R: Giles Merritt, Bertrand de Cordoue, Eric Davalo).

different stakeholders come together to work on concrete projects. “To take on board existing efforts by others, the door must be open for non-members [of the EDA] to cooperate,” she added. She pointed out that there is a way to cooperate with NATO and that it was important as interoperability is needed with countries such as Australia and Japan. “The comprehensive approach requires that but I have doubts that the EDA is the instrument to do that.” She lamented the fact that Turkey is not able to work within the EDA.

Bill Giles from BAE Systems does not feel that national governments are working satisfactorily through NATO and other mechanisms. He has noticed that the US has got a software-defined radio (SDR) programme, adding that his company is involved, and that work on SDR is going ahead in Europe. He was delighted to hear that the US and EU were working together to achieve common standards. His view is that Europe will need to make decisions about which areas it wants to invest in technology in and where it can no longer do so. “According to the well-known figure, the US spends six times

what Europe does on R&T year after year. Those products come onto the market and are cheaper and can do the job. So can we avoid using them – I don’t think so.”

He pointed to lots of technologies in the US where the EU want to retain sovereignty control and said that the EU-US export controls and technology licensing debate needed to go on. “We need to look at what we can afford to do and which areas we can persuade the US to work with us on to try to find global solutions,” he said.

Referring to Rasmussen’s question about industry working together on standards,

Jens Kristiansen said that EADS and Motorola and other manufacturers agree and then define and write a standard jointly before doing interoperability tests with each other to come up with something that that the market wants.

In his concluding remarks, Eric Davalo said it was important to look at public networks for instances, such as in the London and Madrid terrorist bombings,

when networks become overloaded. Is the decision taken to switch off all communications networks so that people can't use them to trigger a bomb or do you keep them up so that people can call 112? This is not a technical problem but a political decision, he added.

Mark Bogers said that GSM and Tetra had been developed with ETSI standards but they reflect the state of technology at the time. "We need to look at the reality ten years from now. The important thing is to give incentives to industry to give the maximum use to spectrum that they can," he said.

David Versailles said that standardisation did not mean homogenisation but using compatible systems. He stressed the need for forces to have interoperability, citing the case of the US Army and Navy that do not have efficient interoperability in terms of their communications networks. He stressed the importance of basic research in this area, of a longer perspective and of networks that needed to emerge in the EU or in NATO.

Bertrand de Cordoue agreed with Bill Giles that "we must consider what we want to invest in and what we can afford". "Do we want to invest in things that are already available on the market? The key issue is determining the technologies where Europe agrees that it needs to invest on a joint or national basis and where it stands ready to acquire off-the-shelf technology."

"The issue of Turkey's membership of the EDA is a sensitive and somewhat political one," he added. "The EDA is not excluding any partner. It was

created by EU member states as a joint tool to help them develop defence capabilities. Not being a member does not mean that there is no collaboration possible. Turkey is not necessarily excluded from that game."

Session II

Will there be a common NATO and EU approach to future defence technologies?

This debate took the form of a videoconference discussion between Brussels and the Atlantic Council in Washington DC, bringing together panellists from NATO, the European Union Satellite Centre, an MEP, the US's National Defense University, the US Department of Defense and the Center for Strategic and International Studies.

In Brussels:

Moderator: **Giles Merritt**, Director, Security & Defence Agenda

Rear Admiral **Jorgen Berggrav**, SACT Representative in Europe, SACTREPEUR Office, NATO

Eric Jeurissen, Operations Manager, Operations Division, European Union Satellite Centre

Geoffrey Van Orden, Member of the Subcommittee on Security and Defence, European Parliament

In Washington:

Moderator: **Hans Binnendijk**, Director, Center for Technology and National Security Policy, National Defense University

Terry J. Pudas, former Deputy Director, Office of Force Transformation, Department of Defense

Thomas "Dingo" Doyne, ASD Networks and Information Integration Space Programs and Policy Directorate,

US Department of Defense

James Andrew Lewis, Director and Senior Fellow, Technology and Public Policy Program, Center for Strategic and International Studies (CSIS)

Giles Merritt kicked off the session by asking how dangerous it was for the transatlantic relationship in defence that Europe was so far behind the US (six times less spending) on research and technology. "If resentment grows, will you not eventually be the victim of your own success and undeservedly weaken the relationship by being dominant in technology?" he asked.

