

Security Research in selected EU member states

How Austria, the Czech Republic, Estonia, Finland, France,
Germany, Poland, The Netherlands, and the United King-
dom are preparing for the European Security Research
Programmes

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About VINNOVA

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Preface



Protecting and securing society is a challenge for all democracies. After the Cold War and especially after the terror attacks against the USA in 2001, this has become ever more apparent. Hence, the view on national security has broadened since the Cold War and is no longer focused on the military defence forces only. In fact, to develop a security concept has become an overarching national matter and a necessity.

As a consequence from such a concept, the need for knowledge and expertise in all security-relevant areas is apparent. In order to deal with existing and future threats, it is important to gather and bundle expertise and to invest into creativity and innovation – both on the national and on the international level. Therefore, the European Union member countries have taken action to boost security research within the EU, pointing out that security is also a new industrial area with a high potential for economic growth.

On this background, the Swedish Government has ordered a task group with representatives of several government authorities to develop a national strategy on security research. As an addition to this strategy, our task group ordered this survey to complement the national strategy by a view on how other EU member states are preparing in security research.

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1 Executive Summary

This report investigates the situation of nine EU member states in regard to the European programmes on security research and has been ordered by the Swedish Government working group on security research. The survey was carried out between July and November 2004 and provides a snapshot view of the situation in Austria, the Czech Republic, Estonia, Finland, France, Germany, Poland, The Netherlands, and the United Kingdom as of that period.

1.1 Background

The survey is part of ongoing work in Sweden to develop a national strategy for security research. This strategy should complement the European Union's efforts to establish a new "security culture" within Europe while taking care of the Swedish specificities and requirements.

The EU reacted on the need for establishing a new "security culture" (as recommended by [2]) by implementing PASR, the Preparatory Action on the enhancement of the European industrial potential in the field of Security research. The preparatory action and the European security research programme that should result from it both aim at harnessing and strengthening industries and research communities that are (or will be) involved in "advanced security". These measures should help to enable the EU member states to effectively and innovatively address existing and future security challenges and also to gather, develop and put forth their economic strength in that area.

The Swedish Government took up the EU initiative and ordered the development of a national strategy for security research in April 2004. The working group that has been established to carry out the task is chaired by VINNOVA, the Swedish Agency for Innovation Systems, and furthermore consists of members from the Swedish Armed Forces, the Swedish Emergency Management Agency, the Swedish Defence Materiel Administration (FMV), and the Swedish Defence Research Agency (FOI). The group also collaborates with industry, universities and other public authorities relevant to the issue.

1.2 Survey goals

The Swedish Government working group on security research has ordered this report as an addition to the development of the Swedish security research strategy. The survey should investigate how other European coun-

tries, especially those that are somehow similar to Sweden or have close economical ties with Sweden, are preparing to develop the envisaged European “security culture”. The main goal is hence, to provide a general picture of each government’s status, activities, and plans regarding security research. More specifically, the descriptions should answer the following questions:

- Who, within Government, is responsible for security research on a national level respectively in regard to PASR and ESRP?
- What is the Government’s position in regard to a national security research strategy and security research programmes?
- Who are the main national actors within the national and the EU programmes on security research?
- Which role does industry play in the security field?
- What happens with the continuum between civil and defence research in the security area?

What we could not take up here are the preparations and developments that are going on in industry. Although industrial aspects are touched, the focus is clearly on governmental measures.

1.3 Methodology

The information and facts given in this survey were collected via questionnaires sent to representatives from government and research, follow-up telephone conversations and official government web sites.

In order to acquire the necessary information, we designed a questionnaire, which was sent to appropriate government representatives in the nine countries. For each country we verified a single government contact person via personal telephone conversations. This was successful for eight of the nine countries, with Estonia being the only exception. Seven of the eight governments answered the questions in the questionnaire. Only from the United Kingdom we were unable to receive an answer for the time being.

In addition, we identified additional representatives from research in five of the nine countries, in order to get additional feedback on the questionnaire.

Moreover, information was collected via the Swedish Military Attachés in the different countries and via informal telephone conversations with government representatives.

The compilation of the gathered information resulted in separate Chapters for each country. In order to avoid misunderstandings and to improve the

overall reliability of the report, each government contact was asked to comment on the respective Chapter. Such additional feedback was provided by Austria, the Czech Republic, Finland, France, Germany, and The Netherlands.

1.4 Survey summary

Potential participants in PASR and ESRP

The potential participants in PASR and ESRP are research organisations, companies, and also universities. In some countries, like Germany for example, also governmental agencies will contribute to the programmes. The importance of the different kinds of participants (research organisations, universities, companies, other governmental agencies, other institutions) is not clear and varies between the countries. It is clear, however, that in all countries investigated, defence-related research and also defence industry is strongly involved in the security research programmes (may be except Austria and Estonia, where defence industry is not so distinct). Furthermore, almost all countries exhibit major participants from Information & Communication Technology and the aerospace sector. Exceptions might be the Czech Republic and Estonia for which we received no explicit information. Other sectors, namely logistics and transport, bio- and chemical industry, consultancy, and the medical sector, were also mentioned.

Technological areas

All of the governments, except Estonia and the UK, are planning to especially support and encourage companies to take part in the PASR and ESRP. This support does most often mean the organization and dissemination of information via official channels, personal contacts and networks. Furthermore, Germany, Poland, and The Netherlands stated that they want to organize special information workshops and seminars, some of which will be hosted by intermediary organizations (like TNO, DLR, etc.). Austria, moreover, intends to set up a national security research programme that should complement PASR and ESRP and will provide companies with access to relevant research infrastructure and facilities. These Austrian activities, however, are not entirely targeted towards industry but should benefit other research groups, too. In general it can be suspected, though, that many of the above-listed activities do not differ significantly from support for other research areas in the European Programmes. It should also be noted, that the UK Government apparently does not plan any supportive activities. Instead, some actions will probably be taken by the UK Trade Associations.

Does Government encourage industry to participate?

National responsibility in PASR and ESRP

Since security research touches many different policy areas, it is not ultimately decided in several countries, which ministry and which division should be put in charge of the actions regarding PASR and ESRP. Except

Poland and the Czech Republic, all other countries declared that a final decision on responsibility has not been agreed. These decisions depend heavily on the final context the ESRP will be placed in, for example whether ESRP will be part of FRP 7, and which role defence-related research will be playing.

In the meantime, Austria, Finland, France, the Netherlands and the United Kingdom, are setting up (informal) cross-governmental working groups bringing together all ministries involved in security aspects. These working groups act as forums to co-ordinate the national positions regarding PASR and ESRP. The lead role, i.e. convening or driving the working group, is often taken by those ministries that have already been in charge of European research issues. Although it has not been said that there exists a respective working group in Germany, it is apparent that a dialogue between interested ministries is being initiated.

Cross-governmental working groups

By contrast, the responsibility for the PASR and ESRP policy in the Czech Republic respectively in Poland has already been assigned and rests with the Ministry of the Interior (in close co-operation with the Defence Ministry) respectively with the Ministry of Research and Information Technology.

The Estonian position in PASR is so far taken care of by the Estonian Public Services Academy.

National activities in security research

While all of the nine countries have already devised national cross-governmental strategies on security, only Poland and the Czech Republic declared to have a national strategy on security research and also dedicated research programmes. In Austria, a dedicated strategy is under preparation as well as a research programme that should complement PASR and ESRP. In Germany the development of a security research strategy is under consideration but not the establishment of a related research programme.

National strategy and programmes

In fact, in all countries, including Austria and Germany, security research is so far taken care of in individual policy areas on the departmental level. A natural explanation is that in most of the countries, each ministry has its own research budget and issues its own research programmes according to its needs and strategies. These naturally reflect certain policy areas and often include security relevant aspects without making this explicit. Hence, security research is heavily fragmented and it is impossible to estimate the amount of money spent. It seems, however, that most of the countries realize a need for an overarching approach to security research.

Research by policy areas

Following from the above paragraph, the responsibility for security research on the national level typically rests with a number of different ministries,

Responsibility for Security Research

especially those ministries that are concerned with security-related areas, for example internal affairs, research, defence, economic affairs, transport, health, justice, etc. The Defence Ministries take up a special role here to which we will return later on in this Chapter.

Putting the focus on security research requires considerable cross-governmental co-ordination efforts (may be except for the Czech Republic and Poland where responsibility for security research is already assigned to a respective ministry). While several countries, for example Austria, The Netherlands, and France, are in the process of establishing cross-departmental working groups, it is also known that the UK Government has established a huge cross-governmental programme on resilience, which should improve co-ordination of civil counter-terrorism research across Government.

Focussing on Security Research

Analogous to the European programmes, participants expected to play relevant roles in PASR and ESRP are in most cases major players in the national programmes, too. There are only few exceptions where, for example in Austria, defence-related research institutes carry out defence research but do not compete on the open research market.

Participants in the national programmes

In none of the countries do funding schemes for security-related research differ significantly from funding schemes of other programmes.

Funding schemes

The role of industry in European security research is not clearly defined. While industry and especially the defence industry tries to get into the security market, it is often unclear whether the term “security industry” can already be applied (especially considering a definition of “industry” from which follows that “security industry” should be interpreted as a set of companies that sees its main business activity in the security area¹). However, in the United Kingdom, for example, a security industry already exists and has its own association (BSIA) but spans a much broader range of products and services.

Security industry

Separation between civil and defence research

The divide between civil and defence research is clearly evident also in security research. Special government programmes to bridge this gap from the civil side do rarely exist. An exception is France, where approximately 200 Million Euro of the civil research budget (BCRD) are especially allocated for dual-use research in general. Although we have got the impression that civil aspects like health, citizen and infrastructure safety, respectively “homeland defence” prevail in security research, many defence-related ac-

Mechanisms for exchange and collaboration

¹ cf. http://www.advfn.com/money-words_term_2447_industry.html

tors from research and industry are trying to transfer their know-how into civil and security markets.

From a funding point of view, it is apparently also more common to bridge the continuum between civil and defence security research from the defence side. This means that institutions or companies carry out military research that also have relevant civilian activities and collaborations. Obvious examples for such a coupling are the defence-related institutes of the German Fraunhofer-Society (FhG) and the Netherlands Organization for Applied Scientific Research (TNO), which are both competing on the civil research market, too. But also the UK's Defence Science and Technology Laboratory (DSTL) can be named, which is subcontracting 20% of its research in the CBRN² area to companies and universities.

While these kinds of collaboration and exchange exist, it is nonetheless our impression that the overall divide is still strong, due to the fundamentally different requirements (and cultures) of the two sides. However, as several government and research representatives pointed out in our investigation, the fast-growing demand and the (increasing) development costs for dual-use technologies are seen as major indicators that collaboration between civil and defence R&D has to increase significantly in order to exploit synergies and to improve efficiency in the future. Whether "Security Research" will be a key factor in this process is not undisputed, however.

Future trend
of separation

1.5 Literature

- [1] "On the implementation of the Preparatory Action on the enhancement of the European industrial potential in the field of Security research; Towards a programme to advance European security through Research and Technology", Commission of the European Communities, Commission Communication COM(2004) 72 final, Brussels, 2004.
- [2] Research for a Secure Europe – Report of the Group of Personalities in the field of Security Research; Luxembourg: Office for Official Publications of the European Communities, 2003, ISBN 92-894-6611-1

² CBRN: Chemical, biological, radiological, nuclear

2 Introduction

This survey was conducted between July and November 2004 and should give an overview on how selected EU member states are preparing for the security research programmes of the EU. Ordered by the Swedish Government's working group on security research, the survey should add to the national strategy on security research the group is developing. Our main objective is to deliver a general description of governmental status and measures regarding security research in the following nine countries: Austria, Czech Republic, Estonia, Finland, France, Germany, Poland, The Netherlands and the United Kingdom.

Each country is addressed in a separate Chapter and the appendix supplies the reader with a list of government contacts (as of December 2004).

A Preparatory Action on Security Research

With PASR, the Preparatory Action on the enhancement of the European industrial potential in the field of security research, the EU reacted on the need for establishing a new "security culture" within Europe. The preparatory action and the programme that should result from it both aim at harnessing and strengthening industries and research communities that are (or will be) involved in "advanced security". This should help to enable the EU member states to effectively and innovatively address existing and future security challenges and also to gather, develop and put forth their economic strength in that area.

