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1

# EDA in 2009

Alexander Weis, Chief Executive



This is the first EDA Annual Report, covering the year 2009. It comes at the right time, five years after the start of the Agency's operational activities and with the entering into force of the Lisbon Treaty, specifically referring to EDA, at the end of 2009. Five years in human life means one is about to leave kindergarten for entering basic school, but is still far away from adulthood. I would argue that the Agency has skipped quite a few classes and has reached maturity more quickly. It has started to produce concrete results to improve European defence capabilities in different areas, from immediate needs such as helicopters' availability and countering improvised explosive devices to increasing collaborative research and step-wise increasing transparency of the European Defence Equipment Market. EDA has around 80 work strands up and running. Its projects portfolio amounted to € 160 million in 2009, with an annual average of € 125 million so far.

The founding fathers of EDA underlined the need for a capability-driven Agency. It was embedded in the Joint Action of 12 July 2004, which refers to

improving the European Union's defence capabilities for the European Security and Defence Policy – now Common Security and Defence Policy (CSDP) under the Lisbon Treaty. The capability-based approach is anchored in the *Capability Development Plan (CDP)*, defining the future needs from the short to the longer term, taking lessons learned of recent and ongoing crisis management operations into account. Twelve priority actions have been derived from the CDP. They are core activities of EDA, in some cases turned into Research & Technology investment – for example protection against Chemical, Biological, Radiological and Nuclear (CBRN) threats – and in others resulting in training, such as the programme to train helicopter crews in order to fly in more demanding environments.

While the CDP is the 'overall strategic tool' EDA has three other strategies in place to steer its activities. The *European Defence Research & Technology (EDRT) strategy* defines in which technologies to invest and how to do this more together and more efficiently. Twenty-two technology priority areas have been identified to channel R&T investment, aimed at output relevant for capability improvement. The *European Armaments Cooperation (EAC) strategy* spells out the process and knowhow to get from harmonised military requirements to timely and cost-effective armaments cooperative programmes. Lessons learned from the past – when multinational projects often took too long and became too expensive – have been taken into account. The *European Defence Technological and*

*Industrial Base (EDTIB) strategy* describes the future European defence industry landscape, no longer characterised by national fragmentation but a truly European DTIB, based on three Cs: capability-driven, competent and competitive. The implementation of the industrial strategy, in close coordination with the Member States, the Commission and Industry, is underway, with an initial focus on Future Air Systems and the Ammunition Sector.

Within this strategic framework EDA's projects and activities are developed and matured. In 2009 several important projects were launched or reached important milestones. To mention a few:

- In March the *Multinational Space-based Imaging System (MUSIS)* project, aimed at replacing the current European military earth observation capability and ensuring continuity of service from 2015 onwards, became an EDA project. Six Member States (Belgium, France, Germany, Greece, Italy and Spain) participate in the project. Others have expressed interest.
- In May the *Future Transport Helicopter (FTH)* project was accepted as an EDA project, at the initiative of its originators, France and Germany. The project is dedicated to programme preparations, with the longer term aim of developing a heavy lift transport helicopter to replace the current fleet of heavy lift helicopters.
- In June the contract was signed for the *MIDair Collision Avoidance System (MIDCAS)*, an EDA project led by Sweden with participation of France, Germany, Italy and Spain. The project aims at developing a demonstrator by 2012, equipped with 'sense and avoid' technologies, enabling Unmanned Aerial Systems (UAS) to fly in unregulated airspace, together with civilian manned aircraft – an enabler whose importance is increasing, both for military and future civilian use of UAS.
- On 1 July the *Third Party Logistics Support (TPLS) Platform* became operational. This Platform is an electronic market place – using the EDA website portal – for buyers and suppliers of commercial logistic services to get the best value for money. Its initial use for both civil-

ian and military operations has already led to savings in the order of € 5 million.

- On the same date the Agency's youngest Code came into force, the *Code of Conduct on Offsets*. This Code has introduced much needed transparency to offset agreements. The Code has also introduced a limit of hundred percent on the use of offsets, which will become effective on 15 October 2010.
- In November fourteen Ministers of Defence – in the meantime fifteen – signed the *Letter of Intent on the European Air Transport Fleet (EATF)*, another milestone in EDA's work on pooling and sharing existing and future air transport assets of its participating Member States.
- At the same occasion Ministers approved the concept for the *Helicopter Training Programme (HTP)*, based on the results of studies and real-life experiences, including the first EDA helicopter exercise which took place in the French Alps in March 2009.

Many other projects reached important milestones in 2009, while a total of 38 new projects were initiated in the same year.

Linking civil to military capability development – a constant consideration for EDA's initiatives, projects and programmes since its start – received a political boost in 2009. In the context of the EU's Comprehensive Approach to crisis management the Council underlined the need to identify synergies between civilian and military capability development – in particular referring to the Agency's efforts in the research area. The Ministerial Steering Board in November launched the *European Framework Cooperation (EFC) for Civilian Security, Space and Defence-Related Research* with the aim to systematically synchronise R&T investment by EDA, the European Commission and the European Space Agency. The EFC serves a double purpose: firstly, to prevent duplication of R&T investment and to spend the European tax payers' money to the optimum; secondly, to increase standardisation and interoperability between military and civilian users, the importance of which is growing by the day.

Maritime Surveillance is another example of much needed coordination and cooperation between civilian and military authorities. EDA's Wise Pen Team, consisting of five retired admirals from different EU Member States, has made its mark already in 2009. In their Interim Report of October 2010 they have argued that Maritime Surveillance is not about building a complete new network or investing in technology. It is all about connecting existing national and multinational, military and civilian networks into one overall federated network – and to change behaviour from 'a need to know' to a 'need to share'. Their advice – further substantiated in the Team's Final Report of April 2010 – will be a major input into the work on Integration of Maritime Surveillance, led by the European Commission. It might also contribute to the development of an EU Maritime Strategy.

As this is the first EDA Annual Report it has a more general Chapter, explaining the capability-driven approach and the unique integrated way of working of the Agency. The same Chapter 2 also explains the relations with EDA's 'shareholders' – the participating Member States – and its 'stakeholders', other EU institutions and non-EU international organisations. Chapter 3 takes the reader through a selection of EDA activities across the Agency's four functional areas. Finally, Chapter 4 provides statistics, from the Agency's finances and staff to output in terms of contracts and other results in 2009.

This Annual Report 2009 proves that the EDA is delivering tangible results, even in its short life span of five years. I am convinced that in the future we can build on this initial success and further increase the Agency's output, resulting in better European military capabilities.



2



# Way of working

## 2.1 Capability-driven Approach

EDA's mission is to support the Council and the Member States in their effort to improve the European Union's defence capabilities for the Common Security and Defence Policy (CSDP). Thus, the Agency has a capability-driven approach. Everything it does is underpinned by the acid test of whether the activities will improve European Defence capabilities.

The capability-driven approach starts with an understanding of those Defence capabilities required to meet the needs of contemporary and future operations. Which challenges and threats will European forces have to face? What will be the impact of technology, both for European capacities but also to the advantage of adversaries? What can be learned from ongoing crisis management operations? In essence, European capability development needs to be undertaken from a common view or picture.

The Capability Development Plan (CDP) provides the basis the Agency's capability-driven approach. It was developed collectively with the participating Member States, the Council General Secretariat and the EU Military Committee (EUMC), supported by the EU Military Staff (EUMS). The EDA Steering Board provided the guidance and endorsed the CDP in July 2008.

The Capability Development Plan gives an auditable picture of the ability of the EU to undertake all of the Defence tasks required for CSDP over the

short, medium and longer term. The inputs come from the Headline Goal 2010 Progress Catalogue, Lessons Identified from crisis management operations, Member States' programmes to address capability improvement and finally from a focused long term analysis (2025+). From this picture, a series of conclusions were drawn and from this the 12 highest priority actions were selected by the Steering Board in Capabilities formation.

In brief, the CDP conclusions emphasise the need for *agility and adaptability*, which involves not only developing capabilities such as precision engagement and strategic reach, but also includes developing appropriate force structures that can meet operational needs. The business of *maintaining the initiative* in an asymmetric environment needs both the appropriate tactics as well as force protection assets. The importance of *knowledge-based operations* is paramount in order to better understand the future complex operating environments. The range is from high technology solutions to training all deploying forces to understand their mission environment. *Comprehensive and coordinated actions* are key to conducting the operations of today and the future – involving a mix of military and civilian actors – and Network Enabled Capability is vital for the synchronisation of effects. People remain our critical asset and the *human factor* underpins all operations, as does the need for a common understanding of how to conduct operations through harmonised *concepts and doctrine*.

Based on these conclusions Capability Directors selected 12 priority actions in the areas of:

- Counter Improvised Explosive Devices (C-IED)
- Maritime Mine Counter Measures (MMCM)
- Chemical Biological Radiological and Nuclear (CBRN)
- Counter Man Portable Air Defence Systems (C-MANPADS)
- Network Enabled Capability (NEC)
- Intelligence, Surveillance and Reconnaissance (ISR)
- Improving Helicopter Availability for Operations
- Medical
- Third Party Logistic Support (TPLS)
- Comprehensive Approach
- Computer Network Operations
- Human Intelligence

EDA Project Teams (PT) have worked on the first nine areas through developing Strategic Context Cases further elaborating the action area and then outlining options for collaborative work. The PTs have subsequently driven all areas forward, through collaborative Category B Projects such as in MMCM, CBRN, Helicopters and ISR or through more centralised development work in NEC, C-IED and TPLS (see Chapter 3). The last three action areas have been developed by the EUMC/EUMS as they initially related to conceptual, doctrinal and training areas.

The CDP is the 'strategic driver' for Research and Technology, Armaments Cooperation and for strengthening the European Defence Technological and Industrial Base. It focuses the Agency's activities in order to develop the capabilities needed for the EU's CSDP.

In 2009 work has started to update the CDP, with delivery envisaged by the end of 2010. A full-fledged review of the CDP is under consideration for 2013, at the five year point, and at a stage where the EU civil-military approach may well have developed significantly.

## 2.2 Integrated Way of Working

Capability development starts with harmonising military requirements. This is essential to prevent fragmentation of demand, which ultimately leads to national capabilities lacking interoperability and standardisation – so hardly needed for today's and tomorrow's multinational operations. Harmonisation of military requirements is the core business of EDA's Capability Directorate.

But three other functional areas are indispensable for delivering capabilities: Research & Technology, Armaments Co-operation and Industry and Market. Science and new technologies can offer great scope for improving military capabilities, also to address technological challenges posed by adversaries. Promoting more collaborative R&T is a key activity of the Agency, for which it has an R&T Directorate.

Once military requirements have been harmonised and, in applicable cases, R&T results have taken on board, the preparation phase of Armaments Co-operation starts. The EDA Armaments Directorate plays the central role in facilitating these programme preparation phases, during which options to meet the requirements are considered, procurement strategies are identified, industrial aspects are taken into account and, at the end, a way forward is recommended.

Finally, without industrial supply there would be no equipment and other material, needed to carry out operations. Industry needs to be capability-driven. At the same time industrial-technological capacities will impact capability needs, which is very welcome as long as they fit in the CDP context. Strengthening a capability-driven, competent and competitive European Defence Technological and Industrial Base as well as promoting a more transparent and competitive European Defence Equipment Market is the central task of the EDA Industry and Market Directorate.

The Agency's unique feature is to have these four functional areas working closely together in an integrated approach. The involvement of each of the four functional Directorates is not sequential, but iterative. Military capability planners, research

and technology experts, armament cooperation programme managers and industries can no longer operate in their own 'stove-pipes' – they have to work closely together from the beginning. In other words: demand and supply have to be at the same table from the initial phase of requirement setting to the production phase. This unique way of working enables the Agency and its participating Member States to develop truly common requirements, which amount to more than just the sum of national requirements. Harmonising requirements early allows for incorporation of national demands, which at a later stage would lead to longer production cycles and rising costs. With defence budgets under severe constraints everywhere across Europe, the integrated way of working of the EDA offers its Member States to engage themselves in more affordable programmes, shorter development cycles and to realise more flexible operational capabilities.

The Integrated Way of Working can be visualised in a matrix (see Figure 1), depicting the Capability Development Process from left to right, that is from requirements to project and programme delivery. Naturally, some vertical activity – policies and strategies – will always exist, though also these elements will be based on the capability-driven approach.

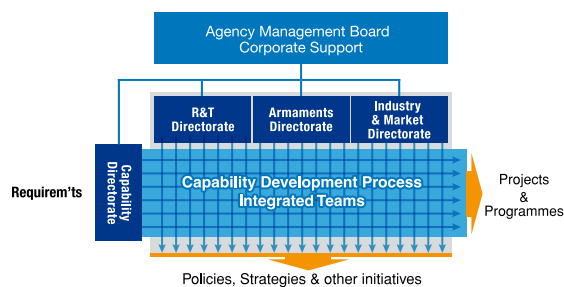


Figure 1

## 2.3 Working with Shareholders

Twenty-six EU Member States participate in EDA.<sup>1</sup> Together they form the Agency's 'shareholders': they sit in the EDA Steering Board; they pay the annual budget; their national experts participate in EDA activities; they invest in projects and programmes. The Agency is an 'instrument' in the hands of the participating Member States (pMS), in particular of their Ministries of Defence.

<sup>1</sup> Denmark does not participate in the Agency due to its opt-out from the military aspects of CSDP.

The pMS 'own' EDA. Their engagement in its activities is crucial for its success. For that reason, the Agency works with decision-makers and experts from capitals, as they are the key actors in defence planning, R&T investment, equipment procurement and defence industrial and market issues.

The Agency falls under the authority of the Council, to which it reports and from which it receives guidelines once per year. The Steering Board, composed of the pMS' Defence Ministers plus a representative from the Commission (without voting rights), is EDA's governing body. It represents the decision-making level in the capitals. In 2009 two Ministerial Steering Board meetings took place plus five at sub-ministerial level: Capability Directors (two); National Armaments Directors (two) and R&T Directors (one).

Below the Steering Board level networks of Points of Contacts (POCs) exist to prepare the Steering Board meetings and to discuss subject matter in their specific areas: Central POCs (for the Ministerial Steering Board), Capability POCs, R&T POCs and NAD POCs. The Central POCs also deal with EDA organisational, institutional and budgetary matters.

Underneath the decision-making level, the Agency operates with different working level bodies for specific topics. This is the level of the experts. They participate according to the principle of *géométrie variable*, depending on their national interests. Logically, the more general the area the more pMS participate; the more specific the less pMS participate.

For capability development, work in the various actions fields of the Agency is done in Project Teams (PTs). PTs are made up of experts of pMS interested



CZ Presidency - Informal MoDs Meeting March 2009

in or actively working on dedicated topics. A PT is normally chaired by one pMS representative who is supported in his duties by EDA staff. The PTs task is to prepare all required documents for a proper decision-making on the launch of a project, in most cases involving firm budget related commitments of pMS. In concrete terms, the PT works on conceptual issues related to the project, supporting activities such as designing and running pilot training courses or exercises. In the case of equipment related projects, the PT will develop a "Common Staff Target" (CST) which expresses the harmonised military need. On approval of a CST by pMS another decision will be taken as to whether the project should continue. In the case of a positive decision, interested Member States can commit themselves to an ad hoc Category B project which then progresses work in more detail on a dedicated output. PTs are regularly supported by all relevant subject matter experts of pMS or EDA. Some 23 PTs exist. In 2009 two were started up: Space Situational Awareness and Counter Man-Portable Air Defence Systems.

The work of several PTs is coordinated by Integrated Development Teams (IDT). Currently six different IDTs exist in the areas Inform, Command, Engage, Protect, Sustain and Deploy, covering the Capability spectrum. These IDTs are chaired by EDA Capability Managers and are made up of pMS representatives from Ministries of Defence Joint Staffs. In addition to the coordinating role of the IDT, their role and function is also to contribute to the preparation of the decision-making of the Steering Board in Capabilities formation. Figure 2 provides an overview of IDTs and PTs.

