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European Countries National Security Research Policy Compared in the Light of FP 7 (v1.3)

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Mapping the European security research landscape

This paper is a first step in mapping the European security research landscape in comparative terms and presents intermediate results of ongoing analyses, providing food for thought for a European policy in support of EU member states' security-related research initiatives and programmes. It explores the potential for Europeanization, standardization or at least cooperation in a policy area that according to art. 4 para. 2 of the Treaty of Lisbon (2007) "remains the sole responsibility of each Member State". Therefore, while focusing on the national level, the study employs basic provisions from security research in the

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Seventh Framework Programme of the European Union (FP 7) as a reference point for a cross-national comparison. This ensures that the standards for comparing research programmes are explicit, not biased for or against certain national paradigms and not derived from a national, but from an overarching European level of analysis.

The study begins with identifying common, cross-national patterns in security research themes, then expanding to a comparative assessment of national modes of security research governance and methods to structure the occupation with transversal issues. After a look on which instances of international cooperation and standardization are foreseen in the national security research strategies under review here, the study develops a basic picture of the European security research landscape. It does so in a twofold way, focusing both on patterns of convergence and divergence on the level of national programme structures and on common patterns of research themes. These patterns of research themes are then contrasted with security research initiatives undertaken by European institutions and agencies.

The results among other things show that a couple of national programmes have a technology-driven focus that fits with research initiatives and preferences on the European level. However, the national and the European level diverge in the weight they put on different topical areas, and they do not always exhibit compatibility in security research governance methods. Thus, the scope for Europeanization that some national security research strategies entail is not very easily roofed by programmes developed on a European scale.

The findings presented here as well as the input data for the matrix analysis (fig. 2, p. 10) were gained through a structural qualitative comparison of national research programme documents from eight EU member states (Austria, France, Germany, Italy, Netherlands, Spain, Sweden, United Kingdom) and one FP 7 participating non-member country (Norway) along the four FP 7 vertical mission areas for Security Research (security of citizens, security of critical infrastructure, border security and crisis management)², expanded by an assessment of transversal security research activities, cutting across two or more of these mission areas.

The following security research programme documents were analyzed, covering all countries in the EU area that can currently be said to have a sufficiently elaborated security research strategy:³

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- 2 http://cordis.europa.eu/fp7/cooperation/security_en.html; somewhat more detailed is the standard Powerpoint presentation of the European Commission for FP 7, available at http://www.secure-force.eu/index.php?option=com_docman&task=doc_download&gid=9, esp. slides 6-11.
 - 3 This refers to a common view emerged in discussions among European security experts during relevant ESRIF working group meetings.

- Austria: National security research programme “KIRAS”⁴
- France: “Appels à projets 2008: Concepts Systèmes et Outils pour la Sécurité Globale”⁵
- Germany: “Research for Civil Security. Programme of the German Federal Government”⁶
- Italy: “The Italian Civil Protection National Service”⁷
- Netherlands: “National Security. Strategy and Work programme 2007-2008”⁸
- Norway: “National Guidelines on Information Security 2007-2010”⁹
- Spain: “The Spanish National Plan for Scientific Research, Development and Technological Innovation 2008-2011”¹⁰
- Sweden: “Knowledge to safeguard security. Proposals for a national strategy for security research”¹¹
- United Kingdom: “The United Kingdom Security & Counter-Terrorism Science & Innovation Strategy”¹²

4 <http://www.kiras.at>; see also: Security Research. Austria Innovativ, Special Edition, no. 3a/2008, http://www.kiras.at/cms/fileadmin/dateien/allgemein/Security_Research_2.pdf.

5 Agence Nationale de la Recherche: Appels à projets 2008: Concepts Systèmes et Outils pour la Sécurité Globale, <http://www.agence-nationale-recherche.fr/?NodId=17&lngAAPIId=188>.

6 Federal Ministry of Education and Research: Research for Civil Security. Programme of the German Federal Government. Bonn/Berlin 2007, http://www.bmbf.de/pub/research_for_civil_security_.pdf.

7 Presidenza del Consiglio dei Ministri – Dipartimento della Protezione Civile. The Italian Civil Protection National Service, http://www.protezionecivile.it/cms/attach/brochurepdc_eng2.pdf. This is not a security research programme document in its own, but it contains relevant information on how civil protection is based on technically scientific insight and seeks to engage with scientific research.

