2008 Annual Report on R&T Activities

1. Introduction

The year 2008 has been fruitful for the EDA Research & Technology (R&T) area. It is my pleasure to present the first report of EDA R&T activity, covering the year 2008. As foreseen in the 'means' section of the European Defence Research and Technology (EDRT) Strategy, this report aims at promoting the visibility of R&T activities at all levels. All readers are very welcome to forward comments or suggestions to randt@eda.europa.eu in order to improve future editions of the report.

I was appointed to my present position on 1st August 2008, so I would like to take the opportunity to thank my predecessor Bertrand de CORDOUE for his efforts in establishing this activity in EDA, and the results achieved so far. Naturally, the R&T achievements are EDA results, which would not have been possible without the general management and leadership of the Agency. But first and foremost, they are the results of the participating Member States' efforts to improve European R&T investment.

Fostering Research & Technology

Encouraging collaborative R&T to meet future defence needs is fundamental for developing the right military capabilities for the future and for strengthening Europe's Defence Technological and Industrial Base. The Agency's Defence R&T Strategy identifies both the 'ends' – the critical technologies which Europe must develop and master – the 'ways' – through roadmaps with technological goals and calendars – and the 'means' to achieve these R&T goals. Projects such as the Joint Investment Programmes on Force Protection and Innovative Concepts and Emerging Technologies, are examples of implementation of the strategy.

Capability-driven approach

The Agency and its participating Member States are currently identifying the key-technology areas from the list of the 22 R&T priority areas, which was one of the main outputs of the year 2008. Through the Agency's capability-driven approach, links between these key-technology areas and the twelve selected priorities emerging from the Capability Development Plan have also been identified. Based on these links the Agency is focussing on four areas where future R&T collaborative projects may be launched in the short term: Chemical, Biological, Radiological and Nuclear Defence (CBRN) Protection; Marine Mine Counter Measures (MMCM); Counter Man Portable Air Defence Systems (C-ManPADS); and Counter Improvised Explosive Devices (C-IED).

Towards year 2009

For the year 2009, the Agency has a portfolio of more than 30 Category B candidates related to R&T, and worth a total of about €150 million. For most of them, the Project Arrangement or Technical Arrangement could be signed this year. Like the technical demonstrator ESSOR, on Software Defined Radio, launched in December 2008 and which is managed by the Armaments Directorate, a few of them (MIDCAS, FICAPS, and Active Protection System Study) are also actually managed by Armaments, to better prepare the following phases of preparation of potential armament programmes.

I am really looking forward in the coming years to work on enhancing and developing more effective R&T collaboration in science, technology and demonstrators, to prepare the key technologies for the short, medium and long term capability needs for Europe, taking into account all opportunities to coordinate the Defence R&T investment with other institutions like the European Commission or the European Space Agency, and to make the best use of the European taxpayer money, for the benefit of our armed forces on the battlefield.

Christian Bréant, R&T Director

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2. EDRT Strategy

The European Defence Research and Technology (EDRT) Strategy, endorsed by the EDA Ministerial Steering Board on 10 November 2008, focuses on addressing the Research &Technology (R&T) needs of the European Security and Defence Policy "as it stands now and develops in the future". The EDRT strategy is available on the EDA website.

Investment in R&T is vital for EDA participating Member States (pMS) to develop their future defence and industrial capabilities. However, with current national defence budgets facing constraints, there are fewer margins to increase national investment in R&T. Taking this into account, the EDRT Strategy is aiming at a step change in Defence R&T Collaboration in Europe through the convergence and sharing of EDA pMS defence investment. Such convergence would improve the coherence in the R&T-related activities of military users, capability planners, technology developers and researchers.

As a first step in this direction, the EDA pMS have identified twenty-two common R&T priority areas (Table 1). These priorities have been selected taking into account the pMS need for EU industrial capability, openness to multilateral collaboration, and high level of national and collaborative ambition. They reflect an immediate potential for European multinational collaboration in R&T. Based on these twenty-two priorities, a more efficient EDA CapTech structure was decided and the newly established CapTechs (with system level areas) have been actively involved in the substantiation of these priorities. Cross-links between R&T and CDP priorities have also been identified in 2008, resulting in a number of joint R&T-Armaments-Capability workshops in 2009 (Figure 1). These workshops aim at better defining the areas where R&T investment is needed.

Furthermore, the Agency has been working on a number of transversal activities aimed at improving the efficiency of R&T collaboration. Lessons from the implementation of the Joint Investment Programmes (JIP) on Force Protection and on Innovative Concepts and Emerging Technologies (ICET) are already providing some useful experience in view of further ad hoc joint R&T programmes. Additionally, the Agency is working along with the pMS on several other main R&T issues including the European Defence Research Centres (EDRC) initiative, the improvement of Intellectual Property Rights provisions, the development of coordination with the European Commission, the improvement of the dialogue with industry on both delivering the twenty-two priorities and improving the CapTech performance, and the organisation of specific R&T training workshops.