List of IDTs and PTs		
<b>IDT Command</b> <ul style="list-style-type: none"> <li>• Radio Spectrum</li> <li>• Command and Information System</li> <li>• SatCom</li> <li>• Nec</li> </ul>	<b>IDT Engage</b> <ul style="list-style-type: none"> <li>• Personal Recovery</li> <li>• 21st Century Soldier System</li> <li>• Non Lethal Cap</li> <li>• Armoured Systems</li> </ul>	<b>IDT Deploy</b> <ul style="list-style-type: none"> <li>• Strategic Transportation</li> <li>• Use of civilian transport assets and resources</li> <li>• European Air Transport Fleet</li> </ul>
<b>IDT Inform</b> <ul style="list-style-type: none"> <li>• Intelligence</li> <li>• UAV</li> <li>• ISR</li> <li>• SSA</li> </ul>	<b>IDT Protect</b> <ul style="list-style-type: none"> <li>• CBRN EOD</li> <li>• CBRN DIM</li> <li>• Counter IED</li> <li>• Protection of Camps</li> <li>• Maritime Surveillance</li> </ul>	<b>IDT Sustain</b> <ul style="list-style-type: none"> <li>• Medical</li> <li>• Seaborne Logistic</li> <li>• Third Party Logistic Support (TPLS)</li> </ul>

Figure 2 – Overview of IDTs and PTs

For Research and Technology also a network of experts operates below the level of the Steering Board in R&T formation and the R&T POCs. For this purpose the CapTechs were designed in the early days of the Agency. Each of them focuses on particular technologies associated to the different military domains and the technologies associated with it, and bring together a network of experts drawn from Member States, industry, research institutes, academic institutions and agencies (European and national). There are twelve CapTechs in total, grouped in three main areas (see Figure 3). All CapTechs function under the responsibility of an EDA CapTech moderator. They meet regularly, but they also communicate on a daily basis, using the Agency's Extranet Fora. The aim of the CapTechs is to propose R&T activities in response to agreed defence capability needs and to generate projects accordingly. The management and the planning of the research activity in each technology domain contributes to establish Strategic Research Agendas (SRA), thus to improving the generation of R&T collaboration between Member States.

EDA Steering Board in Ministers of Defence formation, May 2009



Information, Acquisition & Processing	Guidance, Energy & Control	Environment, Simulation & Modelling
IAP1 Components	GEM1 Materials & Structures	ESM1 Naval Systems & their Environment
IAP2 RF Sensors & Signal Processing	GEM2 Energy, Missiles & Munitions	ESM2 Aerial Systems & their Environment
IAP3 Optical Sensor Syst. & Signal Processing	GEM3 Ground Systems & their Environment	ESM3 Systems of Syst., Space, Simulation & Experiment.
IAP4 CIS & Networks	GEM4 Guidance & Control	ESM4 Human Factors & CBR Protection

Figure 3 – CapTech Structure

Dedicated experts meetings also exist in the Armaments areas of responsibility (e.g. for standardisation, the Defence Test & Evaluation Base, Unmanned Aerial Systems) and in the Industry and Market areas of responsibility (such as for Offsets, Future Air Systems' industrial capabilities, etc.).

## 2.4 Working with Stakeholders

The Agency does not operate in a vacuum, but works closely with other international actors. Some of them are organisations working for civilian user communities, such as the European Commission and the European Space Agency. Increasingly EDA is synchronising its R&T investment with those two organisations in order prevent that taxpayers' money is spent twice for research in dual-use technologies. In November 2009 the Council underlined the added-value of dual use capabilities and gave further impetus to the work related to seeking synergies between the EU civil and military capability development.

In the stricter defence area EDA is also closely interacting with a wide variety of international organisations, including NATO. All these organisations and others are the Agency's 'stakeholders': they are important partners in improving European capabilities.

### 2.4.1 The European Commission

From its start the Agency has worked closely with the European Commission (EC) on its Industry & Market agendas. But also for capability development EDA and the EC cooperate, in particular in areas where military and civilian users have overlapping requirements. This is the case in areas like communications, information, protection, transport and logistics. Concerning R&T the Agency has established an exchange of information with the Commission's Security Research Programme, which involves cross-participation in respective fora. With the launch of the European Framework Cooperation in November 2009 the EDA Ministerial Steering Board expressed its political will to systematically ensure that technology investment by EDA, the EC and the European Space Agency is synchronised. This is imperative, in order to make best use of the limited resources available for R&T, to avoid

duplication of efforts and to increase civil-military standardisation and interoperability.

### DG Enterprise and Industry

DG Enterprise & Industry is EDA's primary interlocutor with the Commission for defence industry aspects. There are regular contacts on a number of issues in this framework. In 2009 two subjects featured in this cooperation: intra-community transfers and support measures for Small and Medium-sized Enterprises (SMEs).

With regard to the Directive on Intra-Community Transfers of defence related products (ICT Directive) and its implementation the EDA tries to support and, if required, complement the ongoing initiative of the European Commission. EDA was given the opportunity to participate in the Commission's workshops accompanying the national transposition.

One of the activities resulting from the European Commission's Defence Package, launched in December 2007, was to explore concrete ways to support defence-related SMEs. This analysis has been done through a study and a series of seven conferences organised by DG Enterprise and Industry starting in the second semester of 2009 in different Member States. EDA actively supported and participated in these activities, together with representatives of industry, governments, the AeroSpace and Defence Industries Association of Europe (ASD) and national industrial associations.

Defence research can be considered, in general terms, as a particular function development of certain technologies available for broader application. In view of this the EDA R&T Directorate keeps a permanent dialogue with research stakeholders to look for complementarities and synergies. There is a constant flow of information and mutual participation in working fora. EDA is represented in the Security Advisory Group and Programme Committee contributing to the content of the Security Work Programme. The Commission as such is entitled to attend all EDA network meetings.

## DG Market

In 2009, the EDA Industry and Market Directorate has started to work closely with the European Commission DG Market regarding the implementation of the Defence Procurement Directive 2009/81. This encompasses a series of 'informal brainstorming meetings', which contribute to the preparation of DG Market workshops aimed at supporting Member States. I&M coordinates the participation of other experts from the EDA (R&T and Capabilities) in these meetings, attends at the workshops and exchanges views with DG Market regarding this latter's Guidelines on the transposition.

## Other DGs

In 2009 the Agency has coordinated a number of its own activities with the Commission such as Maritime Surveillance, where the Wise Pen team has been in close contact with amongst others the Directorate General for External Relations (RELEX) and the Directorate General for Maritime Affairs and Fisheries (DG MARE). Other areas are Countering IED, where EDA is contributing with its expertise to the initiatives launched by the Directorate General for Justice Freedom and Security, and Network Enable Capabilities where representatives from the Directorate General for External Relations (RELEX) are actively participating in the framework of the Project Team NEC.

## European Space Agency

The relationship between the EDA and the European Space Agency (ESA) has been further consolidated in 2009, building on well-established working level contacts and regular exchange of views between the EDA Chief Executive and the ESA Director General. The identification of synergies and concrete complementarities has been involving all EDA Directorates, focussing notably on the following issues:

- **Coordination of R&T-related investment:** EDA is member of a task force, together with the Commission and ESA, to determine relevant space technologies for European strategic non-dependence and coordinate subsequent investment in the respective institutional frameworks. By the end of 2009, together with

pMS a list of urgent actions for 2010-2011 was drafted. EDA expects to contribute to the Critical Space Technology process mainly through the implementation of R&T projects at components level.

- **Complementary definition of requirements for a European Space Situational Awareness (SSA) Programme:** following the start of an ESA preparatory SSA programme, EDA has been tasked to federate the military requirements for SSA. Work on such Common Staff Target has been conducted throughout 2009 up to its adoption by pMS in March 2010. EDA will further investigate how those requirements can be included in the further development of the European SSA initiative and has been observer to ESA's SSA Programme Board since early 2009.
- **Coordinated feasibility studies in the area of Unmanned Aerial Systems (UAS):** EDA and ESA have joined forces with regard to the topic of 'Space Services for UAS', dealing in particular with command & control of UAS and their 'beyond-line-of-sight operation'. EDA and ESA coordinated the content and timelines of two feasibility studies in this domain in preparation of a subsequent demonstration mission, acting respectively as experts/observers in each others study teams.

### 2.4.3 Organisation Conjointe de Coopération en matière d'Armement (OCCAR)

2009 saw the development of an Administrative Agreement with OCCAR, which will formalise the relationship between the two organisations, once approved by the Council. In the meantime much progress has been made on an informal basis: potential cooperative programmes have been identified under EDA's umbrella that could well be taken on by OCCAR. The general principle is that EDA assists the contributing Members to a project in reaching agreement over the size, shape and depth of cooperation, with OCCAR providing their expert international procurement knowledge to the process. This is an ideal 'marriage of competence' that makes the most of EDA's reach and OCCAR's procurement best practices. EDA's

Guide to the Conduct of a Programme Preparation Phase explains how the contributing Members might ideally co-operate, how best to engage stakeholders such as OCCAR and industry, and the recommended documents and outputs. This Guide is already used as a basis for four of the Agency's Category B armaments programmes (Future Unmanned Aerial Systems, Biological Detection Identification Monitoring Equipment Development and Enhancement Programme, Maritime Mine-Counter Measures and Future Transport Helicopter).

It is not just projects that are common to EDA and OCCAR. Both organisations are also working together on a compatible approach to the application of through-life management, since this is universally accepted as a best practice approach in all international programmes.

#### **2.4.4 NATO**

The EU-NATO Capability Group is the forum to ensure complementary and mutually-reinforcing capability development between the EU and NATO, established in the context of the Berlin Plus package arranging the relations between the two organisations. Also in 2009 EDA contributed substantially to the activities of this Group. Firstly, it was informed on the results of all EDA Steering Board meetings. Secondly, EDA staff informed the Group on several specific projects, such as Helicopters' Availability and the European Air Transport Fleet, showing complementarity in areas of overlapping capability improvement.

At the informal level staff-to-staff contacts were further expanded in 2009. EDA project officers have regular exchanges with their NATO counterparts in the NATO Headquarters, in NATO Agencies and in the Allied Command Transformation (ACT) in order to keep abreast of each others' activities and to identify work strands not yet covered to add value to capability development. There is also mutual attendance of EDA and NATO staffs at each others' conferences, seminars, workshops and meetings. Contacts with ACT in particular increased in 2009, at the staff expert level but also at the level of the EDA Chief Executive and the Supreme Allied Commander Transformation.

Additionally, since membership of EU and NATO broadly overlaps, the same national representatives and experts often participate in the various activities of both bodies, thereby ensuring the elimination of duplication. Two examples of close capability cooperation are in the areas of Counter Improvised Explosive Devices and Network Enabled Capability. In summary, informal cooperation between EDA and NATO is working well and avoiding unnecessary duplication.

#### **2.4.5 Letter of Intent (LoI)**

The Letter of Intent consists of six European countries (France, Germany, Italy, Spain, Sweden and United Kingdom), who have been working together since 1998 to facilitate defence industry restructuring within Europe. This mission is shared with the EDA in its wider framework of 26 participating Member States, which naturally includes the six LoI nations.

During 2009 EDA participated in LoI meetings, both at management and working level, and contributed with its expertise on Security of Supply, R&T, treatment of technical information and harmonisation of military requirements. The cooperation is generally on an information exchange basis with both organisations contributing to each others' work as suitable.

In 2009 EDA has also established close contacts with the European Technology Acquisition Programme (ETAP), in the context of the Future Air Systems initiative within the context of the Agency's work on Key Industrial Capabilities. The members of ETAP are the six LoI nations. ETAP involves the prime contractors of the fixed wing air systems industrial base of these countries. The scope of ETAP is to develop and demonstrate advanced technologies for combat air systems in order to reduce risk and cost in future combat air systems procurement. Regular meetings between ETAP and EDA now take place at all levels. Both organisations have set up a cooperative framework, which for instance has led to the possibility of having new ETAP projects awarded by EDA for ETAP.

#### **2.4.6 Aerospace and Defence Industries Association of Europe (ASD)**

EDA maintains a structured dialogue with the AeroSpace and Defence Industries Association of Europe (ASD). ASD has 28 member associations in 20 countries across Europe. It represents the aeronautics, space, defence and security industries in Europe with the objective of promoting and supporting the competitive development of the sector.

The ASD traditionally contributes to the EDA Annual Conferences. This was also the case in 2009. Pier Francesco Guarguaglini, President and Chairman of the Council of ASD, delivered a keynote address to the 9 February 2009 EDA Annual Conference on 'Bridging Efforts – Connecting Civilian Security and Military Capability Development'.

The EDA R&T Directorate regularly participates in the ASD Defence R&T committee, which meets every two months. Similarly, ASD is on a regular basis invited to EDA events, such as the "R&T all on board" Workshop in October 2009 where it presented industry's views on collaborative R&T and R&D. A representation from the ASD Defence R&T committee also joined working sessions with national R&T Points of Contact.

Some of the main areas addressed through this dialogue in 2009 were the European Defence Research & Technology Strategy (EDRT), CapTech performance, the improvement of Industry/Government relations, Intellectual Property Rights and technology dependencies. The ASD Defence R&T committee helped to substantiate the EDRT Key Technologies and Skills, in parallel to the work carried out by government experts in the CapTechs. In addition, the ASD Defence R&T committee started a dialogue with the R&T and I&M Directorates for a detailed mapping on technology dependencies.

The EDA I&M Directorate has established a good working relation with the ASD SME and Equipment committee, specially the SME group on the subject of Depth & Diversity in the supply chain. On market related issues like Level Playing Field, Security of Supply and Offsets there has been a constructive exchange of views with the ASD Economic and Legal Committee.







3

# Output

## 3.1 Helicopters Training

One of the problems with the lack of available (transport) helicopters for crisis management operations is training. Many crews are not trained to fly in more demanding environments, in particular deserts and mountainous terrain. Improving helicopters' availability through training has become a major work strand of EDA. It is an example of a 'quick win' in improving capabilities.

2009 was a key year in preparation of the Helicopter Training Programme (HTP), leading to the approval of the HTP concept by the Ministerial Steering Board in November for the launch of the Programme in 2010. The three main events in 2009 were a study into delivering inexpensive but effective simulated tactics training, a study into the opportunities for live tactical training and the first-ever EDA live flying exercise.

The simulated tactics training study had two aims: (i) to assess the technology available to provide a relatively low cost simulator, and (ii) to train Czech Republic aircrews, committed to deploy in the same year to Afghanistan, on operational tactics. Consequently, the study looked at course content as well as the use of a low cost, high fidelity commercially-off-the-shelf simulation to provide a suitable level of tactical training and instruction to aircrew unfamiliar with core helicopter tactics. Six Czech Mi-17 crews – 18 personnel in total consisting of pilots, co-pilots and rear crew – were trained over a two-week course involving ground school and simulator sorties. Whilst the scope of the study

did not seek to determine output standards, an assessment was made of the knowledge transfer and understanding gained by crews. Internal validation feedback from Czech crews indicated high levels of satisfaction with the enhanced capability and the increased potential for interoperability with other nations. Tight timelines dictated that integration simulation architecture was in a raw state at the start of the course. Concurrent evolution took place throughout the delivery of the course, as a background activity, resulting in amendments and adoptions to the course content and methods of delivery. Consequently, although the study delivered its stated aims, in particular in preparing the Czech crews, it still left issues for future investigation.

The second study was to provide an assessment of the tactical training needs of pMS and to catalogue current training capabilities. The study developed options for meeting training gaps, and suggested a roadmap for delivery of a sustainable programme which would allow crews from pMS to be trained to a suitable standard to confidently deploy and



GAP 2009 - 1<sup>st</sup> EDA Helicopter Exercise

integrate on multinational operations in a non-permissive environment. A limited training needs analysis was conducted, based on representative missions and tasks which the crews would be expected to carry out while deployed on multinational operations in a non-permissive, environmentally challenging theatre. It also conducted a survey of the tactical and environmental training capabilities extant within pMS. This included the organic capability to deliver live flying, simulation and procedural training and the ability to host such training with other nations resources should this be necessary. Finally, the study delivered an outline course syllabus to meet the training requirement, providing indication of the cost implications. Ideally, the best practice from this survey should then be incorporated into any future training course design.

As one of the originators of the helicopter initiative, France agreed to host the first EDA helicopter exercise in Gap in March 2009. The exercise was structured as a 'test bed' to see what might be possible to help improve European Helicopter training capabilities. The aim was to try and deliver pre-deployment training to crews destined to deploy on operations, whilst assessing the viability and benefit of future exercises. Eleven pMS took part, either with aircraft or observers. France provided the organisation, terrain and exercise management, including ground troops for the tactical phases of the exercise. Luxembourg provided funding to cover the majority of the participants' costs. The exercise was a great success, meeting the pressing pre-deployment need as well as providing valuable

feedback for future development. In particular, it found that the crews felt a lot better trained, an outcome achieved through the acquisition of mutual confidence and exchange of professional and cultural knowledge between the crews and nations which represented a first step in building an efficient "multinational unit or force". This confidence was developed through around 300 flying hours, which represents an average of 20 to 30 flying hours per aircrew, and 35 ground school brief hours which covered techniques, tactics, procedures, operational lessons learned. Additionally the sharing of personal experiences from various operations greatly enhanced the learning. It was unanimously agreed that a greater understanding and proficiency of 'operational English' was needed. The lessons learnt from this exercise, in conjunction with the output from the two studies, were used to assist the development of a series of multinational exercises as part of a wider EDA Helicopter Training Programme.