8 Ministry of the Interior and Kingdom Relations: National Security. Strategy and Work programme 2007-2008. The Hague, May 2007, <http://www.minbzk.nl/aspx/download.aspx?file=/contents/pages/88474/natveiligh.bwdef.pdf>.

9 Information Security Coordination Council (Koordineringsutvalget for forebyggende informasjonsikkerhet, KIS): National Guidelines on Information Security 2007-2010. Inofficial translation. [Oslo: December 2007], <http://www.nsm.stat.no/Documents/KIS/Publikasjoner/National%20Guidelines%20on%20Information%20Security%2007-2010.pdf>.

10 Comisión Interministerial de Ciencia y Tecnología: The Spanish National Plan for Scientific Research, Development and Technological Innovation 2008-2011, http://www.plannacionalidi.es/documentos/Plan_ingles_web.pdf.

11 VINNOVA – Swedish Agency for Innovation Systems, Swedish Emergency Management Agency, Swedish Armed Forces, Swedish Defence Materiel Administration, Swedish Defence Research Agency and Swedish National Defence College & Confederation of Swedish Enterprise: Knowledge to safeguard security. Proposals for a national strategy for security research. June 2005, <http://www.vinnova.se/upload/EPiStorePDF/vp-05-03.pdf>.

12 Home Office, Office for Security & Counter-Terrorism, The Counter-Terrorism Science Unit: The United Kingdom Security & Counter-Terrorism Science & Innovation Strategy. London 2007, <http://security.homeoffice.gov.uk/news-publications/publication-search/general/science-innovation-strategy1?view=Binary>.

Cross-national comparison of security research themes

The countries under review here tend to set clear nationally-informed priorities within the four mission areas for FP 7 security research, mostly with *cross-cutting themes* that combine mission areas 1 (security of citizen) and 2 (security of critical infrastructure): In the case of Austria, it is the theme of public authority measures (especially communication) that links the mission areas “security of the citizen” and “security of critical infrastructure”; in Germany it is transport; in Italy it is natural disaster prevention and disaster (risk) reduction; in the Netherlands it is the energy supply chain, as it is in Spain, together with biotechnology. Biotechnology is also the theme that overarches FP 7 mission area 1 and 2 themes in the Swedish security research programme, along with NRBC (nuclear, radiological, biological, chemical) detection and critical ICT (information and communication technology), based on network solutions. In Norway it is information security, especially in terms of secure access to information and secured accessibility of information. Only France and the UK were found to keep FP 7 mission area 1 and 2 topics relatively separate in their security research policy.

Research governance and management of transversal issues

Important dimensions of the comparative analysis of EU member states' security research programmes are the management of transversal issues (e.g. themes cutting across mission areas) as well as the general research governance approach: Is the emphasis on *coordination* at the national level (e.g. inter-agency) and on domestic use of research results, or is it on *standardization* at the transnational/European/international level? In the latter case, national security research either orients itself on international (or foreign national) standards or contributes to the development of common (European/international) standards, along with an internationalization of domestic security research (e.g. facilitation of access to international projects). Fig. 1 (p. 6) summarizes the related findings.

In Austria, transversality is confined to the national dimension and governed by the compulsory inclusion of aspects related to humanities, social sciences and cultural studies in all funding proposals handed in under any programme line of the security research programme. Management of transversal issues happens on a regular basis in the framework of a steering committee with representatives from all relevant ministries that is regularly convened by the Ministry of Transport, Innovation and Technology as the owner of the national security research programme. In France, transversality is also confined to the national dimension and governed by the joint issuing of the current edition of the national security research programme by the National Research Agency, the General Delegation for Armament and the General Direction of the National

Police. In Germany, the objectives and contents of the security research programme were defined jointly, involving the ministries of research, science and business. In Italy, the locus of governance is the state organization as a whole: The Civil Protection Department of the Presidency of the Council of Ministers involves and coordinates local, regional and central/national authorities, technical and scientific experts and operational entities. Coordination rests on a cognitive approach directed at comprehensive risk information and assessment, involving international import and export of scientific (technological) knowledge.