Application of technologies in the field taking too long

Terry J. Pudas, former Deputy Director for the Office of Force Transformation at the US Department of Defense, said that he could not predict what will create resentment or not. His response was that Europe should not expect the US to slow down because that is unrealistic. He stressed that the key is to be interoperable, for Europe and the US to be able to operate together in future in a netcentric environment. "I have a sense that sometimes our defence business models sometimes run counter to that when we build systems and make our money off proprietary integration, which of course aggravates the whole situation." In his view, areas that might generate the highest return on investment include sensors, mobility, network security, distributive mission planning and training (key for NATO Response Force success) and logistics and energy.



The panel listens to a question from the United States via the satellite link.
(L-R: Jorgen Berggrav, Giles Merritt, Geoffrey Van Orden, Eric Jeurissen)

He suggested that European countries should look at what they spend on in terms of personnel and acquisitions, noting that the US spends 35% of its budget on personnel and 30% on acquisitions.

“The key is as much what you decide to invest in as the amount you invest. We live in a world where technology won’t wait for policy. It’s a global society and other players are taking advantage of the rapid development of technology. We need to look at some of the business practices and processes. We need to look at how quickly decisions are taken to invest and how long it takes to have those technologies in the field. Acquisitions and development take too long. The question is how we can work together and faster.”

US defence budget crunch predicted

In the next five to ten years, the US will have a real defence budget crunch, predicts **Hans Binnendijk**, the Director of the Center for Technology and National Security Policy at the National Defense University. He thinks that R&D will probably come under tremendous budget pressure in the US. “The question is if we can continue with high-tech operations and stability operations. Is Europe part of the answer? Can we cooperate so that, as the pressure on the US defence budget grows, a more cooperative relationship can fill some of that gap?”

Giles Merritt pointed to pressure from China and India, who are emerging as new sources of technology with strong investment in defence products. The US and Europe are facing competitive pressure from them. The future



Rear Admiral **Jorgen Berggrav**,
SACT Representative in Europe, NATO

“The military committees of NATO and the EU do meet but the joint meetings have not added much real value to the capability process”.

Jorgen Berggrav

solution will be joint ventures. “How can we create the right political conditions to encourage joint ventures?” he asked.

Closer EU-NATO cooperation is key

Rear Admiral **Jorgen Berggrav**, Supreme Allied Command Transformation Representative in Europe for NATO, set out his view of EU-NATO relations. He explained that apparatus such as procurement procedures, capability development, doctrine, recruitment, training and exercises have not been scaled down in the same way as

numbers of NATO troops have since the end of the Cold War. “This will be a major problem for most small countries because capability is reduced. This means that there is a need for more multilateral cooperation. Technology is a way to get a more cost-effective structure for all countries, not just small and medium-sized countries,” he said. As for the split between the US and the rest, his view is that it would be to the advantage to all, EU and NATO, that other allies can follow the US otherwise they will be alone on the battlefield. “Capabilities development is not just NATO as it needs partners in the field. It is not just the EU either,” he added.

Berggrav believes that stronger and more capable EU defence will give added value to the EU and NATO. “We should be more open. There has been cooperation between the EU and NATO on UAVs, CBRN (Chemical, Biological, Radiological and Nuclear), software defined radio, maritime situational awareness and force protection but that is not enough. Military committees of NATO and EU do meet but the joint meetings have not added much real value to the capability process. There are political reasons for that but I think that it is vital that political challenges are met.”

One of the consequences he alluded to was that, in the field of future defence technology, Allied Command Transformation (ACT) and the EDA are limited to informal discussions on a quite limited range of topics. He sees improved cooperation in research and technology as an important area. Berggrav believes that The EDA could benefit from ACT’s larger programme



The ACUS panellists were able to respond to questions from Brussels, and vice-versa.

of work, both in R&D and experimentation. “NATO is currently considering reforming the defence planning process. The EU Comprehensive Capability Development Process (CCDP) is, as far as I know, still maturing. In my mind, a shared process would increase standardisation and interoperability. If the CCDP could be incorporated into the NATO process by modifying it for the EU’s level of ambition and assets rather than starting from scratch, resources could be saved,” he added.