### 3.2 Unmanned Aerial Systems (UAS) Air Traffic Insertion

UAS Air Traffic Insertion has been a priority of the European Defence Agency since its establishment, when it was introduced in the Agency's first work programme for 2005. By March 2007 the three major European stakeholders – European UAS companies under the ASD; the European Commission and the EDA – had identified, within the Air4All project, a common objective "to open the European Airspace and have the required technology demonstrations in order to produce Unmanned Aerial Vehicle Systems that can routinely fly across national borders".



Agusta Westland

Based on the findings of the study EDA's Air Traffic Insertion policy for UAS outlines the achievement of seamless integration of civil as well as military UAS into the non-segregated European Airspace as the common target by 2015. This common civil-military European initiative received strong support from various stakeholders around Europe. In the past few years, EDA started actively preparing, together with the pMS, the needed business cases to support the decision in what areas investments should be made and focused on.

Throughout 2009, the main developments were focused on mid-air collision avoidance and command and control technologies:

#### **Separation & Collision Avoidance – Technology Demonstration and Standardisation**

A major requirement for UAS Air Traffic Insertion is the development of 'Sense and Avoid' technologies in order for Unmanned Aerial Systems to 'feel' other aircraft flying in normal airspace and to correct the course, if needed, to avoid a collision. In June 2009 the signature of the MIDCAS (Midair Collision Avoidance System) contract at Le Bourget Air Show in Paris marked a milestone in this technology development under EDA's umbrella. The MIDCAS project, an Agency Category B project, is run by five pMS: Sweden (lead nation), France, Germany, Italy and Spain. The MIDCAS industry consortium is composed of 13 companies of the five participating Member States. They hold a large portion of European knowledge on Sense & Avoid as well as on other technologies relevant for the project.

The aim of the MIDCAS project, with a value of € 50 million, is to "demonstrate the baseline of solutions for the Unmanned Aircraft System Mid-air Collision Avoidance Function" acceptable by the manned aviation community and compatible with UAS operations in non-segregated airspace by 2015. It is a unique project: nowhere else in the world the Sense and Avoid technologies are under development. Thus, MIDCAS can have a world-wide impact.

Transatlantic standardisation will be an important aspect – another element the Agency is paying

attention to. For the European UAS agenda, the use of a common set of European standards for UAS Air Traffic Insertion will enhance competition, foster innovation, release company investments and lead to further advances in technology and new civil and military applications. Hence, a common European inventory of standards will contribute to a much stronger UAS European Defence Technology Industrial Base.



Aircraft without pilots © DLR/DFVLR

#### **Secure and Sustainable Communications for Command and Control**

The European Space Agency is linked to the EDA work on UAS Air Traffic Insertion in the area of Satellite-UAS data relay connections. The main drivers of UAS operations are reduced costs, improved safety, and more sustained/persistent surveillance. In this context, satellite communications and satellite navigation can provide a flexible infrastructure for UAS operations and even multi-mission capability.

EDA and ESA have joined forces in 2009 to demonstrate that technological challenges in Command and Control/Air Traffic Control can be overcome through the use of satellite services. This initiative resulted in two contracts for feasibility studies on "Satellite Services for the integration of Unmanned Aircraft Systems (UAS) into European Airspace". Contents both studies' requirements have been coordinated and both sides will be kept abreast of progress and results. The contracts of these EDA-EAS coordinated studies were signed by both Agencies during the EDA Annual Conference in February 2010 in Brussels.



### 3.3 Airworthiness

Throughout 2009, EDA has deepened its work in the field of military harmonisation of airworthiness and certification rules, also relevant for UAS Air Traffic Insertion. The Military Airworthiness Authorities (MAWA) Forum, created in 2008, has been striving to harmonise the airworthiness requirements and processes of the pMS. The MAWA Forum is made up representatives from the national military airworthiness authorities and is chaired by EDA. The MAWA was formed as it was deemed no longer viable for Member States to carry out their airworthiness activities separately while increasingly aircraft programmes are common. Developing common airworthiness will also result in considerable savings in terms of initial procurement costs as well as unlock the potential for more collaborative capability sustainment therefore further reducing whole life costs. A significant cost driver for aircraft programmes are the costs associated with the initial certification of the aircraft. This requires extensive Test and Evaluation (T&E) by the customer nations. If this could be carried out collaboratively, by joint T&E teams to a set of common airworthiness requirements, then this would produce significant savings. These are estimated at 25 percent of the total costs. Capability sustainment costs could also be reduced by introducing the possibility of cross-national aircraft maintenance or training of maintenance personnel. Economies of scale when outsourcing aircraft maintenance to industry could also be achieved by nations that have common aircraft types.

A common set of airworthiness requirements will also reduce the risk of potential programme

delay due to a loss of cohesion between nations participating in common aircraft programmes. For this purpose, EDA has been tasked to develop designated European Military Airworthiness Requirements (EMARs).

The EDA MAWA effort is still in its early stages but is already achieving initial results. For the first time, European military airworthiness authorities have a focal point to discuss airworthiness issues and are now working together to harmonise European military airworthiness. Task Forces have been established to produce the relevant EMARs. EDA has initiated a feasibility study to ascertain if the MAWA Forum members could form a European Military Joint Airworthiness Authorities Organisation (EMJAAO) that would be similar to the precursor to the European Air Safety Agency, the civil Joint Airworthiness Authority (JAA). The establishment of EMJAAO would further enhance the potential for mutual recognition between pMS and would provide a definitive focal point for military airworthiness within Europe.

### 3.4 European Air Transport Fleet (EATF)

In February 2008 the EDA Steering Board in Capabilities formation decided to establish a Project Team to study viable models for the development of a European Air Transport Fleet (EATF). In November 2008, Defence Ministers of twelve EU Member States (Belgium, Czech Republic, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, Romania, Slovakia and Spain) signed a EATF Declaration of Intent (DoI) to express their determination and commitment to address the critical European airlift shortfalls.

The main objectives of EATF are: to improve the airlift provision within the European Union; to develop concrete solutions for better use of existing and future airlift assets made available by the pMS for military needs to meet operational requirements; to develop means for optimisation of interested existing and future air transport organisations and structures; and, finally, to be able to transport any personnel/equipment by any asset with a minimum of constraints.

EATF will consist of a framework federating different projects identified, different structures and different types of assets, in order to create synergies through far-reaching cooperation and coordination. It will be a flexible and inclusive partnership between national and multinational military air transport fleets and organisations in Europe, aimed at the enhancement of standardised air transport services through cost-effective pooling, sharing, exchange and/or acquisition of various capabilities, including aircraft, training programmes, cross-servicing activities, cargo handling, maintenance activities, spare parts, etc.

The long term vision of the EATF is to establish a robust network linking various European air transport entities aiming at the efficient employment of all present and future air transport capabilities made available by the pMS for military needs, regardless of type or origin.

Significant progress was achieved in 2009 in defining the EATF framework, building a robust EATF work plan, describing the EATF model and finalising the EATF Letter of Intent (LoI) and the list of the different EATF work strands. In addition, the PT EATF achieved the description of the landscaping study for the EATF initiative, aiming at identifying the strengths and weaknesses of the current environment and describing ways to optimise its structures, processes and procedures and the Diplomatic Clearances study, aiming at providing recommendations for the harmonisation of the existing diplomatic clearances mechanism. Contacts have been established and meetings organised with different international institutions and organisations, from the European Commission

and Eurocontrol to existing air traffic coordination centres and the European Air Group, to avoid duplication of work and to combine, as much as possible, efforts to alleviate the critical shortfalls in the air transport area.

The signature of the EATF Letter of Intent (LoI) on 17 November 2009 by fourteen Ministers of Defence (Belgium, Czech Republic, Finland, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovakia, Spain and Sweden) and by the Minister of Defence of Romania a few months later expressed the clear political will to move forward and enhance efforts to increase the military airlift provision within Europe.



Airbus Military

### 3.5 Multinational Space-based Imaging System (MUSIS)

Space-based assets, including for observation, are considered critical for crisis management operations. Imagery from satellites plays an important role in *Intelligence, Surveillance and Reconnaissance (ISR)* capabilities. Currently, there are three satellite constellations answering the needs for military space-based earth observation: the optical space system Helios led by France (in collaboration with Belgium, Greece and Spain); the radar-based SAR Lupe from Germany; and CosmoSkyMed from Italy.

These six EU Member States have launched the initiative for a collaborative effort for the next-generation earth observation satellites. The Multinational Space-based Imaging System (MUSIS) became an EDA project in March 2009.

The MUSIS initiative moves from the cooperation agreements already in force. It includes the definition of a common architecture to provide for

the federation of access to the satellites through the realisation of a Common Ground segment, which will allow the Member States, under agreed conditions, to request for, to receive and to exchange images from any of the four space components – the successor to the Helios, SAR Lupe and CosmoSkyMed space systems and a Spanish dual-use optical satellite.

The Agency's role in the MUSIS project is to provide the link to other Agency activities in the area of ISR and Standardisation. EDA is also supporting the project contributing Member States in the identification of other Member States, potentially interested in joining the Program, and it ensures the liaison with the European Commission and other relevant EU bodies in order to consider appropriate synergies between MUSIS and other space related initiatives such as the Global Monitoring for Environment and Security (GMES).

The MUSIS programme's time schedule has been set up in coherence with the foreseen operational phase of the space components to be federated. Delivery is foreseen by 2015.

### 3.6 Maritime Surveillance (MARSUR)

Already in November 2005 the Ministerial Steering Board tasked EDA in the Maritime Surveillance area to "establish facts on current assets and propose options for future collaborations, focusing in particular on the interface with European security and border control." This has led to three major capability-focused work strands under the umbrella of MARSUR.

#### Maritime Surveillance Networking

Maritime Surveillance Networking aims at improving the Recognised Maritime Picture (RMP). The EDA pursues this through a step-by-step approach, linking up existing military maritime networks and fostering the exchange of data, information and knowledge between all (voluntarily) participating Member States. This will contribute to better informed decision-making for and during CSDP military operations. Due to its open design, which allows Member States to feed in and exchange data,



Force protection onboard © EUNAVFOR

information and knowledge at their own discretion, the project also has the inherent potential to contribute significantly to securing Europe's sea borders. For deployed CSDP operations, however, the input by Member States might not be sufficient to generate the required detail of the RMP in the Area of Responsibility/Operations. Therefore, the project will also ensure that the system will be able to incorporate third party input such as data from friendly regional states or military partners.

Fifteen Member States are contributing to the project which is led by Finland. After having established the common requirements for such a network, the demonstration phase will start at the end of 2010 in order to prove the value of this integrated network. So far, six Member States have volunteered to participate in the demonstration. At the end of the demonstration, Member States will decide how to proceed and upgrade the network.

#### Future Unmanned Aerial Systems (FUAS)

In November 2008, the work on Maritime Tactical Unmanned Aerial Systems led to an ad hoc Category B Project with seven contributing Member States (France, lead nation, plus Finland, Germany, Poland, Portugal, Spain and Sweden). This project, later relabelled 'Future Unmanned Aerial Systems', aims at delivering ISTAR<sup>2</sup> platforms for use at the tactical level, mainly by the contributing Members' Armies and Navies, from 2016 on. Meanwhile, the common requirements have been defined and the lead function in the Agency has been handed over from the Capabilities to the Armaments Directorate in order to finalise the Business Case documents which will take the project to the next step, based on the results of a Request for Information (RFI), released by EDA to industry.

<sup>2</sup> Intelligence, Surveillance, Target Acquisition and Reconnaissance



### **Maritime Mine Counter Measures (MMCM)**

Also in November 2008 the ad hoc Category B Project Maritime Mine Counter Measures (MMCM) was launched by the Ministerial Steering Board. In this project twelve contributing Members (France, lead nation, Belgium, Estonia, Finland, Germany, Netherlands, Poland, Portugal, Romania, Spain and Sweden plus Norway) are conducting a 24-months assessment phase of military requirements and available technologies which will enable the replacement of existing MMCM capabilities from 2018 onwards. The Common Staff Target (CST) has been defined, market and technology surveys have been conducted and the Common Staff Requirement (CSR) is being finalised. The project is now in the critical stage of determining who is able to cooperate on what, and when this can be delivered.

### **Wise Pen Team**

In 2009 the Agency also took the initiative to work on a conceptual document on Maritime Surveillance. Taking the complexity of Maritime Surveillance into account and striving to focus its further work on military Maritime Surveillance, EDA contracted a 'Wise Pen Team' in July 2009 comprising of five retired three star admirals of five seafaring pMS. They were mandated to produce a Maritime Surveillance CSDP 'Think-Piece' in order to contribute to an integrated EU approach. Beyond the initial intention to develop the 'Think-Piece' for CSDP, the Team has been extremely successful in taking on a facilitating role in the EU Maritime Domain and bringing different civilian and military stakeholders, both national and international, together and promoting coordination and cooperation. In October 2009 the Wise Pen Team delivered an interim-report, pointing to the need for coordination and synergies between the various national and international actors, cross-border, cross-pillar and cross-Agencies.

## **3.7 Counter Improvised Explosive Devices (C-IED)**

Improvised Explosive Devices have become the weapon of choice of adversaries and this phenomenon is likely to continue for decades. IEDs are fabricated in an improvised manner

and designed to destroy or incapacitate people and vehicles. The design of IEDs and the trigger systems used range from the 'simple' to the technologically developed. The production costs in general are low, and the components used include military ammunition like mines or artillery shells as well as freely available chemical components that can be combined to make explosives. Although, already used for many decades in civil wars and conflicts worldwide, the casualties caused by IEDs have a cumulative campaign effect and their use is key for terrorists, resistance movements and rogue elements in their fight against technologically superior forces. In Iraq and Afghanistan they have caused the majority of fatalities and casualties of international troops. Likewise, IEDs threaten, harm and kill both civilian personnel working in these crisis management areas and the local population. IEDs not only cause tactical effects in the field. IED incidents on operations can cause strategic effects in the home countries of deployed forces and can influence political decision-making. Therefore, it is not sufficient to just deal with the IED event itself. The whole IED network needs to be tackled in order to find, secure and remove the decision makers, planners, backers, financiers and the supporting logistics chain.

Logically, pMS have made C-IED one of the top priorities of the Agency. Consequently, the majority of pMS have joined the Project Team (PT) C-IED. The PT addresses a holistic approach to all aspects of C-IED. Also, the Agency works in a multi-disciplinary manner which will support the fight against IEDs, and which will contribute to a systematic and harmonised EU approach to the topic.

As C-IED is an overarching issue for EU Member States' Armed Forces operating abroad and civilian actors dealing with security aspects at the European level and in the European Union Member States, close cooperation and coordination with these partners is being pursued by EDA.

In order to generate timely and tangible support for the participating Member States' Armed Forces deployed on ongoing operations, the Agency already has developed and conducted, in close



cooperation with host nations, training courses on specific C-IED and Explosive Ordnance Disposal (EOD) aspects. These courses were mostly designed course material packages enabling pMS to conduct them subsequently nationally or in multinational settings. An example of such courses is the 'Military Search Course', which took place in Rome late 2009.

The close coordination and cooperation between the military and civilian stakeholders is essential to the success of the Agency's newest C-IED work strand. Originated in late 2009 and agreed upon by the Defence Ministers during their Steering Board meeting on 26 April 2010 in Luxembourg, the Agency will support a project on a mobile field laboratory for forensic research of IEDs, to be deployed in a real operational environment. France will act as the lead nation for this Deployable Level 2 Exploitation Demonstrator project. Results will be shared with all pMS. Thus, EDA will contribute to urgent operational needs for better European C-IED capabilities.

Further efforts on C-IED include ongoing R&T projects mainly within the context of the Joint Investment Programme on Force Protection and Innovative Concepts and Emerging Technologies (see sections 3.11 and 3.12). The main R&T focus is on the work strands Mitigation and Detection Systems and Technologies. Detection of an IED is the key to rendering IEDs obsolete. Following the Joint Capabilities-R&T Workshop on C-IED Detection and Forensics in July 2009 the C-IED Detection Experts Group was launched. This Group has adopted a scenario-based approach in order to assess the suitability of technologies and systems of technologies while at the same time mapping past,

present and planned activities with the purpose of producing comprehensive recommendations for future investment.

### 3.8 Network Enabled Capability (NEC)

It is foreseen that that by 2025 predictable advances in computer processing power and new ways of organising and transferring data and supporting decision-making will transform the way the EU conducts Crisis Management Operations (CMOs). EU CMOs will benefit from faster, more reliable and better controlled exchange of information and decision-making, based on more complete information and analysis. Forces themselves are likely to be smaller, as supporting activities such as communications and logistics become more efficient. Advances in remotely controlled and autonomous armed and unarmed vehicles will place a premium on robust command and control, and artificial intelligence.