The Swedish national strategy on Security Research

In order to tackle the security-related and economical challenges on a national level and to complement the EU actions, the Swedish Government ordered to develop a national strategy for security research (Government decision V2, 15th April 2004). The working group should be chaired by VINNOVA, the Swedish Agency for Innovation Systems, and furthermore consist of members from the Swedish Armed Forces, the Swedish Emergency Management Agency, the Swedish Defence Materiel Administration (FMV), and the Swedish Defence Research Agency (FOI). The group should also collaborate with other actors involved, like industry, other public authorities, and universities.

The resulting strategy should take its origin in the EU Commission's communication KOM(2004) 72 final "On the implementation of the Preparatory Action on the enhancement of the European industrial potential in the area

of security research” and be adapted to the Swedish circumstances in respective parts.

The context and ratio of this survey

The survey should be an addition to the Swedish strategy on security research and should provide general information on the situation in the selected European countries named above. It supplies information on the general governmental setup regarding the responsibility, funding and organization of security research – on the national and on the European level. The descriptions in this survey are, of course, only snapshots of an environment that is rapidly developing, not at least in preparation of the expected European Security Research Programme, which should start in 2007.

While the primary goal of this report is to provide a snapshot view of the general situation, a secondary goal is to further networking in that area. The Appendix therefore contains contact information to government representatives from the countries covered in this survey and also Sweden (as of December 2004).

In the following Chapters, we will first detail the objectives and the scope of this study in Chapter 3, while Chapter 4 describes the methodology applied. The subsequent Chapters are dedicated to the descriptions of the individual countries. Last but not least, the report finishes with a summary, in which we put together the main trends and findings from the different Chapters.

3 Objectives and scope

The main objective of this survey is to show how the different European countries prepare for the European programmes on security research (PASR and ESRP). Especially questions regarding governmental responsibilities on the policy level, governmental activities on the national level, and the relation between civil and defence research are taken up.

Since the term “Security Research” plays a major role in this report, we will first clarify its connotation and afterwards describe the scope of this survey.

The meaning of “Security Research” in this survey

This survey builds on the terminology used by the European Commission in its communications on the PASR and ESRP programmes. While the Commission avoids an explicit definition of “Security Research”, it points out the importance to tackle the (new) threats by more innovative means that enable us to deal with complex situations and to address security in a comprehensive manner [1]. In this regard, five priority areas were defined in which research activities should be strengthened:

- Improving situation awareness;
- Optimising security and protection of networked systems;
- Protecting against terrorism (including bio-terrorism and incidents with biological, chemical and other substances);
- Enhancing crisis management (including evacuation, search and rescue operations, active agents control and remediation);
- Achieving interoperability and integrated systems for information and communication.

Therefore, we see “Security Research” as research that touches on at least one of the above areas.

Countries investigated

The countries we investigate in this survey are: Austria, the Czech Republic, Estonia, Finland, France, Germany, Poland, The Netherlands and the United Kingdom. This set of countries covers, on the one hand, the major economical powers in Europe, i.e. Germany, France and the United Kingdom. On the other hand, it includes countries that are in some way comparable to Sweden, for example in size or economical strength, or that have close economical ties in the defence sector.

Scope of the survey

The survey focuses on the following questions:

- Who, within Government, is responsible for security research on a national level respectively in regard to PASR and ESRP?
- What is the Government's position in regard to a national security research strategy and security research programmes?
- Who are the main national actors within the national and the EU programmes on security research?
- Which role does industry play in the security field?
- What happens with the continuum between civil and defence research in the security area?

These questions should be answered in a general and descriptive way. For a more detailed investigation of individual countries, the Appendix provides the contact information for the different countries. It is furthermore not intended to assess countries or compare them against each other. Due to the nature of our investigation this is neither possible nor wanted.

4 Methodology

In close collaboration with the Swedish working group on security research we identified a set of key questions the report should answer. To acquire the necessary information, we tried to identify relevant contact persons in government and research, one for each country. These persons were asked to fill in a questionnaire thus providing the basis. Additional information was gathered by follow-up telephone conversations, support from the Swedish military attachés in the respective countries, and official government web sites.

Questionnaire setup

The contents of the questionnaire were discussed and developed in collaboration with the Swedish working group on security research. It consists of three parts. The first part focuses on the European aspects of security research, especially the issue of responsibility and co-ordination of the countries' positions regarding PASR and ESRP. The questions in the second part are concerned entirely with the national situation, for example the assignment of responsibility, existence of a national strategy, existence of national research programmes, and the main security research-actors in research and industry. The third part investigates the national divide between civil and defence research, especially with respect to security research. This partitioning is also used in the country-specific Chapters later on in this report. The questionnaire itself is supplied in Appendix 16.3.

Target group for the questionnaire

The questions taken up in this survey focus on facts, not so much on opinions. Hence, a large and representative sample-population was not needed. Instead, we were looking for government representatives involved or responsible for security research and with considerable overview to answer the questionnaire on a general basis. We also tried to find research representatives with relevant experience who could answer the questionnaire from their point of view. This was mainly meant as a means to uncover misunderstandings and to complement the views presented by the government contacts. Therefore, we tried to identify a government contact and a research contact for each country.

Acquiring information via the questionnaire

The contact persons in government and research were identified and verified by research via telephone. Starting points were the members of the EU's Aerospace and ICT committees. This approach was successful in eight out

of nine countries. Estonia remained the only country where we eventually did not succeed in identifying an official government representative.

Contacting these government representatives via telephone and asking them to fill in the questionnaire resulted in answers from seven of the eight countries: Austria, the Czech Republic, Finland, France, Germany, Poland and The Netherlands. Unfortunately, it was not possible to get an official answer from the responsible authorities in the UK Government at this point in time.

In addition, we also identified relevant research contacts in six countries, five of which answered the questionnaire.

Additional sources of information

Further information was acquired by informal telephone conversations with government and research representatives and from the official governmental web sites. In addition, an official request was sent to the Swedish Military Attachés in the respective countries, asking them to answer a reduced set of questions. By this way we received additional answers from Austria and Finland.

Additional feedback from the Governments

The compilation of the gathered material resulted in a separate Chapter for each country. In order to verify correctness, we asked our government contacts to review their respective Chapters and to give feedback. Austria, the Czech Republic, Finland, France, Germany and the Netherlands were so kind and provided additional input, which was then incorporated.

It must be noted, however, that despite the feedback from several governments, this does not necessarily mean that the Chapters express the official government point of view.

Risks in comparing and assessing information

We cannot assume that the people who contributed to our survey exhibit a common understanding of the term “Security Research”. Although we referred to PASR and the ESRP in conversations and in the questionnaire, it is clear that each person provided answers from his or her own perspective. Compiling the information from these answers into the context of this survey (i.e. a single context) we run the risk that pieces of information are compared or assessed in a way that is not supported by the information base we have. Therefore, we completely omit graphical visualizations, which typically lend themselves easily to all kinds of interpretations. In fact, to be as correct as possible, the information in each Chapter should be considered isolated at first. The missing links between the countries should then be filled in by the reader’s own knowledge and experience.

Timeframe of the survey

The survey was carried out between July and November 2004. While the questionnaire was sent out in August and early September, information from additional feedback and other sources was acquired until the end of October. The information supplied in this report hence gives a snapshot view of the security research situation in the summer respectively autumn of 2004.

The information on government contacts that we provide in the Appendix is of December 2004.

5 Austria

Security Research is an issue that has raised much interest in Austria. The ongoing preparation of a national strategy on security research, as well as the goal of establishing a national research programme on the subject, documents this. The inter-departmental working group that is currently reviewing Austria's situation and working on a national strategy is also meant to become part of a "security research platform". This platform should further information dissemination and communication between all actors and support (potential) participants in the national and European programmes. While it is not intended for the time being to include defence research in PASR and ESRP, the current discussion in Austria involves both civil research and also prevention-related defence research that is relevant from an security perspective. Hence, the national research programme could also cover some dual-use research and might become a means to couple civil and defence research, aiming to achieve capability needs relevant to security and defence tasks.

5.1 Status regarding PASR and ESRP

Austria is actively preparing to take part in PASR and the ESRP. Besides the already existing interest from research organisations and companies, documented within the first call of PASR, the Government will further encourage potential participants by providing clear information and communication structures as well as financial and infrastructural support.

Expected main participants in PASR and ESRP

The expected participants come from both research and industry: Non-university research (e.g. Austrian Research Centres, Joanneum Research, Austrian Academy of Sciences), universities (e.g. Technical University of Vienna), companies (e.g. ESL Advanced Information Technologies, Frequentis, VCE Holding), but also agencies like via donau and Tricon Consulting – all of which have already been participants in the first PASR call.

For the above-mentioned participants it is the universities and some of the research establishments and organisations that are supplied with public base funding, to different degrees though. Companies and private research establishments receive no basic funding from government. The fully funded defence research units, affiliated to the National Defence Academy and the Austrian Armed Forces, do not play a significant role in PASR or ESRP, since they are relatively small and have not participated in national or European programmes so far.

Funding schemes

The main technological areas represented by the expected participants are not yet clear. It is assumed however, that it could be the Information & Communication Technology sector (ICT) that will be involved most. This is also supported by the results from the first PASR call, where many of the successful applicants belong to the ICT sector. But also logistics, chemical industry, and defence are represented. Considering that Austria's defence industry is relatively small, consisting of a few actors, which usually do not count defence activities under their main business activities [1], the less prominent role of defence industry among PASR participants becomes apparent.

Technological areas

Role of defence industry / research

In addition to the active role that research and industry have already taken up in the first call of PASR, the Austrian Government intends to further support and encourage (potential) applicants by the following measures:

Does Government encourage industry to take part? How?

- Establish a national programme on security research that complements the European Programmes PASR and ESRP (see 5.2 National activities)
- Provide access to relevant research infrastructure and facilities (e.g. at the Austrian Research Centres)
- Provide dedicated information and communication structures on both policy and operative level

These measures are, of course, not exclusively targeted towards industry but should similarly benefit research institutions. The mechanisms should apply to the national programme mentioned above as well.

Co-ordination of national position in PASR / ESRP

The final responsibility has not yet been decided but is subject to decision by the Austrian Government in autumn 2004. It is proposed that the Ministry for Transport, Innovation and Technology (BMVIT, "Sektion III, Bereich Innovation") and the Ministry for Education, Science and Culture (BMBWK, "EU co-ordination unit") take over responsibility and co-ordination of the issue within Austria. Communication with the European Commission regarding PASR and ESRP is probably being covered by the BMBWK.

5.2 National activities

Under the co-ordination of the BMVIT and the BMBWK an interdepartmental working group is being built, which consists of members from different ministries, also involving industry and research stakeholders. The group is reviewing the Austrian situation in regard to security research and is also expected to propose a national strategy on that matter.

National strategy, programmes, and responsibilities

A national strategy on security research does not exist but is under preparation. Although it is not yet officially decided, the above-mentioned interdepartmental working group will probably be responsible for this task. In addition to developing the national strategy, the working group is also supposed to become a permanent institution acting as an advisory committee in regard to content and focus of the Austrian security research policy and the national programme. It is also proposed that the working group should operate with a mandate from the Austrian National Security Council (which is the central organ of the Austrian Federal Chancellery advising the federal Government in aspects of foreign, security, and defence politics). The Government's decision on this matter is expected in autumn 2004³.

Existence of a national strategy

Responsibility for strategy

As mentioned in 5.1 above, the BMVIT together with the National Research Council is also preparing a national research programme dedicated entirely to security research, which should support and complement the European programmes. The content of the programme is going to be elaborated together with the members of the above-mentioned working group and its budget is said to be "relatively large" in a mid term perspective. Furthermore, it should be noted that the programme might cover the security R&D needs from both the civil and the defence actors (prevention only), which would be a renunciation from the strict separation between civil and defence that is in effect now. However, this also depends on the budgetary sources that will eventually be made available to the programme. But so far, nothing has been decided. Nonetheless, it is anticipated that the programme will come into effect after summer 2005.

National research programme

Scope of national programme

Divide between defence and civil side

While the national programme is still in preparation, research relevant for safety and security has so far been funded through various other national programmes, for example in IT, Space, Aeronautics as well as through horizontal programmes (i.e. programmes that aim at structures and which are unrestricted regarding subject matter). However, these programmes excluded defence related projects.

National Security Industry

As a transit country and in the vicinity of the Balkan, Austria has become very active in the area of security, especially the fight against organised crime and also anti-terrorism. Many companies, for example from the IT, defence and automotive sector, are producing and delivering advanced security solutions. In niches of the security market, like reliable voice communication systems, Austrian companies have assumed a leading role internationally.