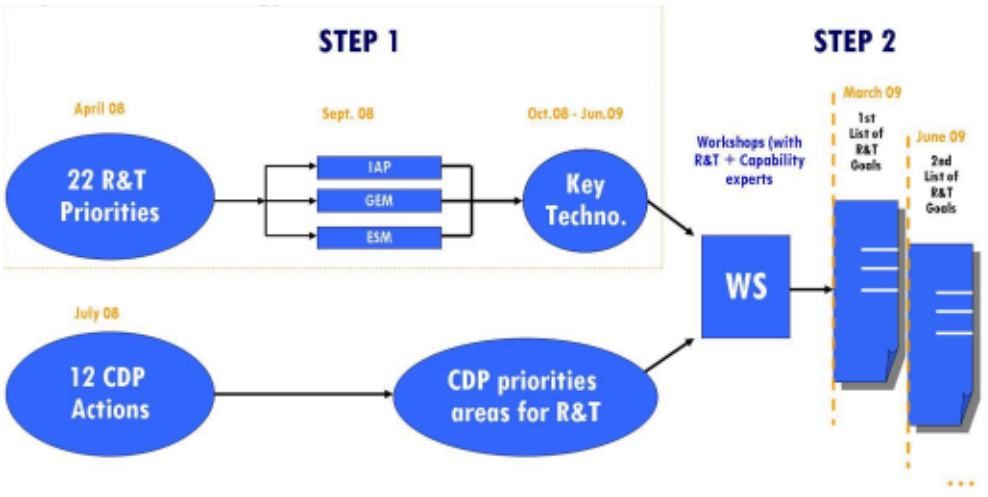
It is important to note that the identification, prioritisation and delivery

Table 1 – The twenty-two common R&T priority areas

R&T Priority Area	R&T Priority Area
Radio Frequency generic (components, processing, systems, integration) and multifunction RF technologies.	Environment definition (Oceanographic & hydro. techniques and analysis)
Electro-Optic Systems & Integration	Energetics & Energetic Materials
Network Management in Network Enabled Capability operations (Fault, Configuration, Administration, Performance & Security management)	Soldiers Systems (incl. integration into Systems of Systems and Network Enabled Capability)
Structural Modelling Design & Through Life Support	Counter-mine, gap-crossing and counter-mobility systems
Networked sensor control, management and cueing	Power source and supply technologies
Command & control technologies (shared situational understanding, data fusion / mining / reduction, image exploitation, innovative Sensors for Urban Warfare, . . . , incl. acoustic and seismic sensors)	Ground Platform technologies (structure, mobility . . .) and mounted platform systems
HF, VHF & UHF Communication Technologies	Uninhabited systems
Technologies for secure and robust information management, information exchange and communications	Aerial platform technologies (airframes, propulsion, aerodynamics, structures, . . . - incl. Helicopters, Unmanned Air Vehicles)
Electronics Hardware	Concepts, design, integration, simulation & modelling
Human integration and interoperability	Uninhabited systems, especially underwater systems
Waveform design, spectrum and bandwidth management	Physical protection

IAP GEM ESM

Figure 1 — Detailing the 'ends' of the EDRT strategy



of the strategic elements is a living process, fully integrated with the three other dimensions of the preparation of the future: the Capability Development Plan as "overall strategic tool", the European Armaments Co-operation Strategy and the European Defence Technological and Industrial Base Strategy.

3. R&T Category B Projects

3.1 - Introduction

The main activity of the EDA R&T directorate is the preparation of the R&T Category B projects. These projects are funded and managed by a limited number of contributing Members (cM). Technical discussions are held within the CapTechs. The preparation process of an EDA Category B project consists of three consecutives steps:

1) The approval by EDA Steering Board of the Outline Description (OD) submitted by the initiator Member States in order to establish the project;
2) The signature of a Technical or Project Arrangement (TA or PA) with the financial commitment by the cM;
3) The management of the contract, either by the EDA or by national authorities.