Network enabled organisation structures, architectures and relationships, underpinning all these changes, will provide the essential glue for more advanced crisis management. Civil and military actors will have the information they need at all times and at all levels. The challenge will be to filter information and to secure it rather than to provide it.

NEC is one of the 12 EU Capability Development Plan priority actions. It is designed to support the EU's comprehensive approach and the Civil-Military Coordination for crisis management operations and missions.

In July 2009, the Political and Security Committee (PSC) of the EU noted the EU Concept for NEC, which had been produced by the 'NEC Wise Pen' under an EDA contract. At the same time the PSC agreed the document *«Developing Network Enabled Capabilities (NEC) in Support of ESDP»*, which includes provisions for a Programme of Work on NEC. The PSC has also requested the Council Secretariat, supported by EDA, and in co-operation with the Commission, to report twice a year to the PSC, on the state of work on NEC.

The EU NEC approach, as being currently developed by civil and military experts from Member States, EDA, Council and Commission, with industry support, acting in the Project Team NEC, has a strong capability focus, by recognising that most civil, military, or civil-military capabilities clearly have a NEC dimension.

In 2009, one of the main strands of work of the PT has been the NEC Implementation Study (NEC IS), contracted to an Industrial Consortium called Euronec, which proposes:

- a 'NEC Vision' (the answer to «what needs to be achieved?»), enabled by a comprehensive architecture;
- a NEC Roadmap (the answer to «how this should be done?», with milestones and recommendations, looking at short, medium and long term (2025).

EDA is supporting the work through a series of workshops. Two of them took place in 2009 (with the Committee on the Civilian Aspects of Crisis Management-CIVCOM and with the EUMS). EDA has also launched a 'NEC Synergy Campaign' across all EDA working groups and invited national experts in capability, R&T and armaments to contribute and review the results.

For the longer term, the NEC Vision, which encompasses the People, Information and Technology dimensions highlighted by the NEC Concept, is based on a number of principles, including:

- ubiquity: one person, one information profile, wherever connected;
- federated architecture: so that organisations and systems can be flexible and tailored to the needs of particular crises as they arise; re-use of existing investments: so that a realistic approach is taken to the continued use of legacy systems, ensuring cost-effectiveness.

In parallel PT NEC is preparing a NEC Roadmap Tracking Tool, to allow the management of the NEC Roadmap. Among future projects that are already envisaged is the elaboration of guidelines for

developing capabilities which are network enabled, as well as a set of assessment criteria and tools.

The relationship with NATO in this strategic development is considered as well. The staff-to-staff contacts between EDA and ACT have highlighted that both organisations have been tasked to develop and propose specific NEC Roadmaps for implementing respectively the EU and NATO NEC Concepts, requiring alignment. Similar actions were conducted at staff level with NATO Headquarters C3 Staff and with the C2 Centre of Excellence (Ede, Netherlands). Clearly, interoperability with NATO is key for the Member States as it is ensuring that the essential EU aspects of NEC are developed.

### 3.9 Software Defined Radio (SDR)

Software Defined Radio technology will be an important part of NEC implementation. SDR can be understood like a platform or foundation to the NEC building. SDR products – in the form of a platform and different waveforms – will enable communication between the different parts of the building, that is between different applications and features in modern crisis management operations. SDR technology and products will provide secured, networked telecommunications at all command levels. To put it in simple terms: SDR technology enables to have one radio with many purposes.

SDR has been on EDA's agendas since 2006. The Agency's particular focus is on the standardisation and certification of SDR products. It complements the development work done by pMS in various Category B projects and EDA operational budget studies.

At the beginning of 2009, under the auspices of EDA and the European Commission, the SDR stakeholders met to present the final results of the studies on 'Software defined and Cognitive Radio as well as spectrum management for European Defence' (SCORED) and on 'Wireless Interoperability for Security' (WINTSEC). The two studies are forming the background for the future development of the SDR technology for military and civilian security users, providing the basis for the interoperability. The studies complement each other, with the

SCORED study concentrating on military related aspects and the WINTSEC study aiming at use of SDR technology for public security.

The project SCORED was performed by the Consortium composed of 20 European industries and research organisations. Its objective was to give a vision of current SDR issues from the military perspective, analysing the added value of this new technology and providing the industrial view on its possible evolution at the European level. Both studies – SCORED and WINTSEC – have been followed by new ‘sister’ programmes, the EDA Category B European Secure Software Defined Radio Referential (ESSOR) project and the European SDR for Wireless in Joint Security Operations (EULER) programme respectively, implementing reference systems and demonstrators of SDR technology for both areas.

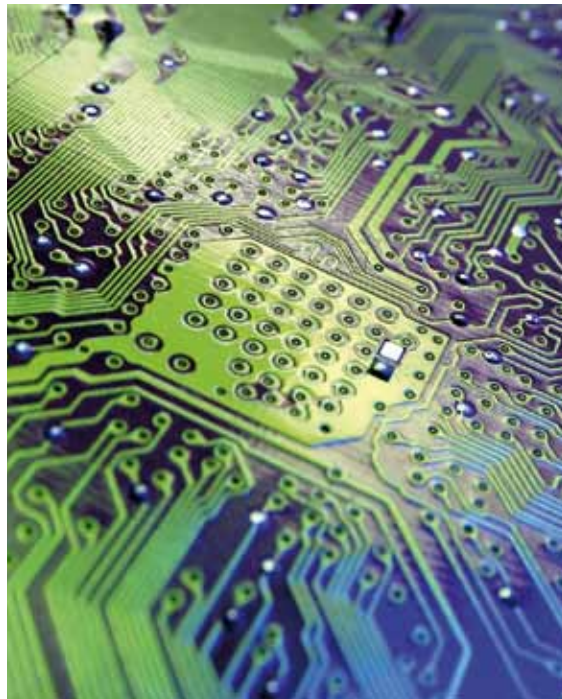
In 2009, EDA also contracted an R&T ad-hoc Category B project on High Data Rate Technology for HF Communications (HDR-HF), jointly funded by Germany, Belgium and France. The project will develop and validate the concept of a Very High Data Rate (VHDR) communication in the High Frequency band, providing a cheaper complement to Satellite Communications solutions for long-range data communication.

On the R&T side, throughout 2009 EDA also supported its pMS in specification of new ad-hoc category projects focusing on Cognitive Radio and on tools to prepare the operational deployment and monitoring of the SDR network during the mission.

In 2009, EDA launched two Operational Budget studies supporting international standardisation activities and certification development in form of ESSAC (European SDR Standardisation and Certification Feasibility) and UWGT (Universal Waveform Generation Tool) studies. Final results will be received at the end of 2010 and beginning of 2011.

A highlight of the activities on Software Defined Radio was the EDA SDR Conference, which took place in November in Finland. It brought together

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international key stakeholders from EDA, ESSOR, US Joint Programme Execution Office, NATO, the European Telecommunication Standardization Office (ETSI) and the Wireless Innovations Forum (formerly the SDR forum). The main achievement of the Conference was the consensus on a standardisation work share approach. This approach is known as the ‘three basket model’ which is supported officially by PT SDR community as well ETSI and Wireless Innovations Forum.

This model would see SDR architecture standardisation falling into three different baskets (see Figure 4). The first one would encompass technologies potentially accessible to everyone, in a market-driven approach; governments would control content and release of defence related product specifications in order to guarantee compatibility with non-public Applications Programming Interface specifications as well as backward compatibility. The second basket includes more sensitive issues, for which accessibility would be restricted to trusted partners; involved governments would handle directly custodianship. There may also be need for a third basket which deals specifically with individual nations’ sensitive information.

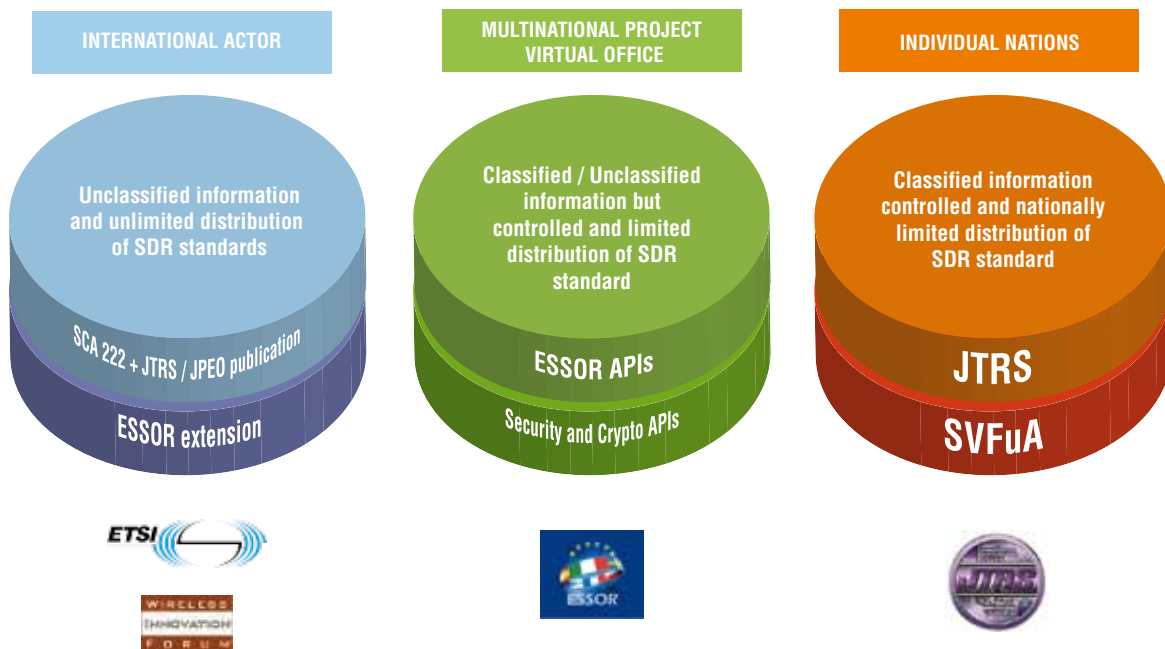


Figure 4 – The three SDR baskets

### 3.10 Third Party Logistics Support (TPLS)

In April 2009 the EDA Steering Board in National Armaments Directors formation decided to establish the European Third Party Logistic Support (TPLS) platform. On 25 May 2009 the EU TPLS platform went online and the registration for Economic Operators started. Since July 2009 Contracting Authorities from EU Member States, all EU institutions and International Organisations, such as the UN, have access to the platform.

The purpose of the EU TPLS platform is to establish a TPLS community to foster the exchange of TPLS related information (such as best practice, lessons learned, etc) amongst the users and to promote the development of a more cooperative approach to contracting.

Its key feature is a Catalogue of Services. This catalogue is structured along the six basic logistic functions of the EUMS “Concept for Logistic Support for EU Operations”. Registered Economic Operators can use it to promote their services and to provide detailed information about their operational capabilities. This mapping allows logistics planners and

procurement experts using the platform to identify the most appropriate solutions for their operational needs.

The lessons identified through recent activities are as follows:

- The relevance of the concept and the innovative approach engineered by the stakeholders through the Agency has been proven.
- The platform has been successfully supporting a number of Contracting Authorities to identify commercial solutions for their needs (e.g. air maritime surveillance assets for Operation ATALANTA, medical support for the EU Training Mission in Uganda, helicopter service provider for the rescue operation in Haiti, etc.). The TPLS platform has also helped civilian missions such as EULEX Kosovo and EU Security Sector Reform (SSR) Guinea-Bissau to identify possible logistic solutions.
- A community of users is now well established and growing in number. Though still in its trial phase, 100 economic operators and 45 contracting authorities have already registered and the full spectrum of services is now covered.



EUFOR/Thomas RCA ES Casa

- To facilitate and improve the co-operation amongst the users (especially Contracting Authorities) collaboration tools are required and need to be developed.
- In the first operational year the TPLS Platform has already resulted in savings in the order of € 5 million.

The establishment of the TPLS platform was a significant first step to enhance the logistic support for EU Crisis Management Operations. But, there is still a lot of work to do to increase the added value of the TPLS platform. In the trial phase, which will last until the end of 2010, it is planned to implement additional functionalities such as a web forum, a library for generic technical specifications and previous contracts, and the wiki-based Virtual On-side Information Centre for TPLS. In particular the latter will provide the opportunity to enhance the open exchange of TPLS-related information amongst all users. This would guarantee better visibility of contractors engaged in an area of operations.

The EU TPLS platform is the result of a remarkable cooperation between experts from the EU member states, EU institutions and industries. The results so far demonstrate the success of the project and it shows that we are on the right track to achieve our goal - the improvement of logistic support for EU CMO.

### 3.11 Joint Investment Programme- Force Protection (JIP-FP)

2009 was the third year of operation for the R&T Joint Investment Programme on Force Protection. This programme launched in 2007, and worth € 55 million, gathers together efforts on force protection of 20 European governments (Austria, Belgium, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain and Sweden). The first two calls for proposals, issued in 2007, covered the topics "Collective Survivability", "Wireless Communication" and "Individual Protection Technology Forecasting". They led to the signature of eight R&T contracts for a total of € 36.87 million in 2007-2008. Each contract is supervised by an Executive Management Group appointed by contributing Members, which reports to the Management Committee in charge of the whole programme. The third call launched in 2008 on "Data Analysis" and "Data Fusion" led to the signature in 2009 of five contracts, chosen among 14 proposals.

In 2009, the EDA issued on behalf of the contributing Members the fourth and last call, covering the topics "Mission Planning/Training in an asymmetric environment" and "Secured tactical wireless communications". The proposals were assessed from 11 to 15 May 2009 by experts from contributing Members assisted by EDA staff on five criteria: capability improvement, R&T excellence, management, value for money, cooperation.

The call encouraged the submission of proposals from Estonia, Norway, Poland and Slovakia by explicitly awarding bonus points to tenders including entities from these contributing Members, in order to improve their industrial return over the whole programme. Interestingly, the incentive effect was sufficient by itself: the bonus points did not affect the outcomes of the assessment. As a result, the mean difference between the financial contribution of a contributing Member to the programme and its return in terms of contracts is 22%. The assessment of 15 proposals led to the selection of five contracts, which will kick-off early 2010. The

Call	Acronym	Title	Prime contractor	Contract signature date	Project value k€ (incl. VAT & cofunding)
3	MEDUSA	Multi Sensor Data Fusion Grid for Urban Situational Awareness	Vitrociset	28/04/09	5,615
3	SUM	Surveillance in an Urban environment using Mobile sensors	GMV	29/04/09	2,687
3	DAFNE	Distributed and Adaptative multisensory Fusion Engine	Ingegneria des sistemi	06/05/09	3,825
3	D-FUSE	Data Fusion in Urban Sensor Networks	Thales NL	18/06/09	5,202
3	AUDIS	Acoustic Urban Threat Detector for Improved Surveillance Capabilities	D'Appolonia	18/06/09	2,308
4	SIMS	Smart Information for Mission Success	Thales-Raython Systems - FR	08/12/09	3,683
4	ICAR	Intelligent Control of Adversary Radio Communications	Thales Comm. FR	14/12/09	4,268
4	CARDINAL	Capability study to investigate the essential man-machine Relationship for improved Decision making In urban military environment	TNO NL	14/12/09	2,733
4	ATHENA	Asymmetric Threat Environment Analysis	TNO NL	14/12/09	3,577
4	EUSAS	European Urban Simulation for Asymmetric Scenarios	EADS D&S Systems FR	14/12/09	3,230

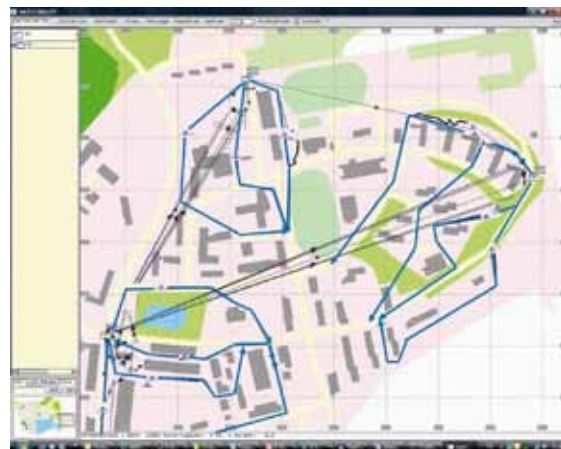
Table 1 – JIP-FP contracts signed in 2009

financial oversubscription for this fourth call was 2.4. Overall, 10 new contracts worth € 37.13 million were placed in 2009 for the JIP-FP programme, as shown in Table 1.