³ Update: Not yet decided, as of 3rd December 2004

5.3 Divide between civil and defence research

Defence and civil research have so far been strongly separated in Austria. Research demands from the defence side are dealt with in (small) research institutes affiliated to the National Defence Academy and also in small groups within the Austrian Armed Forces. These institutes and groups have co-operations with other national and international institutes but they have not been competing on the open research market. The latter is due to the fact that national research programmes have not hosted defence related research, so far.⁴

Funding of
defence research

This policy might slightly be changing with the issue of the Austrian Security Research Programme, since the programme could also cover certain preventive defence related demands in research and development. Hence, security research might play a role in bringing together civil and defence research.

Future trend
of separation

5.4 Summary

With the implementation of the interdepartmental working group on security research, the Austrian Government is introducing an instrument that tries to gather and bundle the existing security research-related actors. Like in most other countries, security-related research activities have already existed – although not under the brand name “Security Research”. The Government activities can therefore be seen as a concerted measure to increase awareness of the overarching idea, and thus to improve the ability of Austrian companies and research organisations to integrate easily into European networks and to successfully participate in PASR and ESRP.

5.5 Links

- [1] <http://www.bmlv.gv.at/omz/ausgaben/artikel.php?id=126> , „Sicherheitspolitik und Wirtschaft“, Sicherheitspolitik und Wirtschaft, Strunz, Herbert and Dorsch, Monique, Österreichische Militärische Zeitschrift - Coverpage - Issue 4/2003

5.6 Source of Information

The information in this Chapter relies on the answers to our questionnaire provided by Dr Birgit Blasch, Federal Ministry for Traffic, Innovation and

⁴ Basic research that is funded by the Austrian Science Fund (FWF) can, of course, be seen as “dual-use” since it is not geared towards any application area. Applied research as funded mainly by the Austrian Research Promotion Agency (FFG) (formerly the Austrian Industrial Research Promotion Fund, FFF), has been dedicated to civil use only.

Technology (BMVIT) as well as further feedback received from Mag. In-
golf Schädler, BMVIT, and ObstdIntD Hans Starlinger, Federal Ministry of
Defence. Minor additions are based on information from Austrian Govern-
ment's websites and e-mail exchange with the Austrian Research Promotion
Agency (FFG).

6 Czech Republic

The Czech Government has already established a national strategy on security research and dedicated research programmes exist, too. The Ministry of the Interior – in close co-operation with the Defence Ministry – is in charge of security research in regard to both the national and the European policy. Since Czech defence research and security research overlap to 100%, security research is entirely financed by the Defence Ministry. The main industry participants in the Czech national programmes come from the Association of the Defence Industry. It is thus the Czech defence industry that is also regarded as the Czech Republic's security industry.

6.1 Status regarding PASR and ESRP

The participants from the Czech Republic are expected to cover the different organisations like universities, industry and research institutes, some of which also have relations to the defence area. Responsible for the Czech position in PASR and ESRP is the Ministry of the Interior in co-operation with the Ministry of Defence.

Expected main participants in PASR and ESRP

The main Czech participants within PASR and ESRP are expected to come from universities, research organisations and industry. Examples are the Military Technical Institute of Protection in Brno, the National Authority for NBC Protection (SÚJCHBO) in Příbram and also companies from the Association of the Defence Industry. While companies can be partly funded for their research, research institutions and universities are fully government financed. It is also apparent from the above examples that some of the participants in PASR are strongly related to defence research. Moreover, the Czech Government supports and encourages industry to participate in PASR and ESRP through its national programmes on security research.

Funding schemes
Participation of defence research
Does Government encourage industry to take part? How?

Co-ordination of national position in PASR / ESRP

The co-ordination of actions and policy with respect to PASR and ESRP lies with the Czech Ministry of the Interior (in close co-operation with the Ministry of Defence). There exist no plans for an alteration.⁵

⁵ Update: According to latest information from early December 2004, it is planned that the Czech Ministry of Defence should take over responsibility for security research completely in the near future.

6.2 National activities

Besides a dedicated national strategy on security research, the Czech Republic has also established dedicated security research programmes. These programmes are co-ordinated by the Ministry of the Interior in co-operation with the Defence Ministry. The latter also provides the whole budget for security research in the Czech Republic, which amounts to approximately 500 Million CZK (about 16 Million Euro). Since security research is basically seen as defence research, the main industrial participants of the programmes are related to defence. These companies are also said to form the Czech security industry.

National strategy, programmes, and responsibilities

The Czech Government has already devised a national strategy on security research as well as research programmes dedicated to that subject. For the research programmes it is the Ministry of the Interior in close co-operation with the Defence Ministry that holds responsibility.

Existence of national strategy

Responsibility on national level

The civil research budget is co-ordinated by the Ministry of Education, Youth and Sports (MEYS) and the individual programmes and parts of the budget lie in the responsibility of the individual ministries, including the MEYS but also the Czech Academy of Sciences [1]. Apart from that, defence-related research and the resulting defence research programmes are handled and accounted for exclusively by the Defence Ministry. Czech Republic's defence research and security research are basically the same. Therefore, the budget for the Czech security research programmes is entirely supplied by the Defence Ministry and amounts to approximately 500 Million CZK per year, which is about 16 Million Euro respectively 130 Million SEK and makes up approximately 4% of the Czech Republic's entire defence budget [3]. Areas of interest in this research are, for example "measures to counter the effects of directional energy weapons on information systems and military technology", "increasing protection of the life force against the effects of weapons of mass destruction", and "increasing protection of ACR⁶ sites" (see [4] for more detailed information). In addition to the existing programmes, new security research programmes are in preparation. It is anticipated that the future will see an annual increase of 5% in the security research budget.

National programmes on security research

As in most of the other countries in this survey, actors that play major roles in the national programmes are also expected to be relevant participants within the European programmes. The main private sector-participants on the national level are companies associated in the Association of the De-

Participants in national programmes

New programmes
Technological areas

Budget development
Security industry

⁶ ACR: Army of the Czech Republic

fence Industry. A security industry is said to exist and is mainly equivalent with the Czech defence industry. In analogy to the European programmes, the Government is trying to encourage industry to take part in the national security research programmes by providing information and conducting special workshops thus creating awareness for the opportunities. Yet, the funding schemes for the security research programmes do not differ from other national research programmes. The co-financing required from companies is typically 50%. Furthermore, it is not intended to alter the funding schemes for security research in the future.

6.3 Divide between civil and defence research

In the Czech Republic, responsibilities and budgets for civil and defence research are assigned to separate ministries and a general divide between civil and defence research is apparent. Like in other European countries, research institutes exist that are involved in both civil and defence related projects and thus provide links between civil and defence research know-how. Nevertheless, there do not exist dedicated mechanisms to couple civil and defence research. To which extent this separation truly affects security research is not clear, since dedicated security research is entirely funded and commissioned by the Defence Ministry. Nonetheless, it is expected that security issues and security research will probably bring civil and defence markets closer together. Moreover, it is anticipated that the Czech institutions dedicated to defence research will not change in size or budget. Therefore, the increase that is seen in the future security research spending might benefit non-defence institutions and, furthermore, might also benefit the coupling between defence and civil research.

6.4 Conclusion

The Czech Government has already devised a national strategy on security research and funding programmes explicitly dedicated to security research exist. The Czech Ministry of the Interior (in close co-operation with the Defence Ministry) is in charge of the strategic aspects of security research, including the national strategy and the co-ordination of the Czech Republic's position regarding PASR and ESRP. The budget for the security research Programmes is provided entirely by the Ministry of Defence, which distinguishes the Czech Republic from other countries covered in this survey, in which a significant part of security research is financed by civil sources.

6.5 Links

- [1] „About the Ministry“, web side of the Czech Ministry of Education, Youth and Sports, 2004
http://www.msmt.cz/_DOMEK/default.asp?ARI=102645&CAI=2887
- [2] “National Research and Development Policy of the Czech Republic for 2004 – 2008 / National Research Programme”, Czech Ministry of Education, Youth and Sports, 2004
<http://www.msmt.cz/Files/PDF/KFNarodnropolitikavAJ.pdf>
- [3] “Budget 2004”, Czech Defence Ministry, 2004, [Czech version only]
<http://www.army.cz/mo/doc/rozpocet2004cz.pdf>
- [4] “National Action Plan to Combat Terrorism – wording 2003”, Czech Ministry of the Interior, 2003,
http://www.mvcr.cz/odbor/bezp_pol/english/dokument/ang_nap.pdf

6.6 Source of Information

The information in this Chapter relies on answers to our questionnaire provided by Prof. Dr. Blahoslav Dolejší, Deputy Director at the Department for Programme Management, Research and Development, Czech Republic’s Ministry of Defence. Additional information regarding co-ordination and funding of civil research comes from the above-cited official websites of the Czech Ministry of Education, Youth and Sports and the Defence Ministry of the Czech Republic.

7 Estonia

The awareness for security research apparently offers space for improvement, at least within the civilian parts of the Estonian Government. Except the Estonian Public Service Academy, which is trying to further the discussion, we could not identify relevant government authorities that have already taken up this issue. It is hence undecided, which government authority is going to become responsible for the subject on the national and also on the European level.

7.1 Status regarding PASR and ESRP

Estonia's status in PASR and ESRP is so far unclear. While universities and higher-educational institutions are likely to contribute, the role that industry will take up is unknown. While a national contact point exists with the Estonian Public Service Academy in Tallinn, a formal responsibility within Government is apparently missing.

Expected main participants in PASR and ESRP

First of all, universities and higher educational institutions are expected to participate but also other research groups might play a relevant role. This includes defence-related institutions like the Baltic Defence College in Tartu. Moreover, companies might also take part although it is not clear which ones this could be at the moment. Government is providing basic funding to universities and research groups, although no full funding. Additionally, co-financing, for example in addition to EU funding, is supplied, too.

Funding schemes

Since the Government's awareness regarding PASR and ESRP is so far limited, there are no plans to especially encourage or support companies to participate in those programmes.

Co-ordination of national position in PASR / ESRP

The Ministry of Education and Research has shown initiative in taking up the security research issue, lately. However, it is not foreseeable which authority is going to become responsible in regard to co-ordinating the Estonian position in PASR and ESRP. So far, a national contact point exists in Dr. Tiiu Pohl from the Estonian Public Services Academy in Tallinn.

7.2 National activities

Security research as a whole has so far not been an important issue in Estonian Government, at least not on the civil side. Although it can be assumed

that security-related research is conducted, it is apparently not carried out under the label “security research”. An official responsibility for the subject is undecided and the discussion has not yet started.

National strategy, programmes, and responsibilities

Although Estonian Government is active regarding security, “Security Research” as a dedicated subject has so far not been an issue. Hence, neither a national strategy nor research programmes on this subject exist. At least from the civil side, the development of such programmes is not considered yet. The only exception is a special budget line on security research from the Estonian Public Service Academy, which is to be included in the state budget. The outcome, however, is still unknown.

Existence of national strategy

National programmes on security research

Furthermore, the responsibility for security research on behalf of the Government lies undecided and it is not clear when the discussion will be taken up. A driving force behind this issue is the Estonian Public Service Academy as a national education and research institution in safety and security.

Responsibility for security research on national level

It might be interesting to note that, considering Estonian research in general, the Estonian Government is planning to introduce a range of new instruments aimed at strengthening the country’s research base. The initiatives shall include establishing new industrial research and technology centres, graduate schools, a new grant system and a programme to send students abroad [1]. Whether this is going to affect security research must be left to speculation.

Development in national research

National Security Industry

There are some industries producing various technologies that might support possible future programme(s).

7.3 Divide between civil and defence research

The divide between civil and defence research is difficult to estimate. In fact, security related research is carried out at defence as well as civil research sites. Dedicated mechanisms to couple defence and civil research do not exist. Hence it is also difficult to anticipate the future developments with respect to the coupling of defence and civil research and the role security research might play therein.

7.4 Conclusion

The awareness for security research is not reasonably pronounced in Estonia. While Government, at least its civil part, has not taken up the subject, the Estonian Public Service Academy is trying to initiate the discussion and

simultaneously acts as a national contact point for the European activities in this regard.

7.5 Links

- [1] „Increased mobility and access to Structural Funds should lift research after 1 May, says President of the Estonian Parliament”, Cordis News, 2004-04-27, http://dbs.cordis.lu/fep-cgi/srchidadb?CALLER=EN_NEWS&ACTION=D&SESSION=&RCN=EN_RCN_ID:21943

7.6 Source of Information

The information in this Chapter relies on the answers to our questionnaire provided by Dr. Tiiu Pohl, Vice-rector Research and Development for the Estonian Public Service Academy in Tallinn. Minor additions were taken from the Cordis News interview with Prof. Ene Ergma, President of the Estonian Parliament cited in [1].