Table 2 - R&T Category B projects for which the TA/PA was signed in 2008

Acronym/ CapTech	Title	cM Leader	TA/PA signature date	Contract signature date	Project Value k€ (incl. VAT and co-funding)
EFP Protection GEM1	Protection of Armoured Vehicles against Explosively Formed Projectiles	IT, CZ, NL, ES	04/03/08	09/07/08	5,084
NEMESIS IAP2	Naval Env. Modelling & Elect. magn. sign. Surface targets Improv. Simulations (1)	FR, NL	23/04/08	06/05/09	388
CODFISH IAP1	Critical Optical Devices for Future Integrated Sampling Architectures	UK, IT	26/06/08	22/10/08	2,751
SWAP IAP1	Switched Application	SE, NL	15/09/08	02/12/08	4,856
SIMCLAIRS IAP2	Innov. & Techn. Part. Studies Integrated Multifunction Compact Lightweight Airborne Radars	FR, SE, UK	17/09/08	31/03/09	24,596
MINERVE IAP1	Identification and Health Monitoring of equipments in real life	IT, FR, NL	09/10/08	21/11/08	7,309
ETARE IAP4	Enabling Technology for Advanced Radio in Europe	IT, BE, FI, FR	12/11/08	02/12/08	7,585
GlobMarSit ESM3	Establishing and Sharing a Global Maritime Situation Awareness	FR, NO	22/11/08	19/12/08	1,636
VRT GEM1	Vulnerability Reduction Technologies for Large Maritime Composite Structures	FR, IT, NL, SE, UK	09/12/08	Contract to be signed	7,000
SPREWS IAP2	Signal Processing for Radar and EW Systems	SE, CZ, FR, IT, ES, NL	16/12/08	19/12/08	8,430
DATABASE B ESM4	Database of B Agents	SE, AT, BE, CZ, DE, ES, FI, FR, IT, NL, PL	19/12/08	19/12/08 (national contracts)	6,600
					TOTAL: 76,235

3.2 - TA/PA signed in 2008

In 2008, Member States signed 11 PAs and TAs for R&T Category B projects, worth in total over €76 m (including VAT and industrial co-funding). Seven of them were contracted by the EDA in 2008, three will contracted in the first semester 2009 and one was implemented through national contracts. Table 2 lists the projects along with their cM, significant dates and figures. More details on individual projects may be found on the EDA website.

3.3 - Projects ended in 2008

In 2008, the EDA pMS paid a total of €24 m of invoices for R&T Category B Projects. This amount does not take into account the contributions in kind provided by cM and which are included in the project value.
As the first EDA Category B contract was signed in June 2007, all R&T contracts which ended in 2008 were transferred from the Research Cell of the Western European Armament Organization (WEAO): they are listed in Table 3. For each finished project, an executive summary is published on the EDA website.

Table 3 - R&T Category B projects which ended in 2008

Acronym	Title	cM Leader	Last invoice date	Project Value k€ (incl. VAT and co-funding)
SIMBASE	Simulation Based Acquisition Server	UK, IT, NO	08/01/08	2,853
SYNTAS	Synthesis Tooling for Antenna Structures	FR, NL	09/01/08	2,632
LARA	Layered Architecture for Real-Time Applications	FR, IT, NL, NO	10/01/08	7,698
PRIOVRA	Poly-Functional Intelligent Operational Virtual Reality Agents	IT, FR	18/01/08	4,506
SMOC	Submarine motions in Confined waters	UK, FR, IT, NO	22/01/08	3,900
-	IR Diffractive Reduced Cost Optics	UK, BE, IT, ES, SE	23/01/08	5,361
UFMD	Development of Ultra Fast Molecular Diagnostics	NL, IT	15/04/08	2,010
Space basar	Next generation military based SAR systems and technologies	IT, DE, NL	17/04/08	4,306
UCAV	Assessment of Technology needs for Unmanned Combat Air Vehicles	IT, ES, NL, NO, PT	13/06/08	2,339
-	Synthesis of NitroCompounds	PT, CZ, DE, FR, IT, NO, SP, SE, UK	02/09/08	9,100
ATLAS	Advanced Techniques for Laser Beam Stearing	FR, DE, IT	03/09/08	3,950
DESIRE	Demonstration and Evaluation of System in package realization	FR, IT, SE	09/10/08	4,335
IDEALS	Integrated Detection and Estimation Algorithms Solutions	FR, NL	23/10/08	3,143
FABIOLA	Application of Extended Fluorescence Methods	FR, DE, FI, IT, PL, SE	15/12/08	4,795
RENATA	Research on Nano-Tube Technology Application	IT, CZ	19/12/08	2,077
				TOTAL: 63,005


Credits: Hydrographic Institute - Portugal


Visualization of the computed flowfield in the Virtual-Reality Cube at KTH PDC. Credits: FOI - Sweden

3.4 - Statistics for 2007 and 2008

Statistics of R&T Category B projects for the years 2007 and 2008 show that the average time from the OD approval to the TA/PA signature is about 16 months. The average time for national TA/PA staffing is about 9 months. The preparation work is often complicated by the fact that cM leave or join the project or the financial contributions change in the course of time. In Category B projects, the financial contributions of the cM are not necessarily equal. The average budget of a Category B project is €5.6 m (€1.5 m per cM), with an average industrial co-funding of approximately 30%.

3.5 - Portfolio of projects

Figure 2 summarizes the portfolio and the flux of R&T Category B contracts signed in 2008. The figures differ from those of paragraph 3.2 which relates to the TA/PA, as contracts are usually signed a few months after the signature of the TA/PA.