As the last JIP-FP contracts were signed in 2009, the emphasis in 2010 will be put on their implementation. To facilitate the dissemination of the results, the EDA granted IT access rights for members of the Management Committee to deliverables approved by the Executive Management Groups. It is also foreseen to invite more largely government experts to final meetings or workshops held in the frame of the contracts.

Due to the originality of the JIP-FP programme, it was deemed important to develop an efficient lessons learned process for future programmes. The EDA circulated in March 2009 a questionnaire to R&T Directors, consortia, and members of the Management Committee and of the different Management Groups. Results were presented to the Steering Board in R&T Directors formation of April

2009. They revealed that contributing Members appreciate the JIP-FP networking effect and the possibility to better know the European Research and Technological Development Base.



Simulation of surveillance of urban area in the AHEAD project © JMBG GmbH

### 3.12 Joint Investment Programme-Innovative Concepts and Emerging Technologies (JIP-ICET)

The Joint Investment Programme on Innovative Concepts and Emerging Technologies (JIP-ICET) focuses on R&T topics that are not yet technologically mature for operational systems but hold great potential for future military capabilities. It also promotes the use of civilian innovations in military systems by encouraging cooperation between established defence industrial companies and newcomers like Small and Medium-sized Enterprises (SMEs), academic institutions and non-governmental laboratories.

The JIP-ICET programme has 11 contributing Members (Cyprus, Germany, Greece, Spain, France, Italy, Hungary, Norway, Slovenia, Slovakia and Poland) with a total budget of € 15.6 million. The first call of proposals closed in February 2009 and the R&T goals addressed were non-linear control design, integrated navigation architecture, nanotechnologies for soldier protection and sustain, and structural health monitoring. Out of 22 eligible proposals the Management Committee selected in May 2010 four proposals that had received highest total scores in the evaluation according to the following criteria: R&T innovation, management, value for money, and cooperation.

The second call for proposals closed in October 2009, and it covered the remaining ICET R&T goals: remote detection of hidden items, nanostructures electro-optical and others, radar technologies, and nanotechnologies for soldier protection and sustain. The Agency received 34 eligible proposals, with an overall financial oversubscription rate of about 4.7. The Management Committee selected six proposals which will be contracted in the first semester of 2010.

The first ICET projects started in the end of 2009 so there are no technical results yet. However, one of the ICET objectives was to encourage academic institutions, non-governmental laboratories and SMEs to participate in European defence technology research cooperation. This goal has been clearly

achieved as two thirds of the members of successful consortia belong to these groups (Figure 5) which is much more than in other EDA cooperation forms.

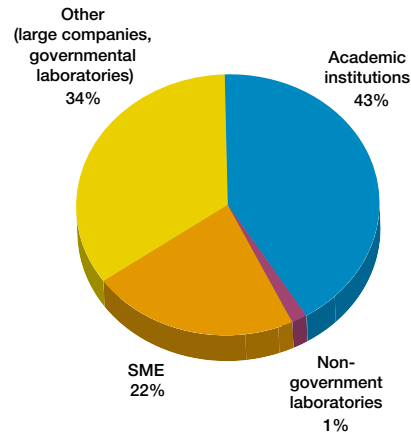


Figure 5 – Members of successful consortia of the ICET calls for proposals according to their organisation type

### 3.13 Offsets

2009 marked yet another breakthrough towards creation of an internationally competitive European Defence Equipment Market (EDEM), as a key means to strengthen the European Defence Technological and Industrial Base (EDTIB).

The Code of Conduct on Offsets became operational on 1 July 2009, paving the way for addressing offset practices in Europe in a pragmatic manner.

Offset policy and industrial participation have for decades been used as both political and economic instruments to cope with market access barriers and to compensate for the prospective loss of work to national defence industrial sectors. In some cases, offsets have helped develop defence technological and industrial base skills and stimulate work and business opportunities by generating long-term partnerships and facilitating market access. In others, they have been inefficient, unnecessarily duplicative and market distorting. Yet, offset remains a global phenomenon, unlikely to fade away in the near future, as long as defence procurement procedures are restricted and competition in the global defence marketplace is subject to an uneven playing field.



The implementation of the Code's provisions by 26 European countries heralds a fundamental change in the way offsets are used in defence procurement, whilst ensuring compliance with EU law.

It aims at limiting adverse effects of offsets through consistently injecting more transparency and shifting the offset focus from quantity to quality. To this end, it provides for 'smart' offsets to help develop capability-driven, competent and competitive defence industrial capacities supporting the development of a strong EDTIB; clarifies offset requirements; and introduces a 100% cap in an effort to reduce reliance on offsets. The Code also advocates, whenever practicable, the use of mutual abatements on a voluntary basis as a means to reduce reciprocal offset commitments.

The Code comes together with two vital implementation tools. The Offset Portal on the EDA website provides detailed information on Member States' and Norway's national offset policies and practices, including national regulations and guidelines, offset requirements criteria and modalities.

The Reporting and Monitoring System helps achieve the Code's full effectiveness providing the reciprocal visibility and reassurance on the equal and uniform application and implementation of the Code by all the subscribers.

The first six months after the Code's entry into force have brought some genuinely substantive results, demonstrating that its arrangements – even if legally non-binding – work whilst considerably contributing to the development of a more open and competitive defence market and stronger EDTIB.

The screenshot shows a web browser window displaying the EDA website's 'Code of Conduct on Offsets' page. The page header includes the EDA logo and the title 'OFFSETS - National Policies and Practices'. Below the header, there is a navigation bar with a 'Back to EDA Website' button. The main content area is titled 'Code of Conduct on Offsets' and features a list of 26 participating countries, each with its national flag and a brief description of its offset policy. The list includes Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom. The page also contains a detailed introduction to the Code, explaining its purpose and the reporting and monitoring system.

### 3.14 Small and Medium-sized Enterprises (SMEs)

The uniqueness of the defence market relates to a number of issues: technological level, programme cycle, security of supply, market regulation and industry's relationship with governments. The governments dominate the sector through a variety of roles such as regulators, owners, controlling shareholders, funders of R&D and as principal customers. Therefore, the governments' attention should be directed to all stakeholders, not only to the major prime contractors but also to Small and Medium-sized Enterprises (SMEs), which possess the technology but often lack resources necessary to penetrate the market.

European SMEs have a vital role to play in helping shape the European Defence Technological and Industrial Base (EDTIB) of the future which will depend upon effective utilisation of human capital and innovation. The benefits of competition should be cascaded down the supply chain - so that competent second- and third-tier companies, often SMEs, are able to prospect in the European market.

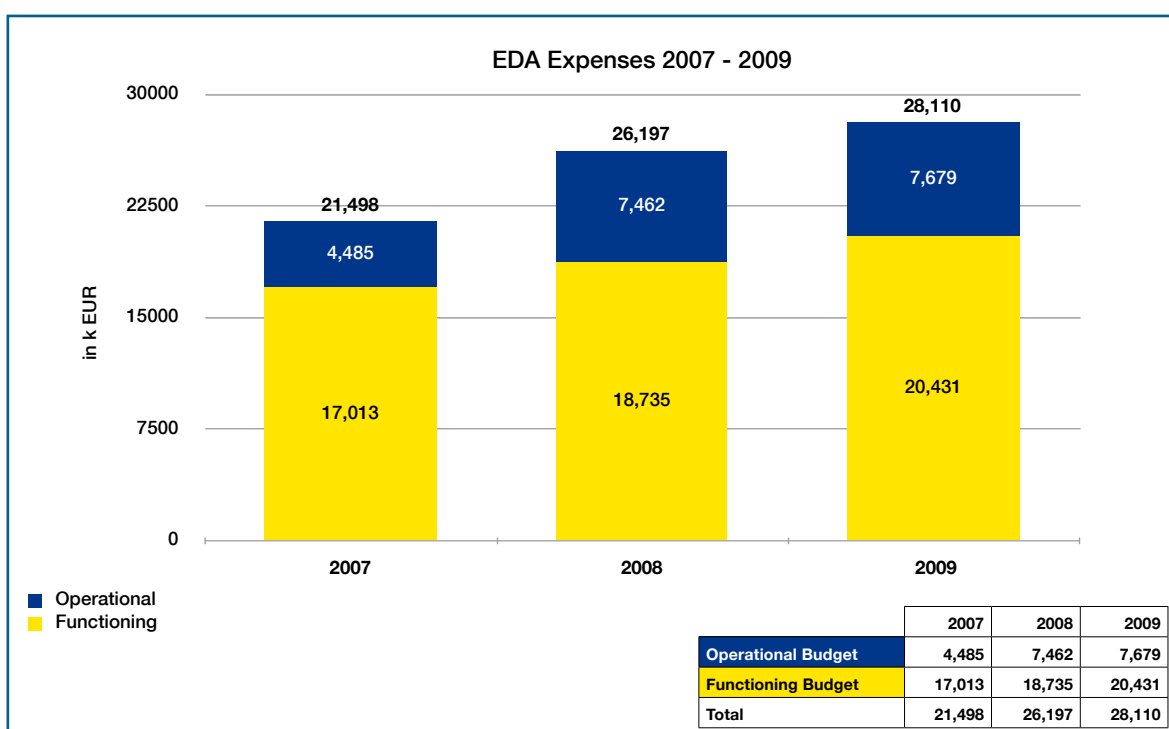
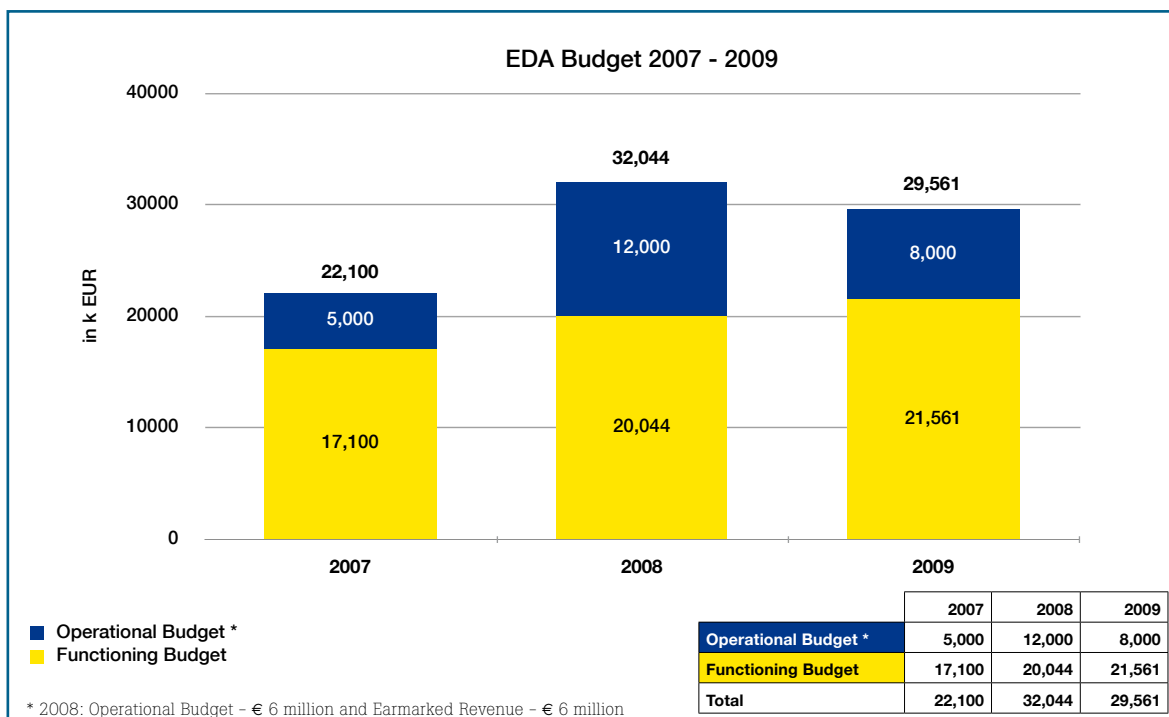
The "Guidelines for Facilitating SMEs' Access to the Defence Market", approved by the Steering Board in October 2009, provide non-binding recommendations for possible measures to be implemented by national authorities to support SMEs operating in the defence market. They have been developed to direct the governments' attention to SMEs and to create better conditions for participation of these companies in the defence market. The main problem for SMEs is 'to know and to be known' and therefore a strong emphasis is put in the Guidelines on a proper flow of information from government institutions. Also, it has been recognised that tendering and contracting procedures in national languages are a crucial obstacle for SMEs' cross-border activity and steps should be taken to allow companies to easily identify interesting opportunities abroad. The Guidelines address a number of other issues important for SMEs: equal conditions for main- and sub-contractors, minimum reaction time for smaller contracts, protection of SME-owned Intellectual Property Rights (IPRs) and fostering industrial cooperation with SMEs in R&D/R&T projects.



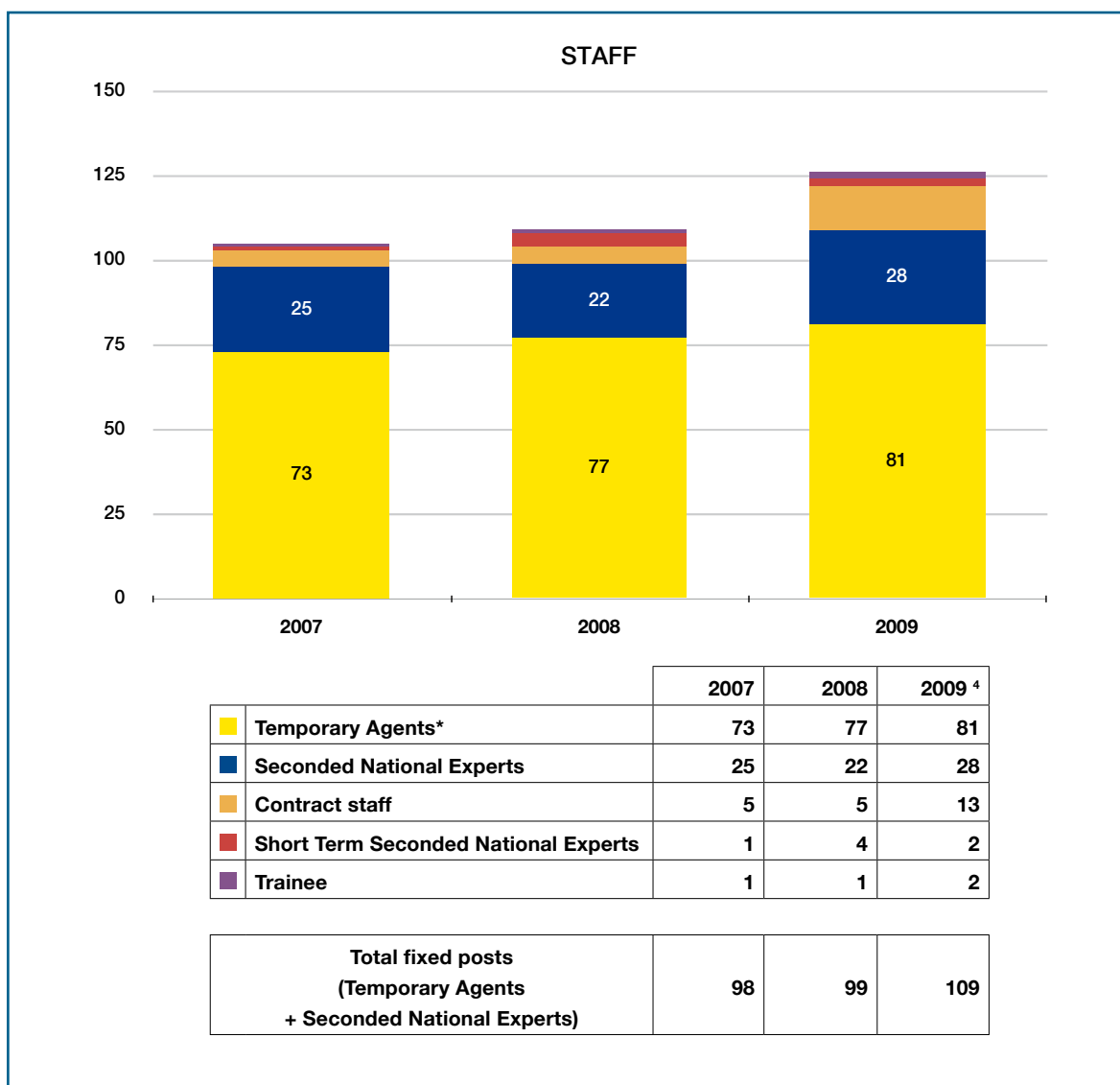


# Statistics

## 4.1 Finance



## 4.2 Staff



\* Includes Seconded Officials from other EU Institutions

### 4.3 Contracts

#### Ad Hoc contracts signed in 2007, 2008 and 2009

	2007	2008	2009	TOTAL
Ad Hoc A	13.083.272	23.786.753	37.128.348	73.998.373
Ad Hoc B	51.146.572	46.272.314	122.505.706	219.924.592
Total	64.229.844	70.059.067	159.634.054	293.922.965

Value in Millions of Euro - All figures are VAT inclusive (for industries and governments).