8 Finland

Finland is employing existing government structures to co-ordinate the national and European security research issues. Driven by the Ministry of Trade and Industry as well as the Ministry of Defence, security research has been introduced into relevant cross-departmental committees and a special "theme group" has been established. While a national strategy or national research programmes on security research do not exist, the Defence Ministry's MATINE programmes include relevant security-related research. These projects are carried out in co-operation between defence and civil research institutes.

8.1 Status regarding PASR and ESRP

The Finnish Government co-ordinates the PASR and ESRP activities through its existing committee concerned with EU research policy, which is chaired by the Ministry of Trade and Industry. The committee has established a special "theme group" to follow the PASR development.

Expected main participants in PASR and ESRP

The Finnish main participants in PASR and ESRP will probably be VTT Technical Research Centre of Finland, the Crisis Management Initiative (CMI), the electronic industry, the Defence Forces' Technical Research Centre, and the Radiation and Nuclear Safety Authority. Government provides funding to research institutes and universities, for example VTT receives 30% base funding from Government, the amount for the universities varies and is hence difficult to calculate. Some of the above named participants are also related to defence research. Besides the Defence Forces' Technical Research Centre also companies like Patria, Instrumentointi (Insta) and Environics are involved.

The Government encourages companies to apply within PASR mainly through direct contacts via its different networks and also via the technology programmes funded by the Ministry of Defence. In addition, the EU R&T secretariat (part of TEKES⁷) provides information on PASR via the Internet (as it also does for other EU research and technology programmes). Special measures in this regard, like workshops and seminars, are so far not planned.

Does Government encourage industry to participate? How?

⁷ TEKES is the Finnish National Technology Agency and is the main public financing and expert organisation for research and technological development in Finland (Source: <http://www.tekes.fi/eng/tekes/>).

Co-ordination of national position in PASR / ESRP

Since there is no special organ in the Finnish Government for dealing with (EU-) Security Research, it has been set on the agenda of a committee responsible for EU research policy in general. This committee is chaired by the Ministry of Trade and Industry⁸, which is responsible for technology and innovation policy. The committee has established a security research “theme group”, which follows the development of the PASR and provides support on a practical level.⁹ All official national positions and decisions will go through the relevant EU committee structure.

In addition, the Defence Ministry has introduced the issue of security research into the Government’s committee dealing with “*Security and defence*” and the “*Implementation of the strategy for securing the functions vital to society [1]*”. This committee, which is viewed as a “client” of security research, is expected to contribute in defining substantial aims security research should achieve.

In addition to the Ministry of Trade and Industry and the Ministry of Defence, also all other relevant ministries are involved in the committees mentioned above as well as in the security research theme group.

It is not expected that the current assignment of responsibilities is going to be changed in the future.

Future responsibility

8.2 National activities

Similar to the responsibility for the European level, it is the Ministry of Trade and Industry in close co-operation with the Ministry of Defence that is responsible for security research on the national level. Although a national strategy does not exist, security-related research projects are carried out, for example under the auspices of the Scientific Advisory Board for Defence, MATINE. Participants of these projects are mainly identical with the expected participants in PASR/ESRP and come from the IT sector, electronic industry, and B/C detection technology.

National strategy, programmes, and responsibilities

So far, a national strategy dedicated to security research does not exist. However, the government resolution on “Securing the Vital Functions of Society” [1] provides a basis for research, too. The committee for “*Security and Defence*”, which is working on the “*Implementation of the strategy for*

Existence of national strategy

⁸ Convenor of the committee is Mr. Timo Kekkonen, Ministry of Trade and Industry

⁹ The theme group is chaired by a member of the Defence Ministry and includes participants from the Ministries of the Interior, Social Affairs and Health, Transport and Communications, and the Ministry of Trade and Industry.

securing the functions vital to society [1]”, is also expected to contribute to the definition of the basic aims that security research should achieve. On a more concrete level, it is the security research theme group, which elaborates more detailed issues. As mentioned above, this group involves all other relevant ministries and is chaired by the Ministry of Defence. The overall political responsibility for security research lies with the Ministry of Trade and Industry.

Responsibility for security research on national level

While there are no programmes on security research, the programmes issued by MATINE, the Scientific Advisory Board for Defence, include elements of security research. The establishment of such research programmes is decided by MATINE’s board. But since its funding is mainly focused on defence research, the budget for security-related research is very limited. From an overall budget of approximately 1 Million Euro for MATINE, the estimated amount that goes to security is about 100,000 Euro per year and is likely to increase only slightly in the future.

National programmes on security research

Although the Finnish Government is not intending to establish a dedicated programme on security research, new security-related projects are in preparation. Furthermore, VTT is also starting a preparatory programme.

New programmes

Participants in the national programmes are the same as those expected to take part in PASR and ESRP. The participating companies come from the IT sector, electronic industry, and B/C detection technology. Industry is especially encouraged to take part in the national programmes.

Participants in national programmes

The funding schemes for the programmes with security-related parts do not differ from other funding programmes. This might be changed in the future but there are no specific plans yet.

Funding schemes

National Security Industry

Although there are companies active in the security area, it might be too early to apply the term “security industry”.

8.3 Divide between civil and defence research

The separation between civil and defence research is said to be flexible. Of course, differences exist, but civil and defence research use the same technological knowledge and skills. Although the Defence Forces have their own (rather small) institutes, the MATINE programmes, which amount to approximately 1 Million Euro per year, are carried out jointly with civil organisations. For the future it is expected that the collaboration might intensify further. This goes especially since defence and civil markets are expected to move closer together as they build on the same technologies. In a

small country like Finland, with limited resources, such a development is a necessity.

8.4 Summary / Conclusion

Finland is employing existing government structures to co-ordinate the national and European security research issues. Security research has been introduced into relevant cross-departmental committees by the Ministry of Trade and Industry and also by the Defence Ministry. To follow the development of the PASR the committee responsible for the EU research policy furthermore established a special "theme group", which is chaired by the Ministry of Defence.

While a national strategy or research programme dedicated to security research does not exist, security-related research is carried out within the Defence Ministry's MATINE programme. In this programme, civil and defence research organisations are using the same knowledge base and are collaborating closely. The exploitation of such synergies is essential, especially for a small country with limited resources.

8.5 Links

- [1] „Stadsrådets Principbeslut om tryggande av samhällets livsviktiga funktioner“ / “Government resolution on Securing the Functions Vital to Society”, Finnish Government, November 2003,
http://www.defmin.fi/chapter_images/2047_Government_Resolution_On_Securing_The_Functions_Vital_To_Society.pdf
- [2] “Security Research: The Next Steps”, Communication from the European Commission, COM(2004) 590 final, 2004
http://europa.eu.int/eur-lex/en/com/cnc/2004/com2004_0590en01.pdf

8.6 Source of Information

This Chapter relies mainly on the answers to the questionnaire we received from Dr Matti Vuorio and Ms Marikaisa Tiilikainen, both from the Finnish Ministry of Defence and Mr Heikki Kleemola, Research Director, VTT Industrial Systems.

9 France

The first call of the Preparatory Action PASR has been very well received among French companies and research organisations. All actors that were expected to take main roles in PASR and ESRP have already been active in the first call. In order to co-ordinate the French position, an interdepartmental working group involving all relevant ministries and led by the Prime Minister Service SGCI has been set up.

While neither a national strategy nor a unique security research programme exists, France has already launched a large number of initiatives on security research whose responsibilities lie with the issuing ministries. The participants in these actions are the same as in PASR and cover all technological areas. While the defence area is still divided from the civil research, it is anticipated that the growing demand for dual-use know-how is also leading to an intensified co-operation between civil and defence research.

9.1 Status regarding PASR and ESRP

French companies and research organisations have been very active in the first call of PASR. In order to co-ordinate actions and policy in regard to PASR and ESRP, the French Government has set up a working group consisting of members from all ministries involved in security aspects. Besides the major roles that the French Home Office, the Defence Ministry, and the Ministry of Research play, it is the Prime Minister Service SGCI that co-ordinates the French position in PASR.

Expected main participants in PASR and ESRP

French research organisations and companies received the first call of PASR very well and those that were expected to be main players have already been active in that call. Amongst those applicants are fully funded organisations like universities and governmental research organisations as well as partially funded organisations such as companies and private research.

Funding schemes

Only very few research entities in France are entirely dedicated to defence research. Most of the institutions are concerned with civil or dual-use technology studies. Nevertheless, it is not regarded as a problem if defence research organisations want to participate in PASR as long as the studies address dual-use technology issues.

Participation of defence research

Like many other governments in this survey, France's Government intends to actively encourage companies to participate in PASR and ESRP. All French ministries concerned by security are involved in the EC initiative

Does Government encourage industry to take part? How?

and take appropriate action. For example, the ministries organize and disseminate information on PASR and ESRP and are furthermore active in the above-mentioned national working group on security research.

Co-ordination of national position in PASR / ESRP

All ministries of the French Government are considered to be affected by security issues and are therefore involved in the decision processes (i.e. in the interdepartmental working group mentioned above). Four of them play a major role: The Home Office, the Prime Minister Services SGDN and SGCI, the Ministry of Defence and the Ministry of Research. As always when European affairs are concerned, the co-ordination of the French position lies with the SGCI.

9.2 National activities

France has already launched a huge number of actions and initiatives regarding security research, even though there is no unique national strategy and no national security research programme. While different ministries are responsible for the current initiatives and while there are ongoing discussions on how the existing fragmentation of actions and responsibilities can be overcome, it is not foreseeable that this constellation will change in the short term.

National strategy, programmes, and responsibilities

The French Government has already launched many actions in the field of security research although there is no unique strategic document. All French Ministries concerned with security are involved. If appropriate, the co-ordination of such actions is assumed by the Prime Minister Service SGCI. Within those actions, most technological areas are covered – as it also appears to be the case within the first PASR call.

Existence of national strategy

Responsibility for security research on national level

While there is no unique national security research programme, a huge number of actions with separate contracts exists. There are many initiatives currently in progress that deal with specific and confidential areas. Responsible for actions and initiatives are the respective ministries. Although the French budget for civil research and development (*“Budget civil de recherche et développement”*, BCRD) is co-ordinated by the Ministry of Research, each ministry has its share in that budget – except for the Defence Ministry, which has a separate budget. Each ministry organises its own research programmes (on both national and regional level) according to its funding, its priorities and its needs. Depending on appropriateness, decisions regarding the programmes are taken at Prime Minister, ministry, national or regional level. Because of the fragmentation of the actions, the different sources of

National programmes on security research

funding, and the different levels at which decisions are taken it is not possible to estimate the overall budget spent on security related research.

In addition to the existing activities, new research programmes on security research are in preparation. The budget for 2005 is currently negotiated but it is likely that certain fields, such as “*fight against terrorism*”, are considered as high priority and will therefore receive additional funding. There is also a discussion in progress if and how the responsibility for programmes and policy can be altered and adapted to future needs. So far, however, there are no indications what the outcome of the discussion will look like. Hence, it is unlikely that the situation will change in the short term.

Programmes
in preparation

Change of
responsibility

Analogous to PASR, it is the same set of institutions and companies that participate in the national research programmes. Funding schemes in the national programmes depend on the kind of participant (university, company, etc.) but also on the chances in regard to a successful commercialisation of the results, i.e. even research at companies or private research organisations can be fully financed, if the subject requires it. If a commercial market exists, companies or research organisations typically have to supply appropriate co-financing. In this respect, funding for security related research does not differ from other research subjects. Whether this practice is going to be altered in the future has so far not been decided. It is unlikely, however, that things will change in the short term.

Funding schemes in
national programmes

National Security Industry

The French industrial structure covers all technological areas relevant to security and a security industry is thus considered to exist (although it is not clear to which degree these companies are linked with each other compared to more mature respectively traditional sectors). Although many initiatives exist that are related to security research, the Government did not take specific action to strengthen the profile of a French security industry by a coordinated programme.

9.3 Divide between civil and defence research

Although there are separate budgets for civil and defence research as well as separate responsibilities and programmes, too, there are also more and more dual-use subjects coming up. Since competencies exist either in the defence or in the civil area, more and more relations between civil and defence organisations are being generated to meet the growing demand for technology transfer and technology insertion. There exist a number of technical research centres on the civil side, for instance in biological technologies, that develop abilities useful for defence as well as for civilian use. But also the French defence research institutions document the trend towards and demand for dual-purpose activities, by engaging in a growing number of such activities.