The EU and NATO mainly draw from the same force pool. “Interoperability is vital but is not just a function of technology standards as doctrine, training and leadership are equally important,” said Berggrav Practical steps could be taken such as:

- Cooperative weapons systems programmes

- Common doctrine development processes
- Coordinated force generation processes
- Enhanced lessons learnt processes
- Common education and joint exercises

Closer cooperation between the EU and NATO is fundamental to meet new challenges. Information exchange must be enlarged to all capability areas and must be open to a suitable level of security classification. Interoperability is key and the ACT-EDA relationship is an important area of focus.

Giles Merritt asked the Washington panel for their reaction to Rear Admiral Berggrav’s blueprint for a new spirit of cooperation between NATO and the European Security and Defence Policy (ESDP).

Hans Binnendijk said that Berggrav had laid out the problems well and that the EU-NATO capability group provided no added value. Trying to change that is important in his view.

There are four or five political entities who are the key players – the US, EU, Russia, China and India, according to James Andrew Lewis, Director and Senior Fellow for the Technology and Public Policy Program at the Center for Strategic and International Studies (CSIS). “China and India in particular are intent on catching up. How closely we want to work with them is one question. Europe is underinvesting across the board. In the next ten years, there will be different technologies – robotics, decision support software, new power sources, biosciences and potentially some sensor developments – providing military advantage. European companies are leaders in innovation. Global companies are headquartered in Europe. There is a possibility for Europe to speed up. There is a possibility via cooperation but if it does not work then I do not see the US waiting.”

Terry Pudas explained that there are number of impediments to EU-US trade, such as ITAR (International Traffic in Arms Regulations) and Article 296 [of EU law]. “Both sides have challenges in terms of how they look into protecting certain technologies. You could take things to an extreme and go for protectionism but clearly that is not a good long-term strategy as it stifles innovation and creativity. There are also ways that we can look at our force structures to make them mutually complementary. They do not need to mirror-image each other. The US have

very capital intensive force structures although it is currently doing more labour intensive things. Striking a balance between them and coming together to make common cause is something worth looking at.”

Thomas “Dingo” Doyne, from the ASD Networks and Information Integration Space Programs and Policy Directorate of the US Department of Defense, picked up on Rear Admiral Berggrav’s point that cooperation is with allies and partners. For him, security cooperation goes beyond “the traditional force on force cooperation that NATO was created for” and includes partners such as NGOs, PDOs and first responders (eg police, fire, medical). Cooperation is vital. Picking up on Rear Admiral Berggrav’s point about capability going beyond technology, he said that a good conceptual framework in many ways determines the success or failure of an operation. “With the types of operation that we will be conducting together in the 21st century, we must recognise the technology challenges but also the policy challenges. Policy gets to the heart of how we use the technology together and that is somewhere where we can make greater progress and faster progress than we give ourselves credit for,” he said.

EU Satellite Centre in Spain working well but needs more collateral data

Merritt pointed to the EU Satellite Centre (EUSC) in Spain as a rare example of the EU getting its act together in cooperation between partners. **Eric Jeurissen** explained that the cooperation was working well, and slowly more countries sharing collateral

data with the EUSC. “Satellite imagery analysis is performed better with the use of collated data. This is normally done bilaterally on a ‘if I share with you, you share with me’ basis. Slowly, there is more and more sharing with the EUSC. But it is not enough yet and we can always use more,” he said.

Giles Merritt asked how a new environment could be created for joint ventures that would give an incentive to EU partners because they would know that joint ventures would open up the US defence market to them.

In Binnendijk’s view, the alliance has come through a difficult period in the last six or seven years but there is a renewed consensus in Washington that “we allies need each other more than ever, particularly true in operations but also other areas”. The question is how that translates into R&D, technology and joint ventures.