#### Overview of R&T Ad-Hoc Projects and Programmes

In 2009, EDA participating Member States signed 19 Technical Arrangements and Project/Programme Arrangements for R&T Ad Hoc Category B projects, worth in total € 130.95 million (including VAT and co-funding).

Regarding Ad Hoc Category A programmes, the Programme Arrangements of the Joint Investment Programmes on Force Protection and ICET were signed in 2007 and 2008 respectively. In 2009, the EDA committed on behalf of pMS and Norway € 40.95 million for 10 JIP-FP and 2 ICET contracts.

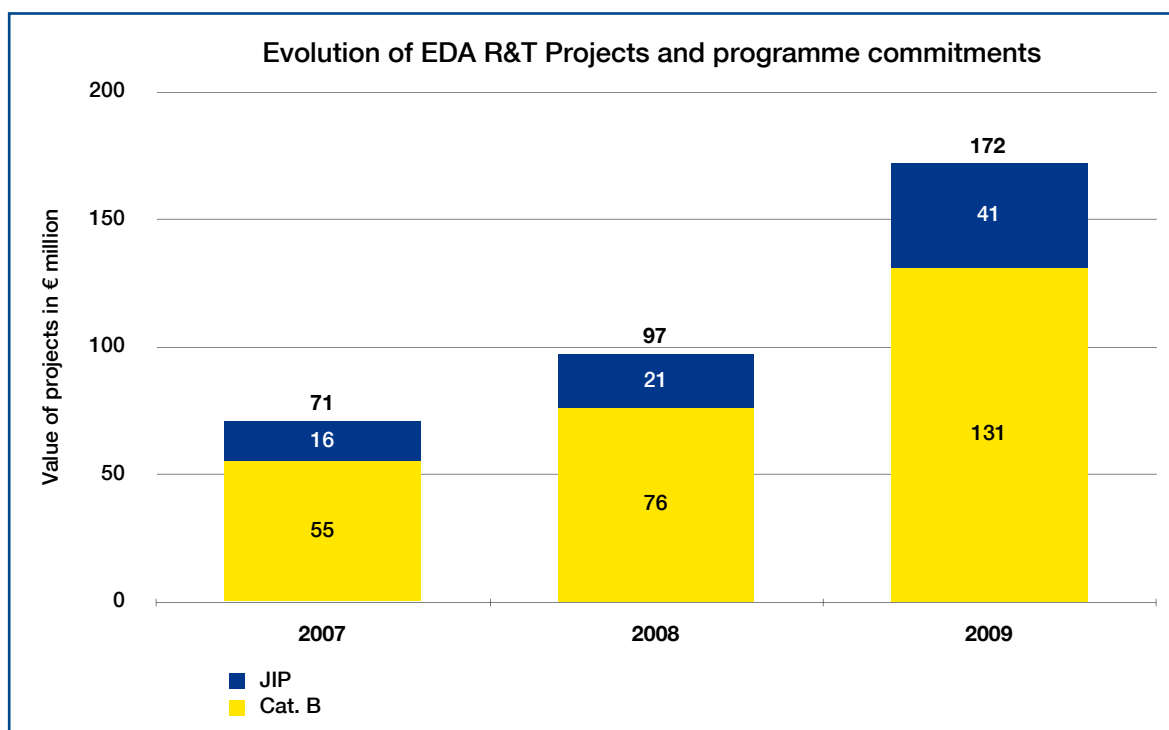


Figure 6 - Evolution of EDA R&T Projects and Programme commitments

## 4.4 Implementation Work Programme 2009

Long-term Framework	
Capability Development Plan (CDP)	Continued capability analyses in order to develop further conclusions, strategic context cases and actions. Preparations for the CDP Update in 2010 by initiating work on lessons learned from Afghanistan and work on landscaping in the area of 'Land Manoeuvre'. CDP promotion in several capitals. The CODABA (Collaborative Data Base for cooperative programme matchmaking Experts Group and Extranet Forum) were established. Improvement of the IT-tool and permanent search for match-making opportunities were introduced.
European Defence R&T (EDRT) Strategy	Continued implementation of the strategy into R&T collaborative activities, with the overall objective of improving the level of pMS' cooperation. CapTechs started the preparation of Strategic Research Agendas (SRAs). The Strategy 'Means' was further upgraded and the project preparation process was further improved. The EDRC database was developed to contribute to the R&T network. Four CDP areas were examined (MMCM, CBRN, CIED and CMANPADS), key-technologies identified for EDRT priorities and new proposals and projects were launched in areas identified in the framework of the regular review of the Strategy 'Ends'.
European Armaments Cooperation (EAC) Strategy	The 'Guide to the Preparation Phase' was introduced in the MMCM, FTUAS, BIO EDEP and FTH projects. The way head for Education and Training was approved by the Steering Board.
European Defence Technological and Industrial Base (EDTIB) Strategy	Work continued on the two selected areas: Future Air Systems (FAS) and the Ammunition Sector. FAS: helicopters and UAS chosen by pMS as primary areas for collective action on aeronautics with work launched on a FAS roadmap and implementation plan (identifying i.a. transversal technology and supply chain issues with a specific focus on SMEs). Ammunition: priority areas for further elaboration identified: qualification, harmonisation of requirements, non-EU dependencies. Launched for consideration: the establishment of a European Network of National Safety Authorities and the development of the next generation of Precision Guided Munitions.
Project Related Work	
Joint Investment Programmes (JIPs)	JIP-Force Protection: completion of Calls 2 & 3 was achieved. JIP-Innovative Concepts and Emerging Technologies: completion for proposals and the launch of Call one was achieved. New JIP programme for Unmanned Maritime Systems (UMS), a Cat.A programme combined with a group of Cat.B projects, was launched by the Steering Board.
Category B projects/programmes	The Technical Arrangements of 19 new Cat.B R&T projects were signed.



Network Enabled Capabilities (NEC)	Work continued, in particular on the EU NEC Implementation Study. NEC activities with CIVCOM and EUMS. Two NEC IS progress reports (Vision and Roadmap). Tendering procedures launched for NEC Roadmap Tracking Tool. NEC Concept noted by the Political and Security Committee.
Increased availability of helicopters for ESDP operations	Promotion of cooperation between pMS having the same needs and solutions initiated to address common problems by investigating ways of providing training through workshops, the Ad Hoc Project Group Helicopters and two studies. Pilot live training exercise in the French Alps (Gap, March). Tactical English language course organised. First crews trained for real-life deployment in Afghanistan. Ministerial Steering Board in November approved the Helicopter Training Programme (HTP) concept. The German-French Future Transport Helicopter (FTH) project became an EDA Cat.B project in May. Work started on development of the RFI business cases.
Counter Improvised Explosive Devices	Work progressed on establishing a common basis as well as training projects and guidelines for developing national C-IED capabilities. First EDA C-IED Military Search course was held in Rome. The R&T Detection Expert Group was launched in the autumn with the purpose of delivering recommendations for future investments.
Logistics	After an initial test phase the Third Party Logistics Support (TPLS) platform was activated on 1 July. First commercial solutions through the TPLS platform were identified by national and international buyers, saving up to € 5 million in total.
CBRN	Explosive Ordinance Disposal-EOD: Multinational Incident Commander's and Staff Planners Course was held at the Belgian CBRN Centre of Excellence, allowing pMS to either develop own courses or integrate the course objectives in already existing courses. Minimum Standards of Proficiency for Education and Training of CBRN and EOD Specialists approved by the Steering Board.  Detection Identification and Monitoring-DIM: Common Staff Target on Integrated Biological Reconnaissance Defence System (BIRD) approved by the Steering Board. Cat.B Biological Equipment Development and Enhancement Programme (Bio-EDEP) – Programme Preparation Phase launched by the Ministerial Steering Board on May.
Intelligence	The Common Standardised User Interface (CSUI) concept demonstrator, aimed at developing an integrated workspace for Intelligence and Information management throughout the end Intelligence process, was finalised and presented to the pMS.  In total 18 weeks of Open Source Intelligence (OSINT) Pilot Courses, aimed at identifying the training required by OSINT operators to perform their duties in the most efficient manner, were conducted. Over 200 civilian and military representatives from the pMS and from EU institutions participated.
Health and medical support	Start-up of analysis of new areas of medical capability development.

Maritime Mine Counter Measures (MMCM)	The MMCM system preliminary technical definition in the Cat. B. project was achieved with EDA support.
Computer Network Operations	CDP priority under the responsibility of the EUMC/EUMS.
Counter MANPADS	Project Team established and work on conceptual and technical aspects was started.
Unmanned Air Vehicles (UAVs)	UAV Air Traffic Insertion: MIDair Collision Avoidance System-MIDCAS contract was signed in June.
Software Defined Radio (SDR)	The Cat B project was launched in October and a service catalogue was delivered. SDR Conference in Finland on SDR standardisation and certification organised, developing the 'three basket model'. The European Standardisation and Certification (ESSAC) Feasibility study was contracted. Concentrating on how to establish European SDR standardisation and certification in practical terms.
SATCOM	Progress made on the establishment of a European Satellite Communications Procurement Cell (ESCPC) single project office.
Space-based surveillance system	Six Member States' Multinational Space-based Imagery System (MUSIS) initiative became an EDA Cat.B project in May. MUSIS Roadmap approved by the Ministerial Steering Board.
Space Situational Awareness	Common Staff Target developed.
Kopernikus services	Interaction with the Commission on the Global Monitoring for Environment and Security (GMES) programme continued.
Transportation	Progress made on development of common EATF requirements through a Landscaping Study and a Diplomatic Clearances study. EATF LoI signed by 12 Ministers of Defence in November.
Maritime Surveillance	Preparatory phase in MARSUR networking launched. Second study (technical specification of the interface) was contracted. The FUAS Common Staff Requirement feasibility phase launched. Wise Pen Team to produce a MARSUR 'think Piece' contracted and launched in July. Interim Report sent to Steering Board in Capabilities formation in October.
21st Century Soldier System	Work progressed to finalise common requirements for Combat Equipment Dismounted Soldier System (CEDSD) and for Soldier Centric Identification System (SCIS). A Technical Arrangement on R&T information exchange was signed..

Armoured Systems	Work on ad hoc projects on sub-systems continued and generated additional AFV ad hoc projects on components. The ETICE (Essential Technical & Industrial Capabilities Expiry), mapping the 2025 Firepower Technology Supply Chain, was produced as well as the ELAV - (Electric Armour for Armoured Vehicle).
Protection of Camps	Common Staff Target approved by the Steering Board in Capabilities formation. The Cat.B FICAPS contract was signed in December 2009.
Personnel Recovery	Target Architecture for Personnel Recovery was elaborated and the Concept for Personnel Recovery in EU Operations initiated. A study on detailed definition of capability requirements was launched.
Non-lethal Capabilities	Work progressed on efforts on Non-lethal Capabilities for EU Battlegroups. The use of force concept was realised. Work on Lessons Learned and Restrictions for use were initiated.
<b>Other Activities and Initiatives</b>	
ISR	The ISR Architecture Design study was launched after Steering Board approval of the Common Staff Target.
Comprehensive Approach	CDP priority under the responsibility of the EUMC/EUMS.
CIS	Work progressed on updating and upgrading the current CIS Architectures to reflect short term requirements and changes. First results are a merged repository and an architecture training plan. The Secure Management of Infrastructure study was finalised.
Information Exchange Requirements (IER)	Work progressed on updating and upgrading the current CIS Architectures to reflect short term requirements and changes. First results are a merged repository and an architecture training plan. The Secure Management of Infrastructure Study was finalised.
Frequency Management	Frequency management: work progressed on harmonising needs on the military use of the spectrum and frequencies required for UAVs, supported by the Study on Military Frequency spectrum allocations for the Insertion into General Air Traffic (SIGAT).
Defence Data and Benchmarks/Targets	Defence Data 2008 collected, analysed and published in November, including results on Benchmarks. More detailed defence data, including national defence data, published on the EDA website.
Treaty of Lisbon	Due to postponement of the ratification and the entry-into-force no particular activities conducted.
Relations with third parties	OCCAR: draft Administrative Arrangement negotiated and transmitted to the Council for approval. Informal relations continued. LoI: practical exchanges and contacts pursued. NATO: further extension of the network of informal staff-staff relations, with a particular focus on EDA-ACT relations; various Agency contributions to the EU-NATO Capability Group.

Policies	
European Defence Equipment Market (EDEM)	Code of Conduct on Offsets became active as of 1 July. Political Declaration on Level Playing Field approved by the Ministerial Steering Board in November. Upgrading and updating of the Electronic Bulletin Board for the publication of Member States defence contract opportunities under the Code of Conduct on Defence Procurement. Work on Security of Supply continued.
Defence Test and Evaluation Base	Work initiated on planning of how to implement the strategic principles described in the DTEB Conceptual Guide. The first Network of Test and Evaluation Experts in the area of Electromagnetic Effects was created when the ENTER Cat. B project was launched.
Standardisation	Work progressed on the development of the European Defence Standardisation Information System into a single portal for European standardisation activities. Studies on the use of standards by industry as well as a study on EU/US Standardisation were initiated. Standardisation best practice being developed by pMS.
Harmonisation of Military Airworthiness	The MAWA Forum continued to progress well with four Task Forces for different airworthiness disciplines. The Regulatory Framework started to produce the European Military Airworthiness Requirements (EMARS). Ministerial Political Declaration (November) on the timely Development and Implementation of the EMARS.

## 4.5 Defence Procurement

Government to industry contracts, published on EDA's Electronic Bulletin Board (EBB1) in the period 1 July 2006 to 31 December 2009:

<u>Contract Opportunities</u> (CNs) published by 19 SMS .....	469
<u>Contracts Awarded under competition</u> (CAN) .....	259 (€ 3.9 bn)
• cross-border awarded .....	75 (€ 1.3 bn)
• nationally awarded.....	184 (€ 2.6 bn)
• cross-border bids .....	101 (39%)
• awarded to SMEs.....	118 (45%)
• DE, ES, FR, UK are the SMS whose industries have benefited most from cross border contracts	
• Industries other than SMS also benefit from cross border awards (in particular the USA, Canada, Brazil, Switzerland)	
<u>Contracts Awarded without competition</u> (CANx).....	466 (€ 14.1 bn)

### EBB Market dimension

Number of awarded contracts.....	725
Value .....	> € 18 bn

### Explanation of Terminology

- **The Electronic Bulletin Board – EBB** (<http://www.eda.europa.eu/ebbweb/>) is the EDA Regime portal where European governments and industries publish their contract opportunities.
  - It consists of a Government-to-Industry part (EBB1) and an Industry-to-Industry one (EBB2).
- **Contract Opportunities** (CNs) are contract announcements published by SMS under the principles of the EDA Code of Conduct on Defence Procurement.
- **sMS** (subscribing Member States): those European countries adhering to the EDA Intergovernmental Regime to encourage competition in the European Defence Equipment Market (EDEM). As of today the sMS are AT, BE, BG, CY, CZ, DE, EE, EL, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, SE, SI, SK, UK and NO.
- **Contracts awarded under competition** (CAN) are those contracts that were prior published on EDA EBB for open competition and awarded under the principles of the EDA Code of Conduct on Defence Procurement.
- **Contracts awarded without competition** (CANx) are those contracts awarded without competition under the exceptions of the EDA Code of Conduct on Defence Procurement (... in cases of pressing operational urgency; for follow-on work or supplementary goods and services; or for extraordinary and compelling reasons of national security...).
- **Cross-border bids or awards:** when there is at least one non-national (in relation to the concerned contracting authority) defence company.

## 4.6 Defence Data 2008

The European Defence Agency is collecting defence data on an annual basis. The Ministries of Defence of the Agency's 26 pMS provide the data. EDA acts as the custodian of the data.

The data have been accounted for. They apply to the previous year. The 2009 data will only be collected in the course of 2010 and will be released by the end of the year. Thus, this Annual Report contains a selection of the 2008 defence data, as published by EDA in November 2009.