Additionally, the French civil research budget (BCRD) provides mechanisms to address dual-use research purposes. The budget is called “Budget civil de recherche et développement” and excludes the Defence Ministries’ research budget, but around 200 Million Euro within BCRD are allocated for dual-use technologies. The CNES (Centre National D’Etudes Spatiales, French National Research Centre for Space) and the CEA (Commissariat à l’Energie Atomique, French Research Centre for Atomic Energy) are the main beneficiaries. The budget share on research and technology within BCRD that is dedicated to security matters will probably increase in the future. Even so, and despite the fact that the technologies of the civil and defence markets may become more and more dual, it is seen as likely that the civil and defence markets will stay apart because their goals, their environments and their customers are so different.

9.4 Summary / Conclusion

While many actions on security research are ongoing, an ultimate point of contact for the European activities has not been assigned, yet. The French Government and its ministries, however, follow the (European) discussions on security research intensely. For a final decision about the placement of responsibility for security research, a clarification would be welcome which parts of Research & Technology are going to be managed by the European Defence Agency and which will be dealt with by the future European programme on security research. Nevertheless, the French Government is deeply convinced of the need of a specific programme on security. The fact that many French organisations and companies already took the chance and applied to the first Request for Proposals in PASR is greatly appreciated by the Government and also documents the great interest that research and industry exhibit in that area.

9.5 Links

- [1] « Recherche et développement technologique de la France », Ministère délégué à la Recherche (French Ministry of Research), 2003, <http://www.recherche.gouv.fr/brochure/index.htm>
- [2] Overview of Science and Technology in France in 2003, Department of International Trade Canada, 2003, http://www.infoexport.gc.ca/science/France_2003-en.htm

9.6 Source of Information

The information in this Chapter relies on the answers to our questionnaire on security research provided by Mr Michel Gaillard (Chef de la Mission et chef du Bureau, Mission Affaires Européennes, Direction de la

Technologie, Ministère délégué à la Recherche). Minor additions regarding the civil research budget are based on information from the websites of the French Ministry of Research and the Canadian Department for International Trade.

10 Germany

In Germany, the discussion on security research is starting and the preparation of a national strategy is under consideration. So far, the lead rests with the Federal Ministry of Education and Research and the Federal Ministry of the Interior, in regard to policies on both the national and the European level. The national research programmes do not focus on security research but cover security-related aspects. From industry it is mostly companies from the defence sector that are involved in security research and also in PASR.

10.1 Status regarding PASR and ESRP

The German position regarding PASR and ESRP is co-ordinated by the Ministry of Education and Research (BMBF) and the Ministry of the Interior (BMI). Since research units of several Federal Offices are already active in security-related research, these research units are also likely to play a relevant role besides the German PASR/ESRP participants from research and industry. Furthermore, Government intends to encourage industry to take part via targeted dissemination of information. The German network of national contact points is currently preparing to meet the future demand for information and advice regarding the European security research programmes.

Expected main participants in PASR and ESRP

In Germany, the main contributions to PASR and ESRP are expected to come from four types of institutions. These institutions are research organisations, especially institutes of the application oriented Fraunhofer-Gesellschaft, some of which are closely related to defence research. Also German industry, especially the defence sector, is expected to play a major role. Furthermore, some universities are likely to apply, for example the “Security Cluster” from the Free University of Berlin and the University of Bonn. Contributions are also expected from several federal agencies and their research units, for example the Federal Office for Criminal Investigation (Bundeskriminalamt), the Federal Office for Security in Information Technology (Bundesamt für Sicherheit in der Informationstechnik), the Federal Office for Civil Safety and Emergency Aid (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe), and also the Federal Border Guard (Bundesgrenzschutz).

While Federal Offices, as part of the Government, are fully financed, other research organisations and universities receive base funding to different degrees.

Funding schemes

Although a final categorization of potential participants into technological areas is not possible, it is likely that the information and communication technology sector and the defence sector are going to play important roles.

Technological areas

The Government is planning activities to encourage companies to take part in PASR and ESRP. These activities will focus on setting up information networks, mailing activities, organization and execution of information workshops respectively supporting information events held by other research organisations or universities. Responsible for setting up these activities and also for co-ordinating the German position and policy in regard to PASR and ESRP are the Ministry of Research (BMBF, EU Division) and the Ministry of the Interior (BMI, Division V 4). The final decision, which ministry is going to be co-ordinating the European security research policy in the future, has not been met yet.¹⁰

Does Government encourage industry to take part?

Responsibility for policy in PASR/ESRP

In addition, the German network of National Contact Points, which provides advice to applicants of the EU research programmes, is currently preparing to meet the oncoming demand for information from the potential applicants in the security research programmes.

10.2 National activities

The development of a national security research strategy is currently under consideration in Germany. In analogy to the PASR / ESRP policy, this activity would be co-ordinated by the Ministry of Education and Research together with the Ministry of the Interior, involving all other German stakeholders, like the Defence Ministry. While dedicated security research programmes do not exist, respective research is conducted via many other research programmes that exhibit areas relevant to security. From an industry point of view, it is especially companies from defence industry that try to transfer their know-how into this area, too.

National strategy, programmes, and responsibilities

To devise a national strategy on security research is part of ongoing considerations. The Ministry for Education and Research and the Ministry of the

Existence of national strategy

Responsibility for security research on national level

¹⁰ Update: As of December 2004 the divisions responsible for security research are division 113, "EU Research Policy, EUREKA", Federal Ministry for Research and Education and division P I I, "General crime fighting, prevention, office of the Conference of the Interior Ministers", Federal Ministry of the Interior. See Appendix 16.1 for contact information.

Interior would be in charge of such a strategy. The Defence Ministry would be involved, too.

Dedicated programmes on security research do not exist so far. The need for research and development is mainly taken care of in civil research programmes from other areas where security aspects play a role, and in the agencies and research units affiliated to the Ministry of the Interior and the Defence Ministry.

Within civil research programmes, which are issued and funded exclusively by the Research Ministry, security-relevant work is mainly conducted in the space sector, in IT security as well as in nano and optical technologies. The Ministry of the Interior and its affiliated research units cover especially the areas of IT security, technology in criminology, border control at harbours and airports, inspection of persons and luggage at airports, biometry, and the development of detection technology for biological¹¹, chemical and radioactive agents.

The research activities of the Defence Ministry are carried out as mission oriented research / applied research and build on results from civilian research and technology activities. It is noted by the German Defence Ministry that future military research must be secured and executed on the national and European level independently of the European Security Research Programmes. It is not seen as sensible, however, to separate civil and defence activities in the security research area because of the large share of dual-use technology and the resulting synergies. The Defence Ministry will hence also be involved in the national discussion.

The institutions and companies that conduct security-related research on the above-described national level are identical with those expected to be relevant to PASR and ESRP as listed in 5.1.

National Security Industry

Many companies from the defence sector are also active within (advanced) security and try to transfer their competencies to that market. It is, however, not clear if this group can already be seen as a separate industry. This goes especially since the overlap with the defence industry is significantly large.

¹¹ In regard to biological agents, the Robert Koch Institute in Berlin should be named, which houses the Federal Information Centre for Biological Safety, affiliated to the Federal Ministry of Health and Social Security [1].

10.3 Divide between civil and defence research

The separation between civil and defence research in Germany is very strict and deliberate. Defence research is conducted at the institutes of the FGAN (Research Establishment for Applied Science), at research units affiliated directly with the Defence Ministry and also at the Fraunhofer institutes associated in the Fraunhofer defence and security alliance. FGAN and especially the Fraunhofer institutes also take up relevant roles among the German PASR and ESRP participants.

While civil and defence research are kept apart from each other deliberately, an exception – and perhaps a first step in that direction – exists with the defence research conducted by the Fraunhofer institutes. These institutes engage strongly in civil projects, too, and are hence able to build up and deliver know-how from both defence and civil experience.

10.4 Conclusion

In Germany, the discussion on security research is starting and the preparation of a national strategy is under consideration. So far, the EU-related divisions within the Research Ministry and the Ministry of the Interior coordinate the German position regarding PASR and ESRP. Although the Government sees security research as an important subject, actions dedicated exclusively to security research are not evident so far. In contrast to other Western European countries, for example, an inter-departmental working group on security research has not yet been established. Instead, the coordination is done along the existing organizational and communication structures.

10.5 Links

- [1] „Centre for Biological Security, Robert Koch Institute“, http://www.rki.de/UEBER/UEBER_E.HTM?UEBER/RKI/ZBS_E.HTM&1

10.6 Source of Information

The information in this Chapter relies on the answers to our questionnaire provided by Wolfgang Mosbacher, German Ministry of the Interior, Division V 4a. The answers were co-ordinated within the Ministry of the Interior, in accordance with the Ministry for Economic Affairs, the Research Ministry, and the Ministry of Defence. Additional information, for example regarding the divide between civil and defence research, originates from the answers supplied by Prof. Dr. Klaus Thoma, head of the Fraunhofer-Institute for High-Speed Dynamics, Ernst-Mach-Institute and chairman of the Fraunhofer Defence and Security Alliance.

11 Poland

Together with the Czech Republic, Poland is the other country in this survey that has already established both a national strategy as well as dedicated research programmes on security research. The Ministry for Science and Information Technology is in charge of organizing the Polish position within PASR and ESRP and it is also responsible for the national strategy. The national research programmes are devised by the State Committee on Scientific Research (KBN) respectively by the Defence Ministry in case of defence-related programmes.

The divide between civil and defence research is not considered to be strong in Poland since only rather few institutes exist that are entirely dedicated to defence research. Most of the research is hence carried out in collaboration with civil institutes and universities.

11.1 Status regarding PASR and ESRP

Expected main participants in PASR and ESRP

In Poland, the main participants in PASR and ESRP are expected to come from companies, research groups from R & D units, and universities, some of which are also related to defence research. Companies are likely to come from the bio and information technology area.

Technological areas

The Polish Government also intends to encourage and support companies to take part in the EU programmes by increasing awareness of the opportunities and providing information via special workshops.

Does Government encourage industry to take part? How?

Co-ordination of national position in PASR / ESRP

Responsible for the co-ordination of the Polish position in regard to PASR and ESRP, is the Polish Ministry for Science and Information Technology.

11.2 National activities

A national strategy on security research exists and dedicated research programmes have already been established in Poland. While the Ministry for Science and Information Technology is in charge of the strategy, it is the KBN and the Defence Ministry who are in charge of the civil respectively the defence-related programmes on security research. The main actors in these programmes come from the IT, aerospace, telecommunication and defence sectors.

National strategy, programmes, and responsibilities

Poland has already devised a national strategy on security research. In analogy to the co-ordination within PASR and ESRP, it is the Ministry for Science and Information Technology that is in charge of this strategy.

Existence of national strategy

Responsibility for security research on national level

Moreover, national programmes on security research exist and further ones are in preparation. Research programmes and their budgets lie in the responsibility of the State Committee of Scientific Research (KBN), which is the supreme authority on state policy in the area of science and technology and also the major governmental source of funds for research [2]. In addition to the research funded by KBN comes the military-related research accounted for by the Defence Ministry [1]. The funding for the security research programmes comes from both civil and defence sources and is expected to increase with 3.5% per year. Yet, the ratio between civil and defence spending as well as the actual amount of money allocated to security research is classified information.

Research programmes

Responsibility for research budgets

To take part in the national programmes, typically requires 50% co-financing by the participants, which holds for all research programmes. Hence, there is no special treatment for security research although the funding schemes might be changed in the foreseeable future according to ministerial preferences. There are also no special measures to encourage industry to take part in the national programmes. The amount of co-financing for industry participants is also 50%.

Funding schemes

Conditions for industry

In the national security research programmes all kinds of R&D units are involved, including those from universities and companies. The main industrial actors come from the IT, aerospace, telecommunication and defence sectors. A national “security industry” is considered to exist.

Participants in national programmes

Security industry

11.3 Divide between civil and defence research

The responsibilities for military research and civil research are placed with separate authorities, namely the Defence Ministry and the State Committee of Scientific Research KBN [1]. Nonetheless, the divide between defence and civil research is said to be not so strong in Poland. This might result from the fact that only a few research institutions in Poland conduct exclusively defence research. Like in other European countries, non-military research groups that carry out defence and civil research might provide the coupling. Explicit governmental mechanisms to couple defence and civil research do not exist.

It is anticipated that the number of dual-use products will increase further and thus move civil and defence markets closer together. Nevertheless, this is seen to happen independently of security and security research matters.