Lewis does not see the growing political awareness in Washington about the importance of the Transatlantic relationship extending into the defence side. Joint ventures as a way for European companies to gain access to the US defence market could be very uncomfortable for some in the US. “We do have a shared problem, even for the US, alleged superpower that we are. We may not be able to afford the next generation of technologies by ourselves. One way round that is to find partnerships with people that we can trust. Commercially, that’s a global supply chain, one that looks to Europe and Asia. But for security, there would be a benefit to exploiting a Transatlantic supply chain via Transatlantic joint ventures. But that’s a political decision and I don’t see that either being made



Eric Jeurissen, Operations Manager, Operations Division, European Union Satellite Centre

“Satellite imagery analysis is performed better with the use of collated data”.

Eric Jeurissen

at the moment or that there is a realisation that it needs to be made.” He hoped that that would change in the next few years.

Commented on the body language between the US and the EU, Pudas wondered whether the Galileo system should be seen as collaborating or competing with GPS. He referred to the announcement of an air force tanker deal [between EADS (Northrop Grumman) and US Air Force] as a substantive and tangible piece of body language. He expects there to be “more and more collaborative relationships” as industry will cooperate together whether policy-makers do or not because of the competitiveness of the market. He would also look for a new

group to re-evaluate the International Traffic in Arms Regulations (ITAR) as this could be a major impediment or an advantage, depending on how it is dealt with.

Thomas Doyne said that we must realise that the market is not slowing down and that companies will develop the technologies regardless of what the policy-makers are doing. For him, it is immaterial if the US is slowing down or the EU is catching up. “The nation states and our policies have to recognise the world we live in and that technology is not going to slow down.” He believes that, in an acquisitions and operational sense, Admiral Mullen, chairman of the US’s joint chiefs of staff, was right to put the emphasis on international cooperation. “As chief of the US navy, he championed the idea that the US navy has to partner with other maritime nations around the world in order to maintain freedom of the maritime seas for the good of the globe and not just the US. I think that you’re seeing that sort of philosophy being adopted, examined and debated throughout the US military.”

Next to speak was **Geoffrey Van Orden**, who pointed out that he was not speaking on behalf of the European Parliament but as the Conservative Party defence spokesperson in the European Parliament.

Commenting on the US’s next administration, he said that the US should not lend support to the ESDP but should reinforce its commitment to NATO. In his view, “we need to get out of the frame of mind of EU versus the US”. He believes that the involvement of EU institutions in defence matters contributes very little in terms of



Geoffrey Van Orden, Member of the Subcommittee on Security and Defence, European Parliament

“The EU is creating another set of channels of decision-making and is not adding to capacity”.

Geoffrey Van Orden

defence capabilities. “The EU is creating another set of channels of decision-making and is not adding to capacity. There is a duplication of what already exists in NATO. The ESDP fractures western solidarity rather than contributing to it.”

He added that people are under the illusion that the EU will produce more money and that industry does not want to miss out on the money or upset the European Commission. He does not believe that the defence industry is really aware of what the Commission’s involvement is and the drive towards European identity, an “invented

concept”, is coming from the political and not industrial side.

Van Orden says that 98% of R&D in Europe is in the hands of six countries, with 80% of defence R&D in Europe in two countries, the UK and France. “It is all about the UK and France’s contribution to defence technologies and we have to ask ourselves where the added value of the EU being involved is. It seems to me that the EU has a different aim to what should be our real concerns. The aim should be to provide the best possible equipment for our armed forces interoperable with our major allies. As far as the UK is concerned, that major ally will continue to be the US. But of course we need interoperability with other European allies as well.”

He also expressed the view that Europe should maintain an R&T base where it matters, in the reliable countries, and that “we should not create another political role for the EU”.

Eric Jeurissen stressed the importance of an EU common approach to network centric capabilities such as voice and data communications, preferably secure. The EU is could do better in this area.. The EU has an operational wide area network (EU Ops WAN) coming online as we speak, but this is limited to the operational headquarters (OHQ’s), Brussels and the EUSC. On other points:

- Available bandwidth, is there enough?
- Can we use NATO’s bandwidth in certain circumstances?
- Global coverage – it is nice that we

have coverage in the EU but we need coverage areas where operations are taking place, like Afghanistan, Iraq, DR Congo, Chad, Bosnia etc.