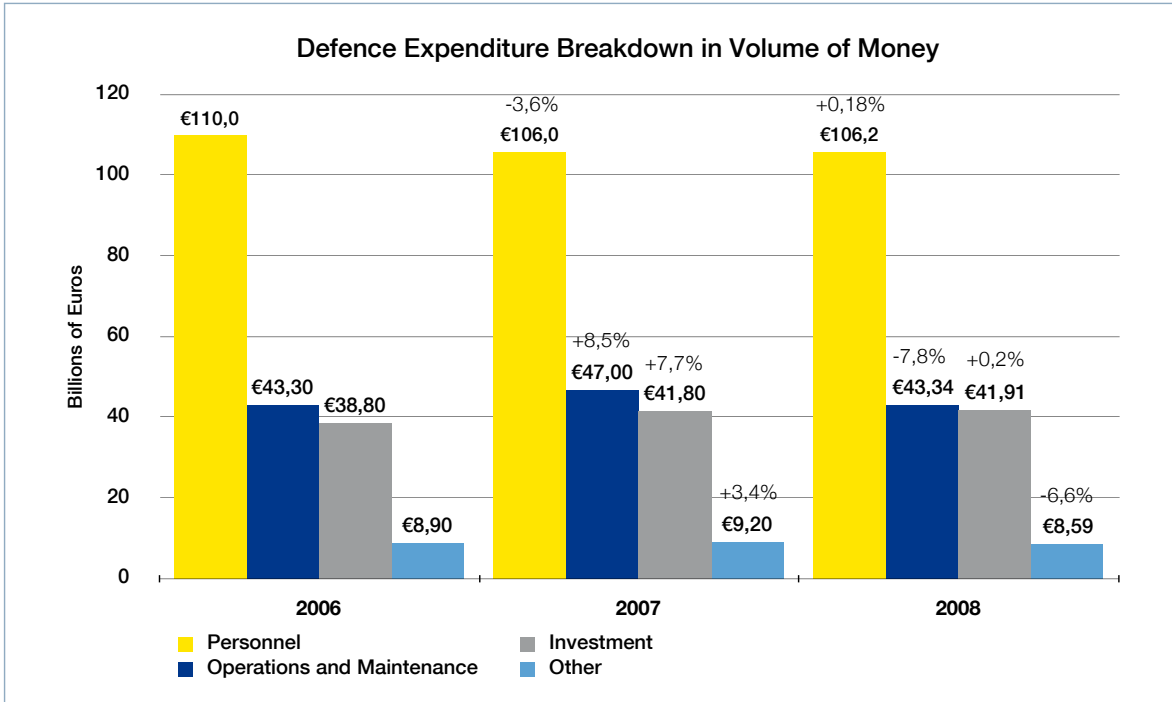
In November 2007 the Ministerial Steering Board approved four collective benchmarks for investment:

- Equipment procurement (including R&D/R&T): 20% of total defence spending
- European collaborative equipment procurement: 35% of total equipment spending
- Defence Research & Technology: 2% of total defence spending
- European collaborative Defence R&T: 20% of total defence R&T spending

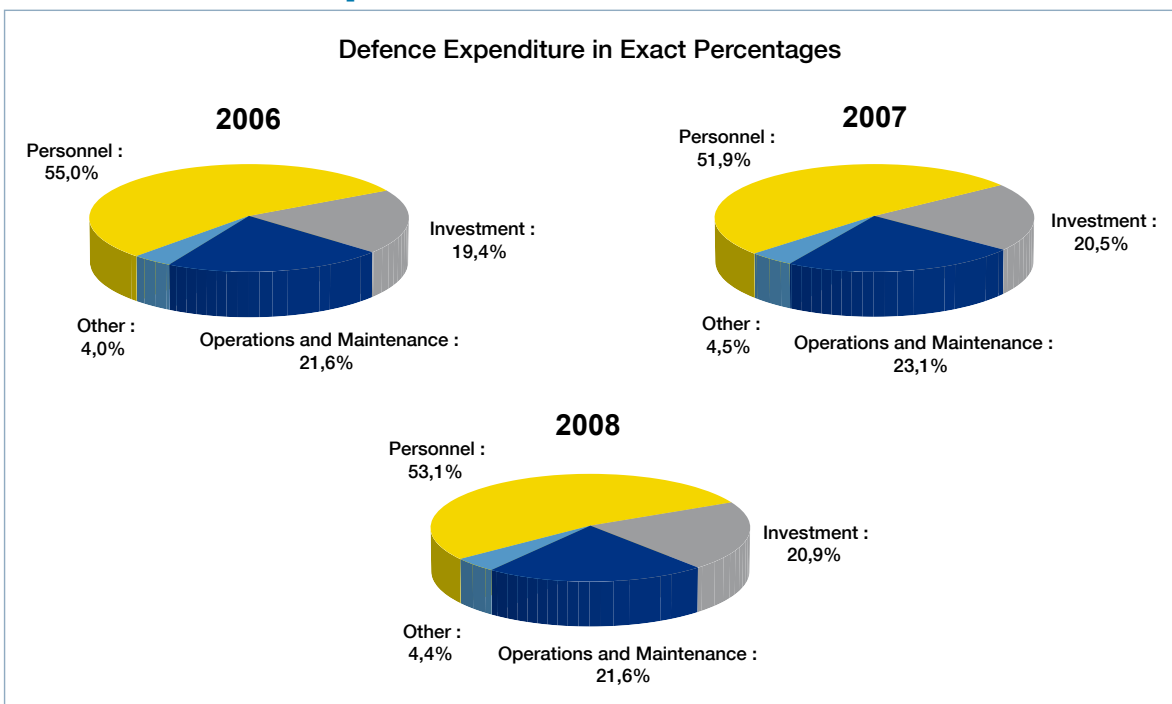
These benchmarks are collective: they apply to the total sum spent by all participating Member States together. They are voluntary in the sense turning them into national targets is optional. There are no timelines for realising these benchmarks.

The following key tables refer to the data for the three years 2006-2008.

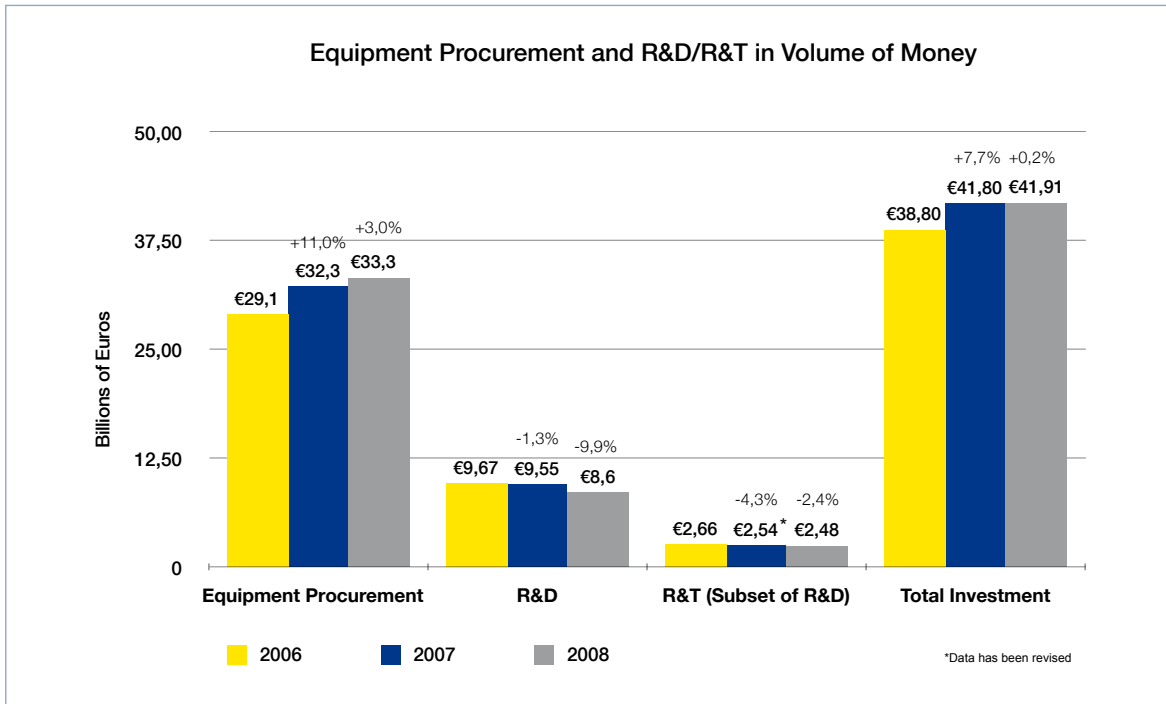
## REFORM – Defence Expenditure Breakdown



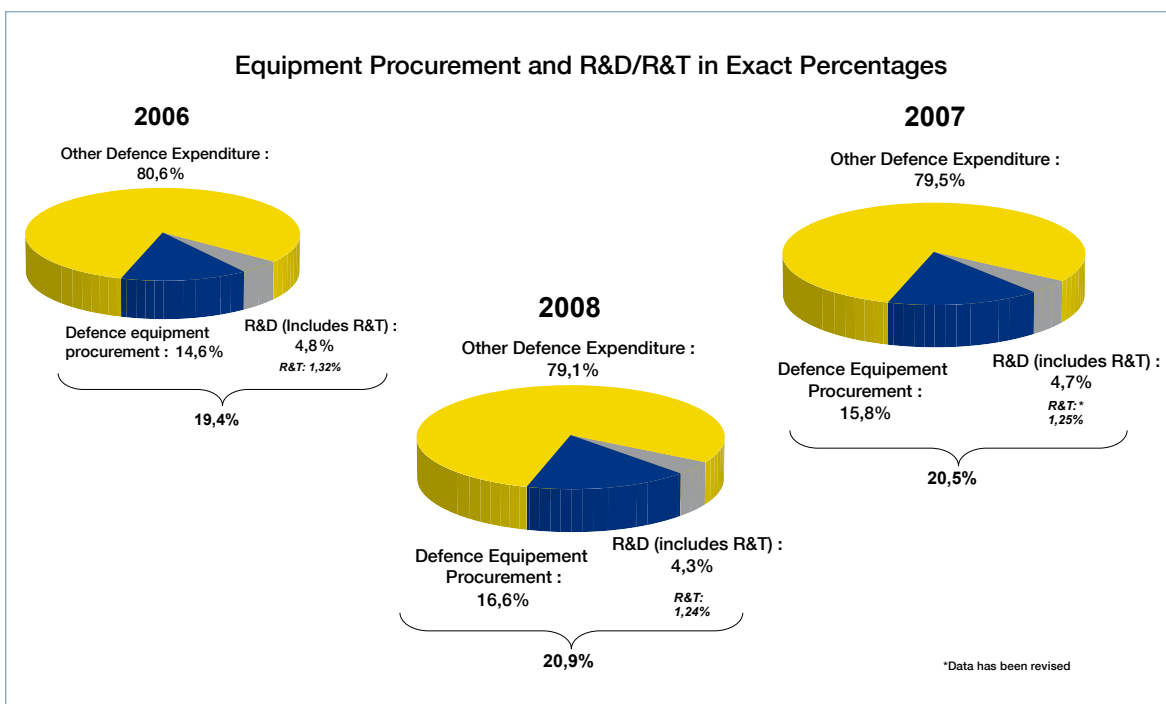
## REFORM – Defence Expenditure Breakdown



## REFORM – Investment Breakdown

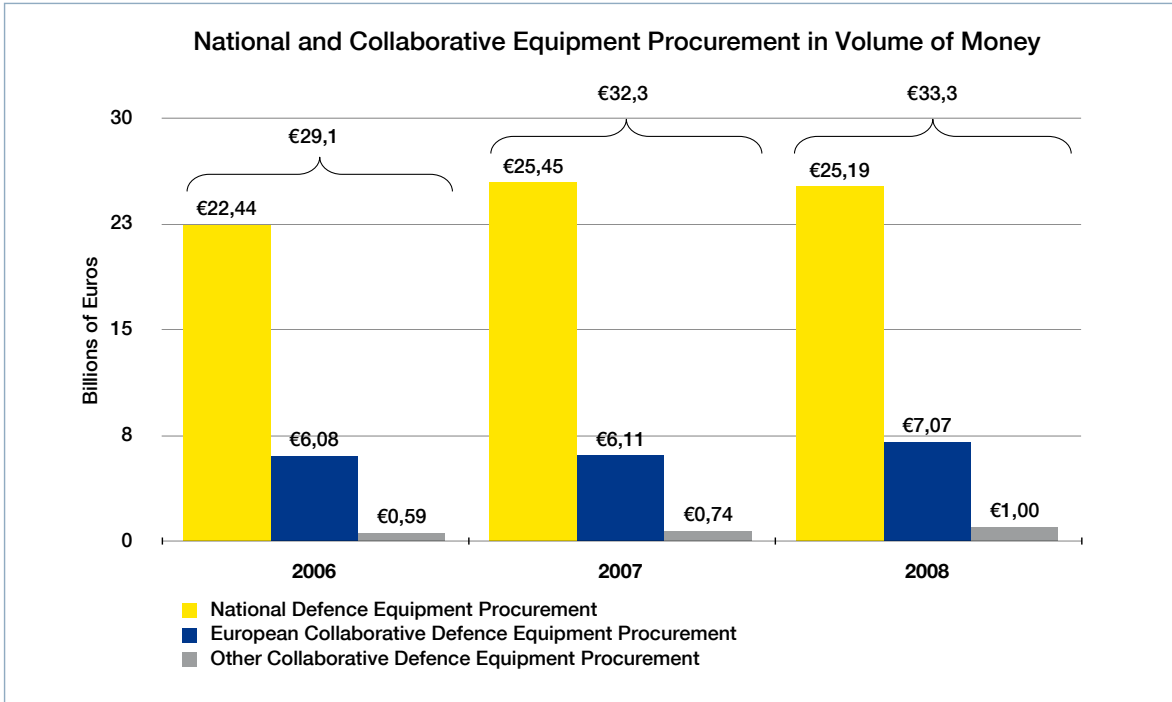


## REFORM – Investment Breakdown

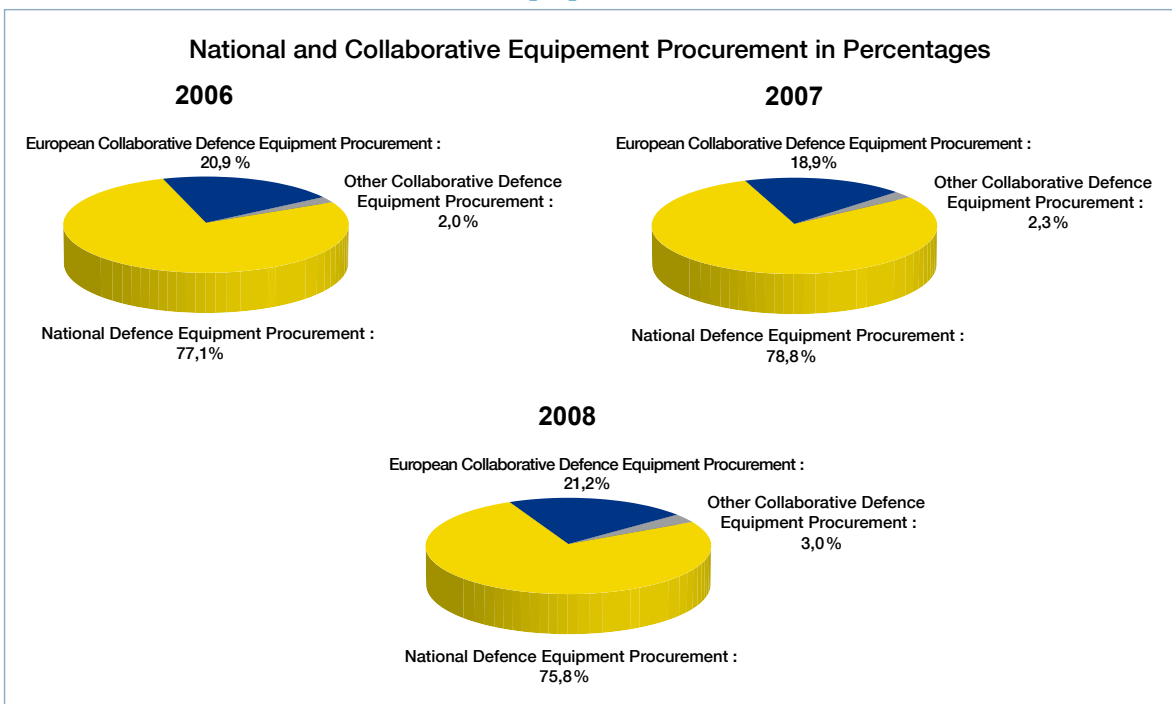




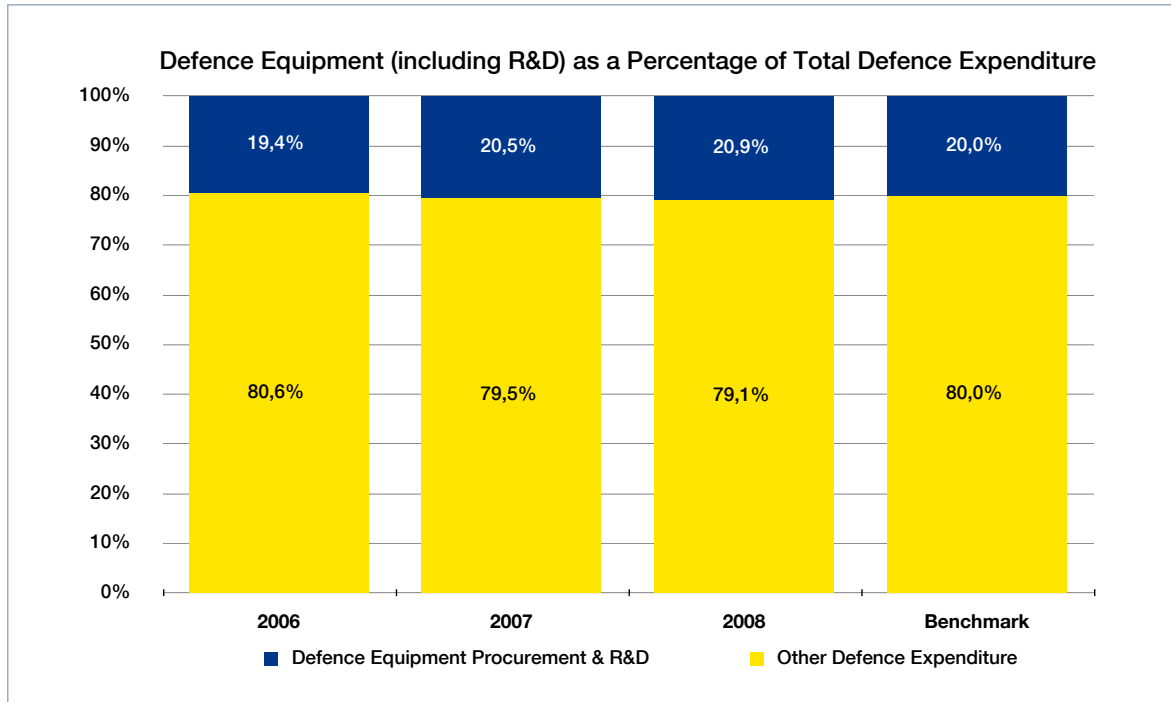
## EUROPEAN COLLABORATION – Equipment Procurement