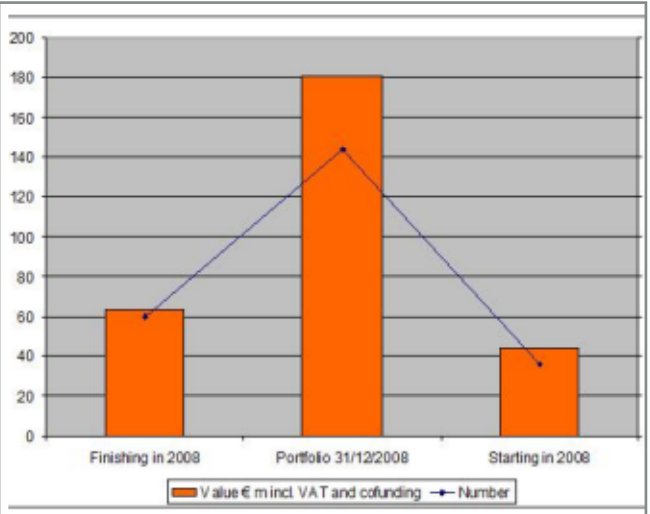


Figure 2 - EDA R&T Category B contracts in 2008

4. CapTechs Highlights

4.1 - New CapTech structure

On 8 April 2008, the EDA Steering Board adopted a new structure for the 12 CapTechs. The former structure was introduced in 2005 to match the capability taxonomy, with some consideration as well to the WEAG Common European Priority Area (CEPA) legacy. This change was motivated by the willingness to promote collaborative R&T in 3 new systems CapTechs (Ground, Naval and Aerial Systems), and in a System of Systems CapTech. This new structure (see Figure 3) reflects the outputs of the EDRT Strategy: the 22 R&T priorities were easily assigned to the new CapTechs. It shall also encourage the preparation of future programmes from the capabilities and armaments branches.

The new structure required a redistribution of existing projects, the appointment of some new CapTech National Coordinators (CNCs) and CapTech Governmental Experts (CGEs), and the involvement of the relevant representatives from industry and research centres. The moderators of new CapTechs devoted significant resources in rebuilding their address book. For instance, the CapTech GEM3 had to be restarted from scratch, as the government representatives of former GEM3 Lethality and Protection were redistributed to GEM1 and ESM4. The CapTech ESM4 successfully integrated CBRN into its technology area. The CapTech GEM2 was enlarged from energetics to missiles. The CapTech ESM1 was rebuilt from the expert group on underwater systems. The relaunch of new CapTechs is now complete: each CapTech has on average 10 appointed CNCs, and at least 10 CGEs. CapTechs meet on average three times per year. It is estimated that 300 CapTech non-Governmental Experts (CnGEs) from industry and research centres are active contributors for all the CapTechs.

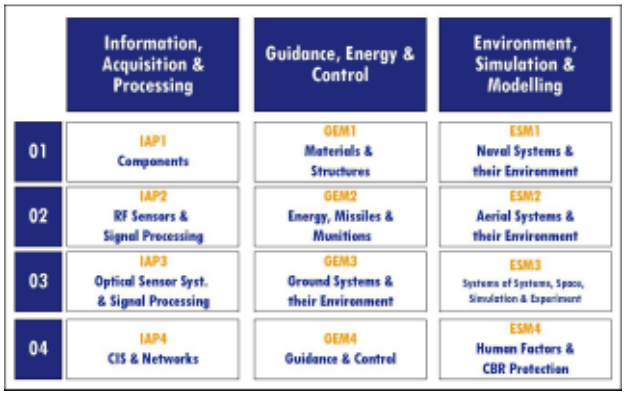


Figure 3 – New CapTech structure

4.2 - Project Generation Workshops

Several CapTechs carried out successful project generation workshops in 2008. An IAP2 workshop gathered 23 persons in September at Thales Airborne Systems in Pessac (France) in order to identify new ad hoc R&T projects with high potential for international collaboration. After maturation through the end of 2008, two projects were regarded mature enough to have their TA/PA signed in 2009: Deformable and Vibrating Antenna Compensation (DAVAC) and Frequency Allocation for Radars in the Coming Years (FARADAYS).

The CapTech IAP4 held in Brussels on 12 June 2008 its workshop on R&T international cooperation opportunities, with 50 participants from government and industry. This workshop allowed the presentation of 8 new high-quality R&T project proposals, and three of them are regarded as good candidates for future category B projects. This workshop is part of a work scheme defined and implemented in the IAP4 with the objective to involve all CapTech actors (CNCs, CGEs, CnGEs) in the process of generating new cooperative projects aligned with the priorities

perceived and shared by the pMS. This very successful way of working may serve as an example for other CapTechs.