- Equipment must be interoperable, which he considered a better word than compatible.
- The development of a Transportable Imagery Exploitation Station – one of the first common Imagery Analysis workstations that can be used in the EU – is underway. It is not there yet, but developments are improving every day.
- As for EU-NATO ties (Berlin Plus and the EU-NATO permanent agreement are more or less all based on crisis management), what can be done about daily cooperation on, eg training and exchange of personnel?
- It is paramount that the EUSC has access to collateral data – we still need more and better.
- We need a common vision, a strategy, a doctrine and to share information.

With network centric communications, we’ll have a huge amount of information and we will need people trained to deal with it.

Question from Lloyd Han, a member of the senior advisory group to UKON

Tony Blair and Rupert Murdoch spoke recently to the annual meeting of the Atlantic Council. Blair said that we have a unique opportunity to strengthen the Transatlantic relationship but the EU lacks the political will to meet its



The Washington panel responds during the debate.

obligations. And Murdoch has talked of including countries such as Japan and Australia in NATO as they share the same values. He asked for the panellists' comments.

Question from Ken Hoffmann from the Atlantic Council

In a world where government-sponsored programmes have less of the pie and commercial programmes have more of it, how can we develop policies so that we can take advantage of this commercial R&D in Europe and the US?

The need to move faster on policy-making

For Rear Admiral Berggrav, technology is moving faster than policy-making. There are two sides to the transformation process – the creative

side and the implementation side (which has to go through the EU, NATO and each nation state). He believes that it will be “very hard” to reach a network-centric situation if we can't develop policies faster and have common policies. “Sometimes I find NATO frustrating as things take a long time. We focus so much on the creative side and put a lot of effort there but maybe we should put more effort on doing more to implement policies faster. How that can be done in NATO is hard to forecast.”

Call for more commitment in Afghanistan

Van Orden said that “sometimes we need to recall that NATO includes EU member states” and that “they are not something different and separate and competitive”. In his view, the lack of debate about the future of the alliance and the lack of political commitment for

the allies to Afghanistan at the NATO summit was “disappointing”. “We need to decide if Afghanistan is vital to western democracies or not. I think Europe’s attention is being distracted. Some European allies are enthusiastic about building up European capabilities and so are happy to neglect what is happening in NATO. We need more commitment. We didn’t have promises for more combat troops where it matters at the NATO summit. We had a lukewarm promise of one battalion, about 700 men, from France, and that’s about it. We need a major commitment from the allies if we think it is a conflict that we must win.”

On the need to fulfil the force requirement in Afghanistan, Rear Admiral Berggrav fully supported Van Orden’s views. “But we also need more effort on the comprehensive approach [military securing areas and civilian actors helping with the reconstruction work]. I think that everyone agrees that the armed forces will be a part of the solution, not the entire solution. The EU could be a very helpful tool in implementing the comprehensive approach.”

Merritt asserted that not everyone in Europe agrees with Van Orden. “A lot of us think that the ESDP is an indication of a new maturity in EU politics. It takes ages to turn the supertanker of budgetary spending around but in the meantime some of the strategy is heading in the right direction. Does the US side think that there is a silver lining or that the Europeans are as bad as ever and that the US has to look to its own resources in the future?”

EU-NATO Capability Group needs to work better

Hans Binnendijk argued that there is a much greater degree of acceptance of the ESDP and the EDA than there was a couple of years ago. “So I do not think that Van Orden’s comments reflect US thinking today. But the jury is still out. Much will depend on whether it will be possible to organise work in the defence technology area to minimise duplication and maximise complementarity.”

As for EU-NATO relations, he said that “as we have heard, the EU-NATO Capability Group is not working well. This is not a good sign and we have to fix it. The US spends a very small fraction of its R&D funds on ground forces and, given what we’re doing around the world, we probably need to change that. If there is an area where the EU can fill gaps it is in R&T to support ground forces in areas especially in areas such as reconstruction and counterinsurgency, this might be it. I note that the EDA has a project in that”.

Optimism about comprehensive approach

Thomas Doyne recalled how in 2002, he was in a coalition planning team for operations in Afghanistan, where he saw the professionalism and quality of his military colleagues from Europe as “outstanding”. “We are working together very well at the operational level. Perhaps we can work off that to make things better in terms of the comprehensive approach,” he said.