11.4 Conclusion

Poland is one of two countries in this survey that already have a national strategy as well as dedicated funding programmes for security research in place. The Ministry of Science and Information Technology is in charge of co-ordinating the Polish position with respect to PASR and ESRP and also in regard to the national security research strategy. Furthermore, research programmes dedicated to security research exist, which are devised by the State Committee on Scientific Research KBN respectively by the Defence Ministry in case of programmes that are defence-related. Despite separate responsibilities and separate budgets on civil respectively defence side, the divide between civil and defence research in Poland is not seen as particularly strong. The increasing demand in dual-use services and products is seen to further the coupling between defence and civil research, although this development is not attributed to security and security research.

11.5 Links

- [1] „Financing of R&D“, web side of the Polish Ministry for Science and Information Technology
http://www.mnii.gov.pl/mnii/index.jsp?place=Menu08&news_cat_id=298&layout=5
- [2] „General Information about KBN“, web side of the Polish Ministry for Science and Information Technology
http://www.mnii.gov.pl/mnii/index.jsp?place=Menu08&news_cat_id=292&layout=5

11.6 Source of Information

The information in this Chapter relies on the answers to our questionnaire provided by Prof. Dr. Jacek Ronda, Senior Advisor to the Minister of Science and Information Technology. Additional information regarding the overall organization of funding and research, we have gathered from the ministry websites cited above.

12 The Netherlands

In preparation of the ESRP and accompanying the PASR, the Dutch Ministries involved in security research are setting up an interdepartmental working group co-ordinated by the Ministry of Economic Affairs. While the working group is a forum to co-ordinate the Dutch policy in regard to PASR and ESRP, for the time being, its final goal has still to be determined. A national strategy and a dedicated research programme on security research do so far not exist but national research programmes in different policy areas are running that include security components.

12.1 Status regarding PASR and ESRP

By setting up a cross-departmental working group the Dutch ministries involved in security research are in the process of establishing a forum to exchange information and to co-ordinate government activities in regard to PASR and ESRP. In order to further support potential PASR/ESRP applicants, the Government intends to inform and actively create awareness of the opportunities among companies and research institutes.

Expected main participants in PASR and ESRP

It is likely that TNO, the Netherlands Organization for Applied Scientific Research and NLR, the Dutch National Aerospace Laboratory, will play the main roles among the Dutch research institutions and universities in PASR and ESRP. Both organisations are partly government funded and have also strong competencies in defence research. The major industry participants are expected to comprise of Stork, Capgemini, Siemens, Logica-CMG and Thales NL, thus covering technological areas like information & communication technology, manufacturing, space, defence, transport and consultancy. There might also be participants from the food, medical and agricultural sector.

Technological areas

Defence-related participants

In order to create awareness of the opportunities of PASR and ESRP among companies and research institutes, the Dutch Government intends to actively inform potential participants via different means of communication. For example, special workshops for Dutch companies are envisaged (in coopera-

Does Government encourage industry to take part? How?

tion with TNO and other intermediary organisations like NIVR¹² and NIID¹³ and also EGL¹⁴).

Co-ordination of national position in PASR / ESRP

The Dutch activities regarding PASR and ESRP on the policy level involve nine different ministries among which the Ministry of Economic Affairs has assumed an informal role as a “primus inter pares”¹⁵ in furthering the co-ordination process. In regard to a vision point of view, the lead rests with the respective ministries, for example with the Ministry of the Interior for aspects of public safety, with the Ministry of Justice regarding counter-terrorism, and with the Ministry of Economic Affairs for all economical aspects to name just three. The other ministries involved are the Ministry of Defence, the Ministry of Finance, the Ministry of Transport and Water Management, the Ministry of Public Health, Welfare and Sport, the Ministry of Agriculture, Nature Management and Fisheries, and last but not least the Ministry of Education, Culture and Science.

12.2 National activities

Security Research in The Netherlands is dealt with in a number of research programmes from different policy areas. With the exception of the National Defence Research Programmes, no overarching national R&D activities exist that are dedicated explicitly to security research, so far.

National strategy, programmes, and responsibilities

Since each ministry decides about its own research programmes, the responsibility for the development of research programmes and policies lies with the respective ministries. A super ordinate national strategy on security research or a dedicated security research programme neither exists nor is it under preparation. Instead, the need for research and development in security-related areas is taken care of in several research programmes that include relevant security components. Hence, security research appears in several different guises. These guises are TNO programmes on defence and public safety, research & technology defence programmes of the Ministry of Defence, counter terrorist programmes of the Ministry of Justice, safety programmes of the Ministry of Housing, Spatial Planning and the Environment, and security programmes of the Ministry of the Interior.

Existence of a national strategy

Responsibility for strategy

Research programmes

¹² NIVR: Netherlands Agency for Aerospace Programmes

¹³ NIID: Netherlands Defence Manufacturers Association

¹⁴ EGL: EG-Liason, Netherlands national contact point for FP6

¹⁵ First among equals

The following (not necessarily complete) list in Table 12.1 gives an idea about technological areas with ongoing security-related research:

Besides the existing programmes, additional research programmes with relevant security related parts are under preparation. However, these are not

New programmes

Defence:	Security is an integral part of any defence research, but focuses mainly on the safety of personnel and material, for example, decreasing the chance of detection. Furthermore, a special programme focuses on detection and border control issues for military police, for example iris scans, biometrics, mobile police and military police communication networks. Another programme focuses on protection against explosives and weapons of mass destruction (for example NBC protection).
Aeronautics:	Aircraft safety and security, and the use of Remote-Piloted Vehicles (RPVs)
Genomics:	Genome sequence analysis studies
Food quality and safety:	Protection of food production chains
External safety:	Concerns the impact of dangerous substances on the environment, including terrorist attacks on dangerous goods and the impact of attacks on complex infrastructures (like airports or harbours).
Social safety and security:	Maintenance of law and order as well as crisis and crowd control
Applied information technology research:	Safety and security of digital systems, intelligent systems, development and security of eBusiness, eCommerce, eLearning and eGovernment concepts
Personal safety & health:	Inoculation programmes and health incident crisis scenarios

Table 12.1: Examples for technological areas with ongoing security related research in The Netherlands.

going to be exclusively dedicated to security research but include the security-related issue for a given application or research issue. A representative for TNO Defence, Security and Safety estimates that the budget allocated for security research within the government programmes might increase by 200% in the future.

Depending on their size, the decision to establish research programmes is met by the Secretary General or the Director General of the ministries, up to the Ministers and the Lower House (Tweede Kamer) for larger programmes.

Responsibility for establishing programmes

Participants in the national programmes are the same ones that are expected to apply within PASR and ESRP. Additionally, universities, the Dutch insti-

Participants in national programmes

tute for public health and environment (RIVM) and the private Institute for Safety, Security and Crisis Management (COT) play relevant roles.

The co-financing required from the participants in the national programmes usually lies between 0% (fully funded institutions like RIVM) and 50%, depending on the programme. To make participation for industry more attractive, special funding for economic development is available to companies. This funding, however, is also available within non-security programmes.

Funding schemes in national programmes

National Security Industry

Although companies exist whose business is related to advanced security, they are, however, not considered as an existing “security industry”.

12.3 Divide between civil and defence research

The separation of research into defence and civil research is quite strong in the Netherlands. Defence research is carried out completely by the Dutch Ministry of Defence respectively by the dedicated defence research institutions like NLR (partly), TNO’s laboratories FEL, PML and TM, and the Maritime Research Institute Netherlands MARIN (partly). Within TNO, NLR, and MARIN, however, the co-operation and dual-use is quite strong. Besides research for the Defence Ministry and the Armed Forces, these laboratories are also active in European research programmes and participate in (selected) civil applications. This is especially interesting since, for example, TNO’s involvement in civil projects provides the civil side with opportunities to access know-how acquired in defence research [1]. Mechanisms to couple defence and civil research exist in form of integrated TNO and NLR programmes with an annual spending of approximately 65 Million Euro in defence and 5 Million Euro in civil security activities. It is probable that non-defence programmes will be started along the same model.

Mechanisms for exchange

Besides those integrated research programmes within TNO and NLR, there are no other official mechanisms to couple defence and civil research. But since a decrease in government spending on defence research is expected, civil and dual-use projects might become more important and further enhance co-operation across the divide, especially if budgets will be increasingly linked to the integration of civil and defence research.

Future trend of separation

It is thus also anticipated that civil and defence markets will come closer together and that security might be a driving application therein. Nevertheless, defence and also security markets exhibit special requirements, which will always keep them apart from being open markets.

12.4 Conclusion

While no overarching national activities regarding security research exist, the need for security-related research has been taken care of in several research programmes from different policy areas and hence under different responsibilities. In order to co-ordinate a common Dutch position and policy with respect to PASR and ESRP, the ministries involved are in the process of setting up an inter-departmental working group convened by the Ministry of Economic Affairs. On the national level, the responsibility for security research resides with the respective ministries and it is not considered to change this.

With regard to the divide between civil and defence research, the situation is similar to the other countries in this report, which exhibit a strict separation of responsibilities for civil respectively defence research. While no governmental mechanisms exist to couple defence and civil research it is the defence research laboratories themselves (and may be some companies in the defence area) that engage in civil and dual-use projects and thus provide defence know-how also for non-defence markets.

12.5 Links

- [1] TNO Defence, Security and Safety web portal,
http://www.tno.nl/en/core_areas/defence_security_safety/index.html

12.6 Source of Information

The information in this Chapter relies on the answers to our questionnaire provided by Astrid Boschker, Advisor Industrial Benefits and Offsets at the Dutch Ministry of Economic Affairs and by Peter Schulein, TNO Account director Public Safety, TNO Defence, Security and Safety. Additions in regard to defence research originate from TNO's website cited in [1] and [2].

13 United Kingdom

Security and especially counter-terrorism receives strong attention in the UK, which is apparent from over 30 years experience in dealing with domestic terrorism. While there is no unique national strategy on security research, the responsibility for security-related research rests with the different ministries and the respective policy areas. In addition to the existing activities on the departmental level, the UK Government ordered a huge cross-governmental programme on “CBRN resilience”¹⁶ in October 2001, which was set up to improve the inter-departmental co-ordination and also to specify research needs, especially in the area of CBRN counter-measures.

The international co-operation and co-ordination of security related research with research partners and authorities in the United States is said to be excellent but to leave considerable space for improvement with the European partners.

13.1 Status regarding PASR and ESRP

The lead for the UK position regarding PASR and ESRP rests with several government authorities. It seems that the Transdepartmental Science and Technology Group (TDST) at the Office for Science and Technology (OST) is initiating a cross-governmental co-ordination across the group of involved authorities. However, since we were unable to receive an official statement from the UK Government, the formal status of this co-ordination remains unclear.

In contrast to most of the other countries in this report, there are no indications that the UK Government is planning to especially encourage industry to take part in the programmes. Instead, the UK trade associations might take some actions.

Expected main participants in PASR and ESRP

Proposals from the United Kingdom are likely to be industry led, forming teams that involve universities and special defence analysis experts working in partnership with other European collaborators. Major players in the programmes will probably be EADS Astrium (UK), ESYS, Logica, and QinetiQ, which is the now privatized part of the former British Defence Evaluation and Research Agency DERA.

Participants

¹⁶ CBRN: Abbreviation for “Chemical, Biological, Radiological, and Nuclear”.

Since it is expected that industry will take up a leading role, the need for special government encouragement or support for companies is not apparent. Some actions are probably taken by the UK Trade Associations, for example UKISC in the Space domain.

Government support to industry

Co-ordination of national position in PASR / ESRP

The lead for the PASR activities rests with more than one government department and also the British National Space Centre (BNSC). It seems that the Department for Industry and Trade (DTI), in particular the Transdepartmental Science and Technology Group (TDST) within DTI's Office for Science and Technology (OST), has initiated a cross-governmental table to co-ordinate the British position within PASR.

OST is responsible for funding basic research via UK's seven Research Councils. It also supports the Chief Scientific Adviser to the UK Government¹⁷, Professor Sir David King, in his role co-ordinating science and technology across Government ([2] Table 1). It is the Chief Scientific Adviser who is responsible for the Government's international science and technology policy including co-ordinating the UK's position on EU Framework programmes [6].

Responsibility for international science & technology policy

13.2 National activities

The UK exhibits a large set of activities regarding security research. While there is no overarching national strategy, research lies in the responsibility of each respective ministry and its policy/application areas. In addition to the departmental activities, and possibly most remarkably among the Government's activities in this area, is the huge cross-governmental programme on CBRN resilience, which is led by the Home Office and which has been spawned in October 2001.