4.3 – Description of some R&T projects

Database of B Agents

The project Database of B Agents is a large initiative involving 11 cM over three years, and launched at the end of 2008 within the CapTech ESM4. The project will improve the European capabilities to verify the identity of biological agents (B-agents) in the military and civil context, by promoting coordination, standardisation, and common evaluation of detection methods. Identifying agents and sources in a forensic context relies on a spectrum of features, including epidemiological data and high-resolution analysis. A secure database on B-agents will be established (e.g. sample handling and processing, detection and diagnostic methods, genome sequence and other typing data) to further strengthen the European bio defence capability. In addition, implementation of technical developments in terms of more rapid analysis and higher resolution will be pursued. This project will contribute to discourage B-terrorism and will support the establishment of a strategic network of European bio-defence laboratories.

Explosively Formed Projectiles (EFP) Protection

The project EFP Protection is related to the development of new technologies to protect armoured vehicles against the threat of explosively formed projectiles, as current add-on armours do not offer sufficient protection. This project will investigate especially solutions for protection against EFP and blast mines on bottom plate attack. The final objective is to upgrade existing vehicles with innovative add-on armour structures. This project involves four cM over four years starting from 2008, and is linked to the CapTech GEM1. It will include a characterisation and a modelling of the threat and a first phase of testing on a mock-up. Test results will allow to launch a full development phase including the simulation of add-on armour materials, to be followed by the testing of a technological demonstrator.

Global Maritime Situation Awareness (GlobMarSit)

The project GlobMarSit is a bilateral between France and Norway which started in 2008 within the CapTech ESM3, and which aims at establishing and sharing a European maritime situation awareness, while retaining national specificities. This project will actually explore the R&T aspects of the need expressed in a Common Staff Target developed by the EDA Project Team Maritime Surveillance. It will take into account new data sources such as those from future Radarsat-2 system or from beacons of identification (on buoys already in place for meteorological purposes) and include the definition of an improved standard exchange format complementary to the one implemented by the European Maritime Safety Agency. The stakes are to improve the global efficiency by the sharing and the forwarding of information, and the best way to obtain this information.

4.4 - Other major R&T initiatives

SIMCLAIRS

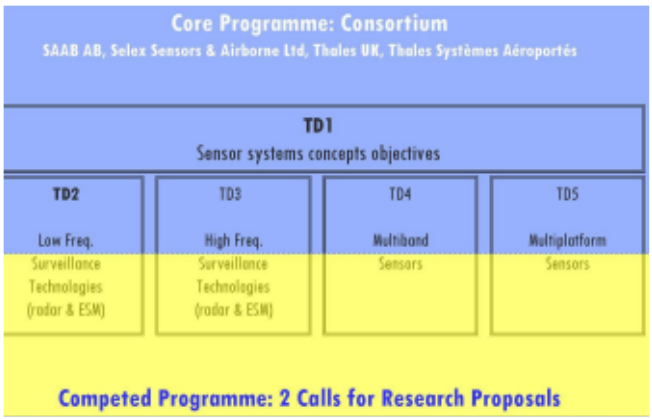
The Innovation and Technology Partnership (ITP) for Studies for Integrated Multifunction Compact Lightweight Airborne Radars and Systems (SIMCLAIRS) is an R&T Category B project funded and managed by France, the United Kingdom, and Sweden under the umbrella of the CapTech IAP2. Its TA was signed in September 2008, and the contract value is €24.6 m.

The aim of SIMCLAIRS is to establish an international cooperation between governments, industry (including SMEs) and academia in order to meet the research needs of contributing members in the field of lightweight and compact multifunctional UAV Radio Frequency payloads. This objective will be achieved through the ITP structure consisting of:

- a core programme for the consortium members of the cM;
- a competed programme with calls for proposals for European R&T entities.

Figure 4 describes the workshare among the 5 technical domains.

Figure 4 – Organisation of the ITP SIMCLAIRS



SIMCLAIRS original project organisation builds on the success of the Anglo-French ITP on Materials & Components for Missiles launched at the end of 2007 by the French DGA and the British MoD.

Software Defined Radio (ESSOR, SCORED, ETARE, CORASMA)

Within the EDA R&T directorate, the CapTech IAP4 is the focal point for all R&T activities related to Software Defined Radio. The CapTech moderator works in close collaboration with the coordinator for the programme ESSOR (European Secure Software Defined Radio) in the EDA Armaments Directorate. The aim of the ESSOR is to provide the basis for development and production of Software Defined Radio products in

Europe to meet the requirement for fielding such equipment in Europe within the timeframe of 2010-2015. On 19 December 2008, OCCAR placed on behalf of France, Finland, Poland, Spain and Sweden a contract worth €106.3 m (VAT excluded) spanning over 4 and a half years to the industrial ESSOR consortium. The ESSOR programme will provide a common secure architecture which defines radio, platform and security elements. The interoperability and portability of this architecture will be tested through the development of a waveform with advanced communication characteristics, the HDR-WF (High Data Rate - Wave Form).