Jorgen Berggrav (L) and Giles Merritt during the question and answer session.

He also referred to a European space project (Astro Plus) with 22 countries, industry, think tanks, laboratories, examining how to integrate space capabilities to conduct security operations better. It culminated in live exercises in Poland and a realistic security operation combining the military, police, fire services, NGOs and PVOs to respond to a crisis. “So there are a lot of good things going on that we can take advantage of and I believe that there is a real silver lining here.”

Pudas agreed with Binnendijk that there is general acceptance in the US of the new construct in Europe but that there was a certain amount of impatience about how that would translate into capabilities. “It’s taking a long time and the global security situation is changing fast so old processes won’t keep us in the game,” he said. His hope is that whatever emerges in terms of European capabilities, a comprehensive approach capability or whatever, it is complementary with and synergistic to

NATO so that the whole is greater than the sum of its parts.

Lewis is not so optimistic. “I think that the EDA and the ESDP could be a competitor and are certainly not partners right now. The situation is not irretrievable but this bifurcation could potentially lead to divergence and I wouldn’t take a bet either way right now,” he said.

Binnendijk referred to there being two tests of the degree of EU-US cooperation – Galileo and the tanker deal. A journalist from Reuters asked what a reversal of the tanker deal would mean for cooperation. Merritt summed up what he understood MEP Alexander Lambsdorff, a member of the European Parliament’s Security and Defence Subcommittee, to have said at a previous roundtable – that such a decision would be “disastrous”. “If the tanker deal is torpedoed by Boeing, it would be a disaster. EU suspicions of protectionism in that field would be

“The EU will talk to the US directly in a strategic dialogue but the dialogue excludes countries that are in NATO but not in the EU and that dialogue cannot be extended to include defence issues of an industrial nature. The EU-NATO dialogue is essentially frozen within the joint capabilities group”.

Bob Bell

strengthened as never before. I don't think anyone disagreed with that at the roundtable.” Van Orden does not believe that the tanker deal has anything to do with the EU as it is a defence industry deal. He asked where things stand on the Joint Strike Fighter project and on access by key and reliable allies to a central technology as “that is also an issue of confidence”. His view is that “we need to get away from the inter-institutional debate” and talk about the US and its relationship with key allies or the relationship with key industrial partners, wherever they are, provided that they are reliable.

For **Bob Bell**, Chairman of the NATO Advisory Group on Transatlantic Defence Industry Cooperation (NIAG), there is already a common EU and NATO approach to defence technology in one sense. “With every defence technology worked on, be it from the EDA side, the EU nation state side, the US side, under NATO auspices or in multilateral groupings such as with the joint strike fighter project, people have

to wrestle with ITAR and export licensing issues.” Even in the EU, he said that there was not the willingness to surrender the sovereign right to require an export licence even if the defence material was going from France to Germany.

It is clear to NIAC, for the indefinite future, that people will have to deal with an ITAR-like system, whoever the next US president is, where export licensing is conducted on a nation to nation basis in evaluating whether the answer is yes or no. Even in the EU, assuming that the European Commission directive on intra-EU arms transfers is approved, the nation state will be at the heart of decisions as to the reliability of the recipient nation on an individual case basis and the reliability of that nation with regard to third party exports or re-exports.

“Our argument in the NIAG report is that we need a forum where all the stakeholders can sit around the same table and discuss how to structure things. We don't have a forum today except for the EDA,” he said. “The EU will talk to the US directly in a strategic dialogue but the dialogue excludes countries that are in NATO but not in the EU and that dialogue cannot be extended to include defence issues of an industrial nature. The EU-NATO dialogue is essentially frozen within the joint capabilities group. As the rear admiral appreciates, you can have a high level discussion every few months but it has no authority yet to create subcommittees or a permanent structure that can work on specific tasks.”

Binnendijk said that Bell had put his finger on the major obstacles. “During

the last US administration, there was an initiative that was designed to overcome the ITAR problems, but we have not seen the cooperation and follow-through that we would have liked," he said.

Thomas Doyne said that from an operational perspective, any delay in getting air refuelling capabilities to the forces would be bad, while Terry Pudas argued that if the tanker deal stays as is then there will be a lot of scrutiny on its performance. If it is successful and performs on time and on cost, it will do a lot for future [EU-US] endeavours.