National strategy, programmes, and responsibilities

The UK has apparently strong national activities going on in security research. Moreover, especially on anti-terrorism, the UK has a high level of scientific collaboration with the US. However, the UK Government itself

Existence of national strategy

¹⁷ The Chief Scientific Adviser is responsible to the Prime Minister and members of the Cabinet for the quality of scientific advice within government and for providing personal advice to them on any aspect of the Government's policy on Science and Technology. In particular the Chief Scientific Adviser has responsibility for the Government's guidelines on advice and policy making and for their implementation; for ensuring the co-ordination of Science policy issues within government and with the devolved administrations; for maintaining an overview of government policies affecting the UK Science base; and for the Government's international science and technology policy including co-ordinating the UK's position on EU Framework programmes [6].

notes that there is “*particular scope*” for developing such links with the EU partners ([3], paragraph 136).

While there is no overarching national strategy on security research, the responsibility for the subject is handled and organized on the policy level within the different departments (ministries). In fact, setting up strategies and research programmes is driven by demand via the individual policy areas and their focus on subject matters like anti-terrorism, crime prevention or transport security. Examples for the development of departmental strategies in the security area are the DTI’s strategy on security and the Home Office’s strategy on a scientific response to terrorism.

Responsibility for Security Research on national level

There also exist cross-governmental initiatives. The most prominent example is the Government’s “CBRN Resilience Programme”¹⁸, which is led by a team at the Home Office an was set up in October 2001. Its research and development is aimed at strengthening UK’s response to a CBRN terrorist incident. It should identify all relevant research, national and international, and identify gaps in the evidence base and how they can be filled ([1], 4.13). It should also improve the co-ordination of civil counter-terrorism research across Government [4]. According to [3] (paragraph 5), this programme involves scientific competencies from different government departments, industry, academia and international partners.

Cross-governmental programme

Additionally, the ministries conduct security relevant research in their own research departments and by utilizing departmental research programmes. We do not know how much of this research is carried out externally, for example by non-governmental research units or companies.

Departmental research

Besides the departmental programmes, there are also programmes for academic research funded by the UK Research Councils. The Research Councils account for 2,4 Billion £ in the 2004/05 research budget according to their own press releases in July [5]. Some of the programmes are related to security, for example, in the areas of detection techniques for bacteria and viruses, unobtrusive security devices for detecting people and weapons, crime prevention and detection, including support for anti-terrorism technologies, advancement in forensic science techniques and personal security devices. Furthermore, the programmes include research on domestic management of terrorist attacks, including public communication and understanding the causes and social effects of terrorism.

Academic research

Although the report of the Science and Technology Committee [3] and the report of the Royal Society [4] indicate a lack of involvement of non-governmental research institutions in the CBRN-programme and also a lack

Coupling of governmental and academic research

¹⁸ CBRN: Abbreviation for “Chemical, Biological, Radiological, and Nuclear”.

of co-operation with the UK's civil knowledge base by the defence-related research organisations (e.g. the Defence Science and Technology Laboratory (DSTL), see [3], paragraphs 51 – 54), it is unclear whether this is “complaining on an already high level” or an actually serious problem.

The report of the Science and Technology Committee furthermore mentions that the role of science in the efforts against terrorism is underestimated in the UK Government (in contrast to the United States, as the report points out in paragraph 186). To improve the scientific base and the scientific culture within the Home Office, which is responsible for homeland defence issues, Government appointed a high-ranking Chief Scientific Adviser for the Home Office in November 2002¹⁹.

Scientific advisers
in Government

In addition, scientific advisory groups related to security have been installed within Government. The CBRN Science Working Group, chaired by the Chief Scientific Adviser, was established to look at specific areas of CBRN resilience in December 2001 and included academic, industry and government specialists. SAPER, the Scientific Advisory Panel for Emergency Response, should complement existing mechanisms for providing scientific advice to the Government. While the groups' existence is in the public domain, their memberships and activities are classified ([2], paragraphs 20 – 21).

Scientific advisory
groups on security

It is hence evident that the awareness of the need for science in security-related issues is rather strong. The Government made clear, however, that the existing funding level is believed to be sufficient and that no additional money is going to be spent ([3], paragraph 3). It is more likely that a modification of priorities for the existing programmes is required.

Future budget for
security-related
research

Since research and research programmes do not specifically focus on security research but are established to meet concrete scientific demand, there do not exist special funding schemes for those parts that are related to security.

Funding schemes

Participants in the national programmes are research departments from the Home Office, the Ministry of Defence, the Department of Health and other ministries as well as the research organisations and companies already listed as potential PASR and ESRP participants in 13.1.

Participants in na-
tional programmes

National Security Industry

While the above descriptions focus mainly on the government-driven activities, the United Kingdom also exhibits a relatively mature industry that al-

¹⁹ Government's science and innovation strategy, Investing in Innovation, published in 2002, stated that all departments that use or commission significant amounts of research should have a Chief Scientific Adviser (CSA) [1]. Source: <http://www.ost.gov.uk/policy/invest-innovation/rec5.htm>

ready participates in the security domains (see for example the BSIA, British Security Industry Association). PASR is no new world, in this regard. However, the firms within BSIA span a much broader range of activities.

13.3 Divide between civil and defence research

The separation between civil and defence research seems to be relatively strong. The Home Office, for example, is in charge of research strategies and programmes related to homeland defence while the Defence Ministry is exclusively responsible for the military research needs. Hence, the Ministry of Defence has no formal role and no obligations in the “scientific response to terrorism”, even though its research agency, DSTL, is the primary source of government-funded technologies with application to CBRN countermeasures ([2], paragraph 31).

However, connections between civil and military research exist. Industry and universities provide the bridge as regards technology and know-how. For example in the area of CBRN, the Defence Science and Technology Laboratory (DSTL) subcontracts 20% of its research to universities and companies. Furthermore, the transfer of military technologies to industry was the basis for setting up the Defence Diversification Agency (DDA) in 1999, which is offering access to the UK’s defence science and technology knowledge base. However, in its report the Science and Technology Committee points out certain shortcomings of the current situation and strongly recommends making greater efforts to explore synergies and joint projects between civil and defence research.

Coupling of defence and civil knowledge bases

13.4 Conclusion

Security Research as a topic of its own has not attracted attention in the UK but has always been strictly coupled to concrete needs in the different policy areas. The UK Government has been very active in improving resilience and counterterrorism measures across Government, and to identify research and development needs in these fields. While we cannot assess the scientific culture in UK’s Government, it is clear that the Government and its departments have huge practical experience in coping with security threats from dealing with domestic terrorism for over 30 years. New threats, which became evident for example in the nerve-gas attack against Tokyo’s subway in 1995²⁰, were taken up by the UK Government and led to the establishment of countermeasures, including setting up/optimizing organizational struc-

²⁰ On March 20th, 1995, members of the Japanese cult Aum Shinrikyo (Supreme Truth) released the chemical nerve agent sarin in a subway train in Tokyo, Japan. The attack killed 12 people and injured over 1,000.

tures and research, especially in the CBRN area. Scientific collaboration with the United States in the security area is excellent but offers scope for improvement regarding the EU partner countries.

13.5 Links

- [1] “Investing in Innovation: A Strategy for Science, Engineering and Technology”, July 2002, HM Treasury.
- [2] „Eighth Report“, House of Commons, Committee on Science and Technology, Session 2002-03 HC 415-I, <http://www.publications.parliament.uk/pa/cm200203/cmselect/cmsctech/415/415.pdf>
- [3] “The Government Reply to the Eighth Report from the House of Commons Science and Technology Select Committee, Sessions 2002-03 HC 415-I”, UK Government January 2004, http://www.homeoffice.gov.uk/docs2/stc_report_reply.pdf
- [4] “Government Response to Royal Society Report: Making the UK safer, detecting and decontaminating chemical and biological agents”, Press Release of the UK Home Office, Stat018/2004, 26th May 2004, http://www.homeoffice.gov.uk/n_story.asp?item_id=965
- [5] “Research Councils enthusiastic about strengthened infrastructure for UK science”, News release by Biotechnology and Biological Sciences Research Council (BBSRC) on behalf of the Research Councils UK, 12th July 2004, <http://www.rcuk.ac.uk/press/2004071310yearinvestment.asp>
- [6] ”New Government Chief Scientific Adviser announced”, Press note, Prime Ministers Office, 5th October 2000, <http://www.number-10.gov.uk/output/Page2863.asp>

13.6 Source of information

This Chapter relies on official information from the UK Government and its departments that was available via the above-mentioned web sites. Especially information and opinions from the report cited in [2] and the respective government response [3] provided the base for the description. Additional information regarding potential participants in PASR and the national programmes were gathered via informal telephone conversations with officials at the TDST Directorate, the BNSC and the PSDB. Unfortunately, we were not able to receive an official answer to our questionnaire from the responsible authorities in the British Government.

14 Summary

This survey investigates the situation of nine EU member states in regard to the European programmes on security research and has been ordered by the Swedish Government working group on security research. The nine member states under investigation are: Austria, the Czech Republic, Estonia, Finland, France, Germany, Poland, The Netherlands, and the United Kingdom.

As an addition to the development of the Swedish strategy for security research, the survey should investigate how other European countries are preparing to develop the envisaged European “security culture”. The main goal was to provide a general picture of each government’s status, activities, and plans regarding security research. More specifically, the descriptions should have answered the following questions:

- Who, within Government, is responsible for security research on a national level respectively in regard to PASR and ESRP?
- What is the Government’s position in regard to a national security research strategy and security research programmes?
- Who are the main national actors within the national and the EU programmes on security research?
- Which role does industry play in the security field?
- What happens with the continuum between civil and defence research in the security area?

What we could not take up here are the preparations and developments that are going on in industry. Although industrial aspects are touched, the focus was clearly on governmental measures.

Potential participants in PASR and ESRP

The potential participants in PASR and ESRP are research organisations, companies, and also universities. In some countries, like Germany for example, also governmental agencies will contribute to the programmes. The importance of the different kinds of participants (research organisations, universities, companies, other governmental agencies, other institutions) is not clear and varies between the countries. It is clear, however, that in all countries investigated, defence-related research and also defence industry is strongly involved in the security research programmes (may be except Austria and Estonia, where defence industry is not so distinct). Furthermore,

Technological areas

almost all countries exhibit major participants from Information & Communication Technology and the Aerospace sector. Exceptions might be the Czech Republic and Estonia for which we received no explicit information. Other sectors, namely logistics and transport, bio- and chemical industry, consultancy, and the medical sector, were also mentioned.

All of the governments, except Estonia and the UK, are planning to especially support and encourage companies to take part in the PASR and ESRP. This support does most often mean the organization and dissemination of information via official channels, personal contacts and networks. Furthermore, Germany, Poland, and The Netherlands stated that they want to organize special information workshops and seminars, some of which will be hosted by intermediary organizations (like TNO, DLR, etc.). Austria, moreover, intends to set up a national security research programme that should complement PASR and ESRP and will provide companies with access to relevant research infrastructure and facilities. These Austrian activities, however, are not entirely targeted towards industry but should benefit other research groups, too. In general it can be suspected, though, that many of the above-listed activities do not differ significantly from support for other research areas in the European programmes. It should also be noted, that the UK Government apparently does not plan any supportive activities. Instead, some actions will probably be taken by the UK Trade Associations.

Does Government encourage industry to participate?

National responsibility in PASR and ESRP

Since security research touches many different policy areas, it is undecided in many countries, which ministry and which division should be put in charge of the actions regarding PASR and ESRP. Except Poland and the Czech Republic, most other countries stated that a final decision on responsibility has not been agreed. These decisions depend heavily on the final context the ESRP will be placed in, for example whether ESRP will be part of FRP 7, and which role defence-related research will be playing.

In the meantime, Austria, Finland, France, the Netherlands and the United Kingdom, are setting up (informal) cross-governmental working groups bringing together all ministries involved in security aspects. These working groups act as forums to co-ordinate the national positions regarding PASR and ESRP. The lead role, i.e. convening or driving the working group, is often taken by those ministries that have already been in charge of European research issues. Although it has not been said that there exists a respective working group in Germany, it is apparent that a dialogue between interested ministries is being initiated.

Cross-governmental working groups

By contrast, the responsibility for the PASR and ESRP policy in the Czech Republic respectively in Poland has already been assigned and rests with the

Ministry of the Interior (in close co-operation with the Defence Ministry) respectively with the Ministry of Research and Information Technology.