The EDA is involved in the ESSOR programme to monitor the complementarity of efforts between the civil technological work strand of the European Commission, the Agency work strands and ESSOR. The EDA has requested formal permission from WINTSEC (an EC funded study) and SCORED (an EDA funded project) consortiums to disclose deliverables to OCCAR for information and evaluation purposes only. The EDA also continuously investigates possibilities to flow information from R&T Category B projects (e.g. ETARE, CORASMA) and JIP-FP contracts (e.g. WOLF) to ESSOR, and to synchronise the activities. Besides, the OCCAR representative takes part in the EDA Project Team Software Defined Radio in order to obtain a European perspective. From its initial position as an observer in ESSOR, the EDA has turned into an effective and acknowledged facilitator.

5. The two Joint Investment Programmes

5.1 - Joint Investment Programme — Force Protection

The R&T Joint Investment Programme on Force Protection, launched by the EDA in 2007, is a ground-breaking mechanism for collaborative action to help boost Europe's efforts in Defence Research and Technology. It focuses on technologies for protecting EU armed forces against threats such as snipers, booby traps and improvised bombs. The Programme is worth €55 m and involves 20 European governments (Austria, Belgium, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden). It was approved by the Ministerial EDA Steering Board in November 2006 and is managed by the Agency. The Programme Arrangement was signed on 14 May 2007.

Unlike previous collaborations on defence R&T, which involved governments negotiating financial and industrial shares for each individual project, the JIP sets up a common budget to fund the whole programme with a management committee representing the contributors to oversee the selection and financing of individual projects. The votes of the contributors are weighted according to the size of their contributions, though decisions will be taken by consensus whenever possible.

The programme will focus on a limited number of specific R&T priorities driven by agreed capability requirements for future operations: collective survivability, individual protection, data analysis, secure wireless communication and mission planning and training. Details

Table 4 — Summary of the first three calls of the JIP-FP

Call	Proposals	Proposals selected	Oversubscription	Start of contracts
1. Collective survability	30	5	5.7	December 2007
2. Tactical Wireless Communication & Individual Protection Technology Forecasting	14	3	3.3	Fall 2008
3. Data Analysis and Data Fusion	14	5	2.7	Summer 2009

Table 5 — JIP-FP contracts signed in 2008

Call	Acronym	Title	Prime contractor	Contract signature date	Project Value k€ (incl. VAT and co-funding)
1	PATHO-ID	Robust & autonomous airborne threat detection system as lab-on-a-chip device with integrated optoelectronic sensors and combined pathogen enrichment	MCS, Jena (DE)	07/02/08	2,864
1	SNIPOD	Sniper Positioning and Detection	EADS IW (FR)	26/05/08	2,833
2	AHEAD	Advanced Helmet and Devices for Individual Protection	Galileo Avionica (IT)	17/09/08	2,953
2	AD-HELW	Air Defense High Energy Laser Weapon	MBDA — LFK (DE)	26/09/08	4,246
2	WOLF	Wireless Robust Link for Urban Force Operations	Thales (FR)	29/10/08	10,890
					TOTAL: 23,784

about the first three calls for proposals are included in Table 4.

JIP-FP contracts actually signed in 2008 are listed in Table 5.

5.2 - Joint Investment Programme - Innovative Concepts and Emerging Technologies (ICET)

On 10 November 2008, 11 contributing Member States (Cyprus, Germany, Greece, Spain, France, Italy, Hungary, Norway, Slovenia, Slovakia, and Poland) signed a Programme Arrangement concerning the R&T programme on Innovative Concepts and Emerging Technologies (ICET). ICET is EDA's second joint investment programme. With a budget of €15.58 m, it covers 8 specific research and technology goals grouped under three technological clusters: improved autonomy, new solutions for materials and structures, data capture and exploitation. The first call was issued on 17 November 2008, and directed to more than 250 potential contractors. This calls dealt with the following R&T topics: non-linear control design, integrated navigation architecture, nanotechnologies and structural health monitoring.

6. Transversal activities

6.1 - R&T – CAP Connectivity

The Capability Development Plan (CDP) is the 'driver' for the R&T community, as it defines the future military needs and priorities of the European capability improvement. The CDP has identified twelve selected priority actions that need to be addressed by the EDA pMS. Out of these priorities, four areas (Mine Counter Measures in Littoral Sea Areas, Chemical-Biological-Radiological-Nuclear protection, Counter-Man Portable Air-Defence Systems and Counter-Improvised Explosive Devices) were selected by the Ministerial Steering Board for immediate attention regarding the need for R&T work to improve these capabilities.
To accelerate and cement the joining of technical and CDP priorities for the four areas, an exercise has been launched to identify related national R&T activities (current and future). This exercise is identifying CDP-related technical areas linked to national capability needs. The output of this exercise is expected to validate a number of the twenty-two common R&T priorities resulting from the EDRT Strategy. Whenever commonalities in national activities are identified, the EDA will encourage and facilitate the launch of cooperative projects and programmes thus progressing in a coherent approach with the implementation of both the EDRT Strategy and CDP.