Jim Lewis expressed the view that "we are stuck in the 1990s with this debate" over ITAR, with "many studies but little in the way of new departures". The treaty with the UK, although cumbersome, is an improvement and is the first real change since the 1970s when it comes to arms transfers. He believes that, if approved by the senate, the treaty is a better measure than the tanker deal of how the US feels about cooperating with trusted allies.

In Brussels, Giles Merritt said that we are not sure how much the US-UK deal is the same as a US-EU deal or if it is really a Transatlantic Anglo-Saxon stitch-up between the US and the UK. A big question in Brussels is if, when a deal done with the UK is in support of the transatlantic relationship or in defiance of it.

Jim Lewis replied that a telling sign is that the next in line for a treaty with the US is Australia. "So I would say that it is an Anglo-Saxon stitch-up. It will be difficult but not impossible to extend it beyond the Anglo-Saxon community," he said.

"All three major US presidential candidates have said that they want to strengthen these relations. The question is how to translate that into technology and R&D.

Hans Binnendijk

Merritt pointed out that there is a new US administration on the way and that the current administration has not cemented transatlantic relations very effectively. There is a feeling that now is the time to be exercising political will and improving matters. "Is there a sign from the US side that we can look forward to that?" he asked.

In Binnendijk's view, "politically, I hope that we can look forward to a continued improvement in transatlantic relations. All three major US presidential candidates have said that they want to strengthen these relations. The question is how to translate that into technology and R&D. Galileo is one of the tests of the relationship. There have been positive movements, i.e. an agreement on common signals and that European bidders can ask US partners to join them. So there has been some positive movement but we will be looking for more".

From Pudas' experience, the people doing the basic collaborative research are already in collaborative networks. "It is when you translate this into applied research and commoditise it, and where we start using the words 'proprietary', that you run into



Participants network during the lunchtime intermission.

problems. I've read about a new approach that the US Army has used – it is called Collaborative Technology Alliance and is a consortium of companies and universities. An initiative was launched with the UK in 2006, called the International Technology Alliance.” He wondered if that could that be a model to look at.

On Galileo, Van Orden believes that “we must make up our mind what it is for – is it a civil project or does it have a military dimension?” The official EU position is that it is for non-military use but Jacques Barrot [the former EU Transport Commissioner who is now Justice and Home Affairs Commissioner] has recently described it as a tool of sovereignty for Europe. He is concerned that there is an attitude of ‘anyone but the US’, referring to work done with China and with Russia (who did a satellite launch on Europe’s behalf). “I’m very keen to have space technology cooperation in

European countries and I think that we should find good partners wherever they might be,” he said.

Berggrav summarised the task of the Allied Command Transformation as to listen to the needs of the nations and help them transform their armed forces. He stressed that the alliance needs to be a good team full of good players and that “just having one or two superpowers won’t bring us a lot of success”.

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Summary of Motorola-EADS study “Safety First” for the SDA roundtable report

“Safety First”, a study on the communication needs of Public Safety Service providers, finds that given the growing demands for Public Safety Service communications it is already clear today that the current allocations will not suffice in the future. The Digital Dividend is an ideal opportunity for longer term harmonization, leading to the development of technical solutions that would allow the re-use of existing sites and needed economies of scale.

The “Safety First” study was funded jointly by European Aeronautic Defence and Space Company (EADS) and Motorola, two leading suppliers of Public Safety solutions for Europe. It gives voice and scientific underpinning to the concerns raised by Public Safety organisations in respect of their need for access to higher speed data services requiring further spectrum.

This paper offers informed guidance to the policy-makers and national regulators providing a detailed view of the technical and operational characteristics of Public Safety radio services necessary to achieve an optimal spectrum allocation that takes advantage of the latest technical advances, international harmonization, economies of scale, and so can ensure sufficient spectral resources for Public Safety services.

Why dedicate more spectrum to Public Safety Services?

Most mission critical operations depend on voice communications and currently have only two blocks of 5 MHz available in harmonised spectrum. Some existing networks in European cities are already operating at full **capacity** and there are now problems with supporting voice traffic at major incidents and planned events.