The Estonian position in PASR is so far taken care of by the Estonian Public Services Academy.

National activities in Security Research

While all of the nine countries have already devised national cross-governmental strategies on security, only Poland and the Czech Republic declared to have a national strategy on security research and also dedicated research programmes. In Austria, a dedicated strategy is under preparation as well as a research programme that should complement PASR and ESRP. In Germany the development of a security research strategy is under consideration but not the establishment of a related research programme.

National strategy and programmes

In fact, in all countries, including Austria and Germany, security research is so far taken care of in individual policy areas on the departmental level. A natural explanation is that in most of the countries, each ministry has its own research budget and issues its own research programmes according to its needs and strategies. These naturally reflect certain policy areas and often include security relevant aspects without making this explicit. Hence, security research is heavily fragmented and it is impossible to estimate the amount of money spent. It seems, however, that most of the countries realize a need for an overarching approach to security research.

Research by policy areas

Following from the above paragraph, the responsibility for security research on the national level typically rests with a number of different ministries, especially those ministries that are concerned with security-related areas, for example internal affairs, research, defence, economic affairs, transport, health, justice, etc. The Defence Ministries take up a special role here to which we will return later on in this Chapter.

Responsibility for Security Research

Putting the focus on security research requires considerable cross-governmental co-ordination efforts (may be except for the Czech Republic and Poland where responsibility for security research is already assigned to a respective ministry). While several countries, for example Austria, The Netherlands, and France, are in the process of establishing cross-departmental working groups, it is also known that the UK Government has established a huge cross-governmental programme on resilience, which should improve co-ordination of civil counter-terrorism research across Government.

Focussing on Security Research

Analogous to the European programmes, participants expected to play relevant roles in PASR and ESRP are in most cases major players in the national programmes, too. There are only few exceptions where, for example

Participants in the national programmes

in Austria, defence-related research institutes carry out defence research but do not compete on the open research market.

In none of the countries do funding schemes for security-related research differ significantly from funding schemes of other programmes.

Funding schemes

The role of industry in European security research is not clearly defined. While industry and especially the defence industry tries to get into the security market, it is often unclear whether the term “security industry” can already be applied (especially considering a definition of “industry” from which follows that “security industry” should be interpreted as a set of companies that sees its main business activity in the security area²¹). However, in the United Kingdom, for example, a security industry already exists and has its own association (BSIA) but spans a much broader range of products and services.

Security industry

Separation between civil and defence research

The divide between civil and defence research is clearly evident also in security research. Special government programmes to bridge this gap from the civil side do rarely exist. An exception is France, where approximately 200 Million Euro of the civil research budget (BCRD) are especially allocated for dual-use research in general. Although we have got the impression that civil aspects like health, citizen and infrastructure safety, respectively “homeland defence” prevail in security research, many defence-related actors from research and industry are trying to transfer their know-how into civil and security markets.

Mechanisms for exchange and collaboration

From a funding point of view, it is apparently also more common to bridge the continuum between civil and defence security research from the defence side. This means that institutions or companies carry out military research that also have relevant civilian activities and collaborations. Obvious examples for such a coupling are the defence-related institutes of the German Fraunhofer-Society (FhG) and the Netherlands Organization for Applied Scientific Research (TNO), which are both competing on the civil research market, too. But also the UK’s Defence Science and Technology Laboratory (DSTL) can be named, which is subcontracting 20% of its research in the CBRN²² area to companies and universities.

While these kinds of collaboration and exchange exist, it is nonetheless our impression that the overall divide is still strong, due to the fundamentally different requirements (and cultures) of the two sides. However, as several government and research representatives pointed out in our investigation,

Future trend of separation

²¹ cf. http://www.advfn.com/money-words_term_2447_industry.html

²² CBRN: Chemical, biological, radiological, nuclear

the fast-growing demand and the (increasing) development costs for dual-use technologies are seen as major indicators that collaboration between civil and defence R&D has to increase significantly in order to exploit synergies and to improve efficiency in the future. Whether “Security Research” will be a key factor in this process is not undisputed, however.

14.1 Literature

- [1] “On the implementation of the Preparatory Action on the enhancement of the European industrial potential in the field of Security research; Towards a programme to advance European security through Research and Technology”, Commission of the European Communities, Commission Communication COM(2004) 72 final, Brussels, 2004.
- [2] Research for a Secure Europe – Report of the Group of Personalities in the field of Security Research; Luxembourg: Office for Official Publications of the European Communities, 2003, ISBN 92-894-6611-1

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- The representatives from government and research who dedicated time and effort to answer the questionnaire and who spent additional time on the phone to clarify questions and to provide further background information.
- All people in the different ministries who were involved in answering the questionnaire but have not been mentioned so far.
- The members of the Swedish working group on security research

We also like to emphasize that we greatly appreciated the openness and interest with which our enquiry was met by the different governments and research organisations involved.

16 Appendix

16.1 Contact persons (December 2004)

Due to the fact that the responsibility for security research has not finally been decided in some of the countries, the following list of government contacts should be considered as provisional information.

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United Kingdom

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16.2 Abbreviations

ACR	Army of the Czech Republic
BCRD	French civil budget for research and development
BMBF	German Federal Ministry of Education and Research
BMBWK	Austrian Federal Ministry for Education, Science and Culture
BMI	German Federal Ministry of the Interior
BMLV	Austrian Defence Ministry
BMVg	German Federal Ministry for Defence
BMVIT	Austrian Federal Ministry for Transport, Innovation and Technology
BNSC	British National Space Centre
BSIA	British Security Industry Association
CBRN	Chemical, biological, radiological and nuclear

CEA	French Research Centre for Atomic Energy
CMI	Finnish Crisis Management Initiative
CNES	French National Research Centre for Space
COT	Institute for Safety, Security and Crisis Management, The Netherlands
DERA	British Defence Evaluation and Research Agency (now split into QinetiQ and DSTL)
DLR	German Aerospace Center
DSTL	Defence Science and Technology Laboratory (United Kingdom)
DTI	Department for Trade and Industry, United Kingdom
EGL	EG-Liasion, Netherlands national contact point for FP 6
ESRP	European Security Research Programme
FFG	Austrian Research Promotion Agency
FGAN	German Federal Research Establishment for Applied Science
FhG	Fraunhofer-Gesellschaft, Germany
FMW	Swedish Defence Materiel Administration
FOI	Swedish Defence Research Agency
FP	European Framework Programme
IT, ICT	Information (and communication) technology
KBN	Polish State Committee on Scientific Research
MARIN	Maritime Research Institute Netherlands
MATINE	Finnish Scientific Advisory Board for Defence
MEYS	Czech Ministry of Education, Youth and Sports
NBC	Nuclear, biological, chemical
NIID	Netherlands Defence Manufacturers Association
NIVR	Netherlands Agency for Aerospace Programmes
NLR	Dutch National Aerospace Laboratory
OST	Office for Science and Technology, DTI, United Kingdom

PASR	Preparatory Action on the enhancement of the European industrial potential in the field of Security research
PSDB	Police Scientific Development Branch at the UK Home Office
R & D	Research and development
R & T	Research and technology
RIVM	Dutch institute for public health and environment
RPV	Remote-Piloted Vehicle
SGCI	French Prime Minister Service
SGDN	French Prime Minister Service
TDST	Transdepartmental Science and Technology Group at OST, United Kingdom
TEKES	Finnish National Technology Agency
TNO	The Netherlands Organisation for Applied Scientific Research
UKISC	United Kingdom Industrial Space Committee
VINNOVA	Swedish Agency for Innovation Systems
VTT	Technical Research Centre of Finland

16.3 Questionnaire

	Questions / topics	Explanations / Comments	Answers
	<p>How does <country> prepare for PASR and ESRP?</p> <p>*PASR: Preparatory Action on "The enhancement of the European industrial potential in the field of Security Research" (PASR 2004). **ESRP: European Security Research Programme</p>		
A	<p>Financial and organizational conditions for the (expected) main participants from <country> (as provided by the Government)</p>		
1	Who are the expected main <country> participants of PASR/ESRP?	Universities, companies, research organisations (which ones?), ...	

1.1	How can they be categorized (in terms of funding and kind of research)?	Degree of funding from Government: fully financed – no basic funding Companies: type of industry
1.2	Are some of these related to defence research? Respectively, do you expect institutions from defence research to take part in PASR / ESRP?	Yes / No, names of institutions or companies
2	Is the Government trying (intending) to encourage companies to take part in PASR and ESRP?	
2.1	If “yes”, which measures are taken / resp. are planned?	Special workshops? National programmes?
3	Who is responsible for the <country> contribution to PASR and ESRP? (In regard to policy)?	Person, group, institutions
4	Does a national contact point or an equivalent exist for PASR/ESRP?	Person, group, institutions
B	Status and development of national activities concerning Security Research (Responsibilities, national strategy, research programmes, national security industry)	
1	Does a national strategy for “security research” exist? Respectively, is such a strategy in preparation?	Yes / No
1.1	Who is responsible for this strategy? (Resp. Where is the responsibility organizationally placed?)	Person, Group, Institution Main stakeholders
1.2	Which technological areas does the responsible body represent?	Aerospace, IT, Defence... ?
2	Do national research programmes exist that are explicitly dedicated to or explicitly include “Security Research”?	Yes / No, (if available number of programmes, names of programmes for future reference)
2.1	Who decides about establishing such programmes? Who decides about the budget? (Policy level) – just roughly without too much detail	Person, Group, Institution
2.2	Do separate responsibilities exist for security research on the civil side respectively on the defence side? (Policy level)	Yes, separate bodies / No (separate research budgets, too?)

2.3	(Estimated) overall budget for programmes dedicated to “security research”?	Absolute budget, <i>relative to general research budget, budget per citizen</i>
2.4	Is the budget for the mentioned research programmes coming from civil sources only?	Yes / No
2.5	Are the expected main actors in PASR/ESRP the same as in the national programmes?	Yes / No
2.5.1	Who are the (additional) main participants in the national programmes?	Universities, companies, research organisations (which ones?), ...
2.5.2	How can they be categorized (in terms of funding and kind of research)?	Degree of funding from Government: fully financed – no basic funding
2.6	What are the funding schemes within the security research programmes for the different main actors?	Amount of co-financing required from participants
2.7	Do funding schemes for these programmes differ from “ordinary” research programmes? (E.g. because R&D risks are higher? Restricted markets, different procurement procedures, ...)	Yes (in which regard?) No
2.8	Are the funding schemes going to be changed / updated in the foreseeable future?	Yes (in which regard?) No
<i>Which role is industry playing in the national programmes?</i>		
2.9	Is industry especially encouraged to take part in the national security research programmes?	Yes, by ... PR, interesting funding schemes, etc. / No
2.10	What are the funding schemes for industry participants?	Amount of co-financing required from company
2.11	Which industries (or technological areas) are the main actors in the national programmes (if relevant)?	Technological areas (IT, Aerospace, Manufacturing, Defence ...)
2.12	Do you think that a kind of national “security industry” exists in <country>? Does the Government programmes help to strengthen it?	Yes / No / Existed before In which regard?
3.	Are (new / additional) national research programmes on “Security Research” in preparation?	Yes / No?

3.1	What is the expected development in the future budgets of security research? (Comparing with today)	Increase, decrease Percentage of change
3.2	Is the responsibility for programmes or policy going to change?	Yes / No
3.2.1	Who will be responsible in the future?	Person, group, institution
C	Divide between civil research and defence research	
1	How strong is the separation between civil and defence research? Respectively, how closely are they coupled?	(Qualitative remarks)
1.1	Do dedicated defence research institutions exist in <country>?	Yes (which ones?) / No
1.2	What will be the future trend for the defence research institutions?	No change, stronger orientation towards civil markets, increase / decrease in employees, increased / decreased government funding?
1.3	Do mechanisms or research programmes exist to couple defence and civil research? (E.g. like the American DARPA)	Yes (which ones?) No
1.4	If programmes exist, what is their estimated budget?	(e.g. DARPA approx. 3 Billion USD per year)
1.5	How will these “mechanisms” develop in the future?	Increase/decrease in budget, new or additional programmes / mechanisms, stronger focus on dual-use-research, ...?
1.6	Do you expect that civil and defence markets will come closer together (e.g. because of budgetary reasons, dual-use products and services, ...)?	Yes / No (+ qualitative remarks)
1.7	Do you think that “Security” and “Security Research” are issues that will further such a development? E.g. further exchange of defence and civil research results? Open up the markets?	Yes / No (+ qualitative remarks) E.g. increased government spending on security services and products?