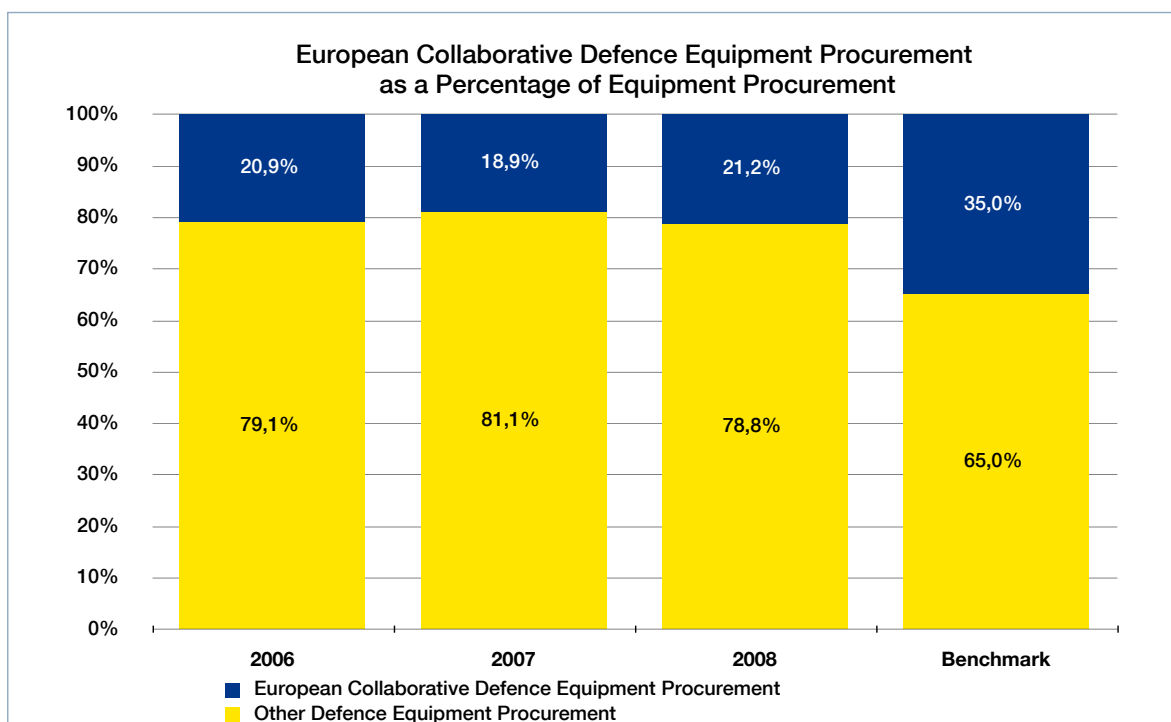
## EUROPEAN COLLABORATION – Equipment Procurement



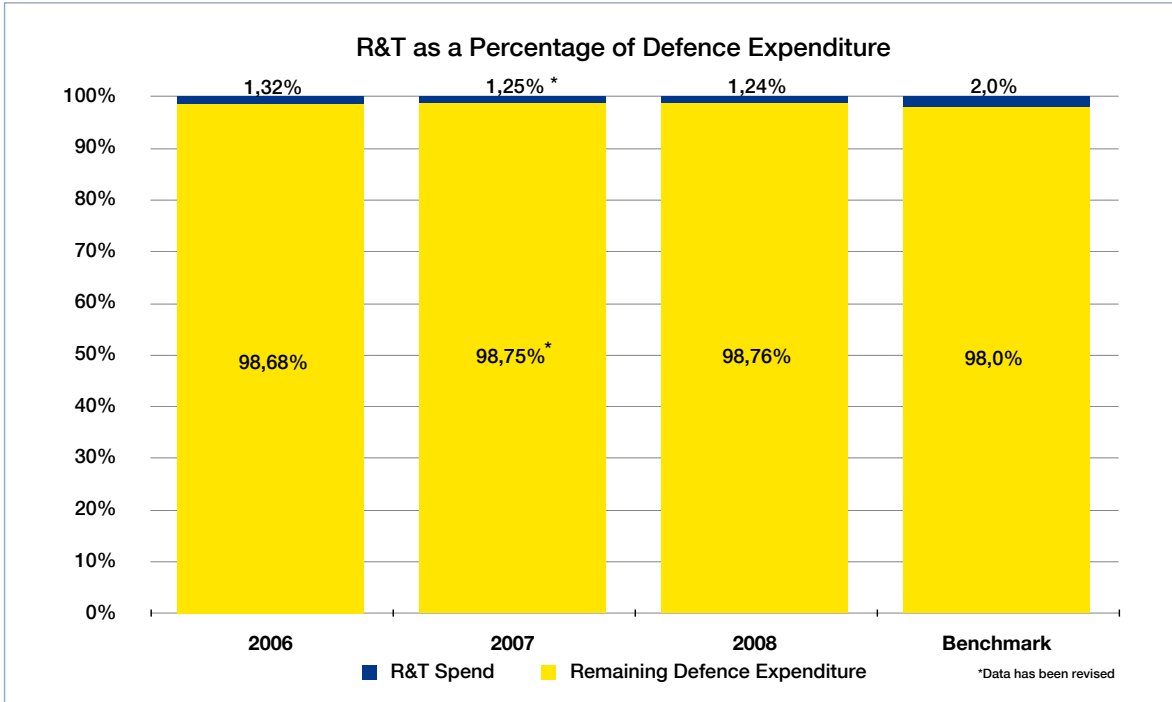
## Benchmarks



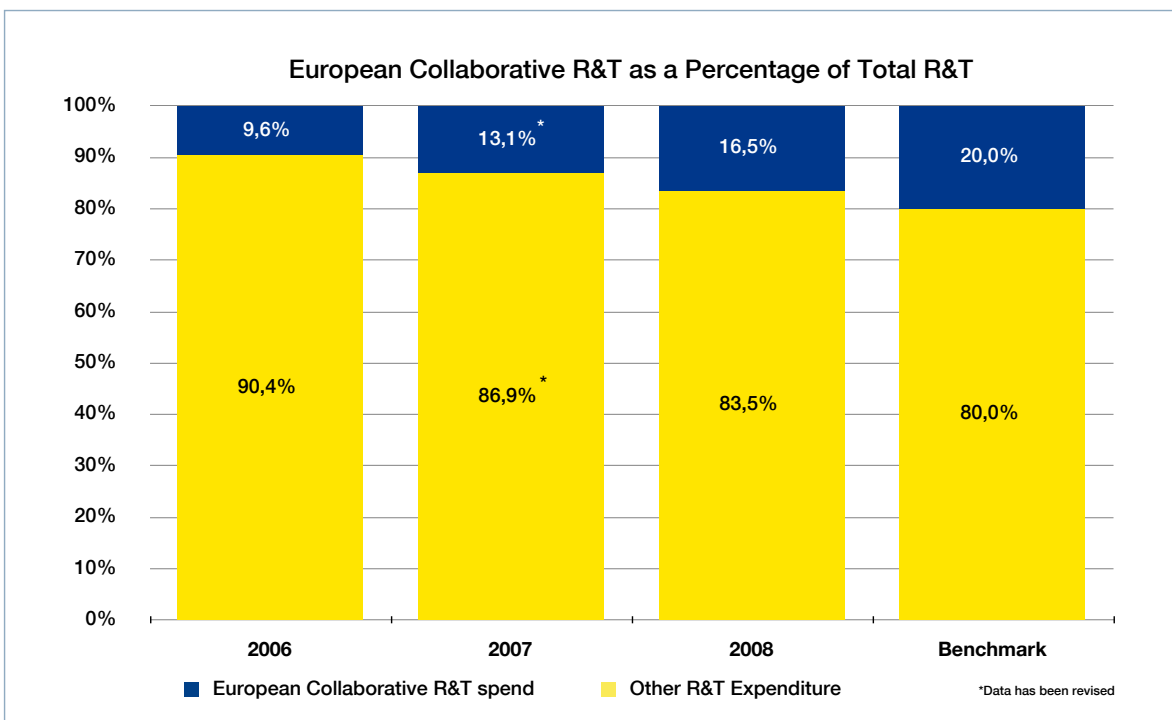
## Benchmarks



## Benchmarks



## Benchmarks



## Annex – List of Acronyms

ACT	..... Allied Command Transformation
ASD	..... Aerospace and Defence Industries Association of Europe
AT	..... Austria
BE	..... Belgium
BIRD	..... Biological Reconnaissance Defence System
BG	..... Bulgaria
CAN	..... Contract Awarded under competition
CANx	..... Contract Awarded without competition
CBRN	..... Chemical, Biological, Radiological and Nuclear
C2	..... Command and Control
C3	..... Command, Control and Communications
CDP	..... Capability Development Plan
CEDS	..... Combat Equipment Dismounted Soldier System
CIED	..... Counter Improvised Explosive Devices
CIS	..... Communications and Information Systems
CIVCOM	..... Committee on the Civilian Aspects of Crisis Management
CMANPADS	..... Counter Man Portable Air Defence Systems
CMO	..... Crisis Management Operation
CN	..... Contract Opportunity
CODABA	..... Collaborative Data Base
CSDP	..... Common Security and Defence Policy
CSR	..... Common Staff Requirement
CST	..... Common Staff Target
CSUI	..... Common Standardised User Interface
CY	..... Cyprus
CZ	..... Czech Republic
DE	..... Germany
DG	..... Directorate General
DIM	..... Detection, Identification and Monitoring
DoI	..... Declaration of Intent
DTEB	..... Defence Test and Evaluation Base
DTIB	..... Defence Technological and Industrial Base
EATF	..... European Air Transport Fleet
EAC	..... European Armaments Cooperation
EBB	..... Electronic Bulletin Board
EBB1	..... Electronic Bulletin Board Government-to-Industry part
EBB2	..... Electronic Bulletin Board Industry-to-Industry part
EC	..... European Commission
EDA	..... European Defence Agency
EDEM	..... European Defence Equipment Market
EDRT	..... European Defence Research and Technology
EDTIB	..... European Defence Technological and Industrial Base
EE	..... Estonia
EFC	..... European Framework Cooperation
EL	..... Greece
EMJAAO	..... European Military Joint Airworthiness Authorities Organisation
ES	..... Spain
ESA	..... European Space Agency
ELAV	..... Electric Armour for Armoured Vehicles
EMAR	..... European Military Airworthiness Requirement
ENTER	..... Enterprise
EOD	..... Explosive Ordnance Disposal
ESSAC	..... European SDR Standardisation and Certification Feasibility
ESM	..... Environment, Simulation and Modelling
ESPC	..... European Satellite Communications Procurement Cell
ESSOR	..... European Secure Software Defined Radio Referential
ETAP	..... European Technology Acquisition Programme
ETICE	..... Essential Technical and Industrial Capabilities Expiry
ETSI	..... European Telecommunications Standardization Office
EU	..... European Union
EULER	..... European SDR for Wireless in Joint Security Operations

EUMC	.....	European Union Military Committee
EUMS	.....	European Union Military Staff
FAS	.....	Future Air Systems
FI	.....	Finland
FICAPS	.....	Future Interoperability of Camp Protection Systems
FR	.....	France
FTH	.....	Future Transport Helicopter
FUAS	.....	Future Unmanned Aerial System
GEM	.....	Guidance, Energy and Control
GMES	.....	Global Monitoring for Environment and Security
HDR-HF	.....	High Data Rate Technology for High-Frequencies
HTP	.....	Helicopter Training Programme
HU	.....	Hungary
IAP	.....	Information, Acquisition and Processing
ICT	.....	Intra-Community Transfers
IDT	.....	Integrated Development Team
IE	.....	Ireland
IED	.....	Improvised Explosive Device
I&M	.....	Industry and Market
IPR	.....	Intellectual Property Right
ISR	.....	Intelligence, Surveillance and Reconnaissance
ISTAR	.....	Intelligence, Surveillance, Target Acquisition and Reconnaissance
IT	.....	Information Technology
IT	.....	Italy
JAA	.....	Joint Airworthiness Authorities
JIP-ICET	.....	Joint Investment Programme-Innovative Concepts and Emerging Technologies
JIP-FP	.....	Joint Investment Programme-Force Protection
LoI	.....	Letter of Intent
LT	.....	Lithuania
LV	.....	Latvia
MANPADS	.....	Man Portable Air Defence Systems
MARE	.....	Maritime Affairs and Fisheries
MARSUR	.....	Maritime Surveillance
MAWA	.....	Military Airworthiness Authorities
MIDCAS	.....	Midair Collision Avoidance System
MMCM	.....	Maritime Mine Counter Measures
MT	.....	Malta
MUSIS	.....	Multinational Space-based Imaging System
NAD	.....	National Armaments Director
NATO	.....	North Atlantic Treaty Organization
NEC	.....	Network Enabled Capability
NEC IS	.....	NEC Implementation Study
NL	.....	Netherlands
NO	.....	Norway
OCCAR	.....	Organisation Conjointe Coopération en matière d' Armement
OSINT	.....	Open Source Intelligence
PL	.....	Poland
pMS	.....	participating Member States
POC	.....	Point of Contact
PSC	.....	Political and Security Committee
PT	.....	Portugal
PT	.....	Project Team
RELEX	.....	Relations Exterieures (External Relations)
RFI	.....	Request for Information
RMP	.....	Recognised Maritime Picture
R&D	.....	Research and Development
R&T	.....	Research and Technology
SAR	.....	Synthetic Aperture Radar
SCIS	.....	Soldier Centric Identification System
SATCOM	.....	Satellite Communications
SCORED	.....	Software defined and Cognitive Radio as well as spectrum management for European Defence
SDR	.....	Software Defined Radio
SE	.....	Sweden
SI	.....	Slovenia

SIGAT	.....	Study on Military Frequency Spectrum Allocations for the Insertion into General Air Traffic
SK	.....	Slovakia
SSA	.....	Space Situational Awareness
SSR	.....	Security Sector Reform
SRA	.....	Strategic Research Agenda
SME	.....	Small and Medium-sized Enterprise
T&E	.....	Test and Evaluation
TPLS	.....	Third Party Logistics Support
UAS	.....	Unmanned Aerial Systems
UAV	.....	Unmanned Aerial Vehicle
UK	.....	United Kingdom
UMS	.....	Unmanned Maritime Systems
UWGT	.....	Universal Waveform Generation Tool
VHDR	.....	Very High Data Rate
WINTSEC	.....	Wireless Interoperability for Security





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