Communication **needs** of Public Safety operations are evolving and broadband communications are rapidly becoming more essential. Enhanced broadband capabilities will empower Public Safety organizations to move human resources into the field, increase situational awareness and facilitate command and control. They will be used to collect and disseminate timely information such as medical records, details of dangerous substances, maps, pictures and video to the various emergency responders.

Whether a wireless network can economically provide secure, robust and immediate broadband communications is based on physical constraints directly connected to the available frequency band and the amount of spectrum (bandwidth) available. In an ideal situation, Public Safety Services would have two blocks of 15MHz allocated between 400 MHz and approximately 800 MHz. This allocation should be Pan-European even though different parts of the same frequency bands might be utilised in each country.

Why decide now?

The early identification of spectrum provides the necessary certainty to industry to invest and develop equipment meeting the needs of Public Safety organisations. This triggers a chain reaction of planning certainty for Public Safety Service providers, widespread adoption of interoperable communications systems, increasing in functionality and price performance.

It is **now** that there is spectrum to distribute. The so-called Digital Dividend – the radio spectrum which will become available as analogue terrestrial broadcasting migrates to digital systems – is one of the most important and far reaching opportunities for communications policy of the past and the foreseeable future. These frequencies, sought after due to their excellent technical and propagation characteristics, also include spectrum in the amounts and within the timescales needed by Public Safety organizations.

We may regard the Public Safety communications policies for the Digital Dividend as a window to the future. The essential need for emergency communications to has been the mother of spectrum policy, nearly a century ago. More recently, the Madrid and London bombings illustrate the challenges faced by the European Public Safety services and the immediate need to ensure there is sufficient capacity to support not only current needs but also the future development of emergency communications. Could there possibly be anything more important?

Thank you for visiting <http://public-safety-first.eu/> for the study and additional information.



THE ATLANTIC COUNCIL OF THE UNITED STATES

The Atlantic Council of the United States promotes constructive U.S. leadership and engagement in international affairs based on the central role of the Atlantic community in meeting the international challenges of the 21st century. The Council embodies a non-partisan network of leaders who aim to bring ideas to power and to give power to ideas by:

- stimulating dialogue and discussion about critical international issues with a view to enriching public debate and promoting consensus on appropriate responses in the Administration, the Congress, the corporate and nonprofit sectors, and the media in the United States and among leaders in Europe, Asia, and the Americas;
- conducting educational and exchange programs for successor generations of U.S. leaders so that they will come to value U.S. international engagement and have the knowledge and understanding necessary to develop effective policies.

Through its diverse networks, the Council builds broad constituencies to support constructive U.S. leadership and policies.

Its program offices publish informational analyses, convene conferences among current and/or future leaders, and contribute to the public debate in order to integrate the views of knowledgeable individuals from a wide variety of backgrounds, interests and experiences.

Important contributions by the Council include:

- identifying and shaping responses to major issues facing the Atlantic Alliance and transatlantic relations;
- building consensus on U.S. policy towards Russia, China, Japan, Korea, and Taiwan;
- promoting balanced responses to growing energy needs and environmental protection;
- drafting roadmaps for U.S. policy towards the Balkans, Cuba, Iraq, Iran, and Libya;
- engaging students from across the Euro-Atlantic area in the processes of NATO transformation and enlargement.

About the Security & Defence Agenda



The Security & Defence Agenda (SDA) is the only specialist Brussels-based think-tank where EU institutions, NATO, national governments, industry, specialised and international media, think tanks, academia and NGOs gather to discuss the future of European and transatlantic security and defence policies in Europe and worldwide.

Building on the combined expertise and authority of those involved in our meetings, the SDA gives greater prominence to the complex questions of how EU and NATO policies can complement one another, and how transatlantic challenges such as terrorism and Weapons of Mass Destruction can be met.

By offering a high-level and neutral platform for debate, the SDA sets out to clarify policy positions, stimulate discussion and ensure a wider understanding of defence and security issues by the press and public opinion.

SDA Activities:

- Monthly Roundtables and Evening debates
- Press Dinners and Lunches
- International Conferences
- Reporting Groups and special events

The Security & Defence Agenda would like to thank its partners and members for their support in making the SDA a success



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