6.2 - Intellectual Property Rights

The introduction of the 'JIP instrument' has triggered a need to review the Intellectual Property Rights (IPR) provisions. The change in these provisions will be established by amending the EDA R&T General Conditions (GC). In particular, an amendment of the R&T GC offers the opportunity to make changes to the structure of the document that will allow it to be used by the UK. This is the best way to provide a single instrument for R&T cooperation that can be used by any combination of EDA pMS (and Norway, with which the EDA has signed an administrative arrangement).
The IPR Review Working Group was therefore relaunched in autumn 2008, and met twice this year, partly in presence of industry.
The Group has agreed:
1. to work on an amendment to the GC that will re-structure them to the same format as the EDA Testing & Evaluation General Provisions which are acceptable to all pMS.
2. to include in the amendment two IPR measures (updated definitions related to IPR and new text in the Section 'Disclosure & Use of Information')
The new text will deal with four 'models' of R&T co-operation:

- Fully Govt funded JIP;
- Fully Govt funded non-JIP ('classic Cat B');
- Jointly Funded JIP;
- Jointly Funded non-JIP ('classic Cat B').

6.3 - ESRIF – European Security Research Innovation Forum

ESRIF, a broadly-based public-private dialogue, had its inaugural meeting on 11 September 2007. ESRIF's purpose is to help enhance the security of European citizens, by presenting decision-makers with practical and innovative proposals to improve European security through research and innovation in the coming two decades.
A methodology was agreed, resulting in the establishing of eleven working groups either mission and technology oriented or transversal. More than 500 experts contribute to the ESRIF work, coming from the demand and supply sectors along with European Institutions and Agencies. The EDA is a natural contributor because of the dual nature of the topic treated.
During 2008 the ESRIF Members held 4 Plenary and 6 Integration Team meetings beyond the expert group meetings. An Intermediate Status Report was published and presented at the third European Security Research Conference (SRC'08) hosted by the French EU Presidency on 29-30 September 2008 in Paris.
ESRIF is expected to deliver its final recommendations by the 2009 autumn during the SRC'09 to be held in Stockholm. The mandate of ESRIF is due to expire by the end of 2009.

6.4 - EDRC – European Defence Research Centres

The EDRC Initiative aims at the promotion of the competences and cooperation among European government owned Defence Research Centres. It was proposed by Germany and France in 2008. The original idea was to boost the use of dedicated sources of scientific, technical and operational knowledge, as well as highly qualified services and expert researchers and engineers, in the defence field to the benefit of Member States.
To only consider public research centres to set up an EDRC network was

found too restrictive so Member States decided to use the Agency's framework to get a global picture of defence technology competences in Europe. To materialise this, a database was considered necessary to improve awareness of defence research activities in Europe. The EDA will propose a tool accessible through the EDA Portal. This tool shall include EDA Technology Taxonomy and allow connections with EDA activities.

The aim is to allow Member States, the EDA and the research institutions to use this network to improve the development of cooperation in research, for example by the provision of the best advice on technology trends. The development and implementation is foreseen during 2009.

7. Studies from EDA Operational Budget

The EDA was provided in 2008 with an operational budget of €6 m for procuring external advice for the common benefit of all participating Member States, notably technical case-studies and pre-feasibility studies.

Compared to standard Category B projects, these studies can usually be prepared and contracted relatively fast, typically within 6 months. They are awarded upon competition. No VAT is due, and there is no co-funding required. They support the activity of some CapTechs. They are ideally suited for technology watch, general architecture studies, and survey of the state of the art. They may also support the reflexion of Member States before the launch of more ambitious R&T projects or programmes.

The results of these studies are owned by all EDA pMS. 6 studies worth a total of €1.34 m were contracted for the EDA R&T Directorate on the 2008 EDA budget. They are listed in Table 6.

The 3 EDA-funded R&T studies which finished in 2008 are listed in Table 7. A project overview is available on the EDA website. Final reports have been distributed to EDA pMS, and an electronic copy is archived in the EDA activity database.

Example of study

In 2008, the EDA contracted under its operational budget for the CapTech ESM01 the study "Overall Platform Energy Efficiency". Conceived through the concrete efforts of EDA and pMS experts, the study was awarded to BMT Defence Services (UK). The aim of the study was to propose solutions for increasing the efficiency of naval platforms by looking into a number of issues. Possible solutions were identified through a technology assessment of current and future technologies based on facts, figures, cost effectiveness and relative performance of each solution. From these, it was possible to see opportunities and areas worth targeting with technology to deliver efficiency savings. Furthermore, the study advised the EDA and pMS on how future technologies could be developed. The output is expected to serve for guiding and encouraging pMS to establish collaborative projects and the study was recommended for the 2009 Sustainable Shipping Awards.

Table 6 – List of EDA-funded R&T studies contracted in 2008

Contract title	Supplier	Signature date	Value k€
EU Core Technical Framework Study	SAAB Systems	09/10/08	445
Overall Platform Energy Efficiency	BMT Defence Services	21/10/08	120
Electromagnetic Signature Reduction	BAE Systems	05/11/08	97
Exploring the potential for a common Casualty Tracing and Tracking Tool for EU led military missions	Charles LUCAS associates	17/11/08	132
Architecture for Embarked Middleware (EMWARE)	GMV	04/12/08	396
Technology Watch on "Terahertz for the Identification of Explosive Chemicals" (TERIFIEC)	QinetiQ - UK	15/01/09	150

Table 7 – List of EDA-funded R&T studies which ended in 2008

Contract title	Supplier	Value k€	Final report	Further use
UAV simulation testbed	TNO	700	29/09/08	Transfer to the armaments directorate: cat. B project High Performance UAV
Study on Nano-Technology Sciences into CBRN	FOI	50	19/05/08	Stimulate the generation of category B projects
Huge Sensor Network Feasibility Study	Thales Communications	396	19/06/08	Stimulate the generation of category B projects

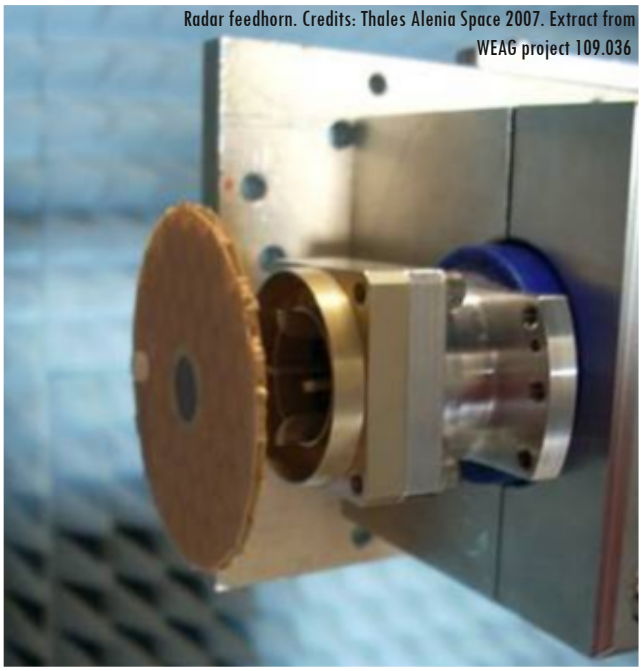
8. Figures for 2008

Operational Budget
€1.34 m committed for 6 new studies

Category A
€23.79 m committed for 5 new JIP-FP contracts

Category B
€76.24 m committed for 11 new Programmes/Technical Arrangements
€44.06 m committed for 8 new contracts (incl. VAT and co-funding)
€24.08 m paid by pMS for running contracts

Total of contracts commitments for OB studies, and category A and B projects
€69.19 m committed for new contracts



Radar feedhorn. Credits: Thales Alenia Space 2007. Extract from WEAG project 109.036

Figure 5 - EDA R&T contracts placed in 2008

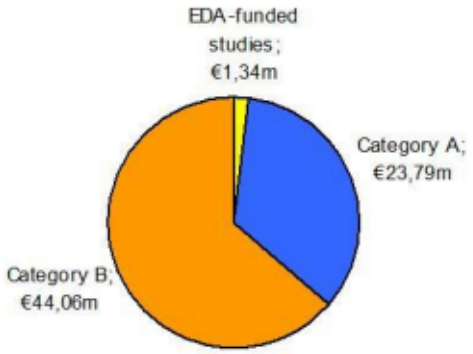
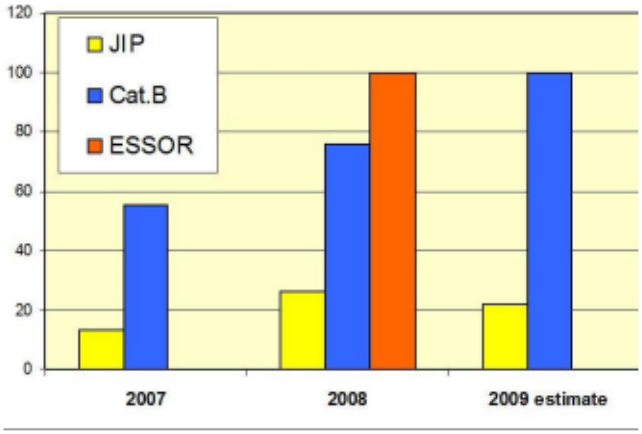


Figure 6 - EDA R&T Projects and Programmes Commitments (€ m)



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