The “Strategy and Work programme” of the Netherlands on national security has among its objectives the establishment of international security networks and deems the national approach to be aligned of that of other nations and organizations. At the national level, the programme seeks to grasp contributions from the national government, local governments, the business community, social organizations and citizens. The programme is explicitly seen as an interdepartmental responsibility, with overall coordination in one ministry (Interior and Kingdom Relations). Norway, concentrating on information security, seeks to contribute to international development of standards with its security research activities, which are governed by the Information Security Coordination Council. In Spain the focus is on national innovation by dedicating research to cross-cutting themes, mainly in the field of critical information and communication infrastructure. Programme governance rests with the Inter-Ministerial Commission for Science and Technology. In Sweden the Emergency Management Agency governs security research and seeks international linkages in order to support industry participation in foreign (mainly U.S.) security research programmes. The UK seeks to explore transversality in order to strengthen bonds with U.S. government authorities, especially in terms of science and technology cooperation for critical infrastructure protection and homeland security as well as cooperation on combating terrorism that also shall include academia.

As for governance in the sense of operative research programme management, the analytical picture is patchy: In almost half of the countries analyzed (Austria, Germany, Netherlands, UK), the lead in security research (programme) management rests with a certain ministry (in two cases Interior/Home, in one case Science and in one Transport, Innovation and Technology). In some countries it rests with an inter-ministerial commission (Spain), with a governmental authority above ministerial lines (Italy) or with different agencies and authorities from the security sector (France). In other countries the lead is assigned a national emergency management agency (Sweden) or a coordination council consisting of members from ministries, directorates and government agencies (Norway).

	Austria	France	Germany	Italy	Netherlands	Norway	Spain	Sweden	UK
Method of governance	Coordination	Coordination	Coordination	Coordination	Standardization	Standardization	Coordination	Standardization	Standardization
Locus of governance	Ministry	Research agency	Ministry	State organization as a whole	Ministry	Inter-ministerial/inter-agency	Inter-ministerial	First-responder Agency	Ministry
Focus	National, pluralistic analysis	National	National/inter-ministerial	Local-regional-central link-up; import and export of scientific expertise	International link-up	Transnational	National/inter-ministerial	Cooperation with U.S.	Cooperation with U.S.
Responsibility	Ministry of Transport, Innovation and Technology; convenes Steering Committee with representatives from all relevant ministries	Agence Nationale de la Recherche in partnership with the General Delegation for Armament and the General Direction of the National Police	Ministry of Science	President of the Council of Ministers, Civil Protection Department	Ministry of the Interior and Kingdom Relations	Information Security Coordination Council; established by the Ministry of Government Administration and Reform, with members from seventeen ministries, directorates and government agencies	Inter-ministerial Commission for Science and Technology, with representatives from all ministries with an interest in science and technology	Swedish Emergency Management Agency	Home Office, Office for Security and Counter-Terrorism

Figure 1: Security research governance patterns compared

International instances of coordination

As already mentioned, international instances of coordination are not reflected in all national security research approaches under assessment here. Austria and France concentrate on domestic coordination and innovation. In a similar vein, Germany stresses that the European programme is not a substitute for member states' national programmes with their own focus and concentration on specific security requirements. Italy aims at importing and exporting technical-scientific knowledge for comprehensive risk assessment. In the Netherlands, in contrast, the need to line up with security research programmes and practices of other countries and organizations figures prominently. Norway underscores that standards for information security, the thematic focus of its security research programme, will be set by international standardization organizations, and Norway should actively participate in this work in order to affect the development of these international standards that will (have to) be nationally applied. Spain seeks to foster national innovation in security research also by improving the coordination of participation in international projects and facilitating national experts' access to international projects.

Sweden explicitly aims to facilitate participation in U.S. security research programmes, along with improving conditions for participating in the EU's security research programme. The UK stresses the sharing of experience and solutions with international partners, again the U.S. in the first place, as an important approach to strengthen national security in terms of combating terrorism.

Three-factor matrix: thematic thrust, concept of crisis management and transversal mode

Inferential reasoning on the basis of this precedent analysis revealed three common dimensions (factors) along which the nine analyzed national security research programmes can be adequately compared and “proximities” as well as “distances” between the nations assessed. These three dimensions (factors) are:

- 1) *Thematic thrust* (main subject area/s for security research in the light of threats and challenges identified on a national basis)
- 2) Leading concept of *crisis management* (prevention/preparedness vs. reaction/response)
- 3) *Transversal mode*: Management of cross-cutting issues and interoperability by standardization (orientation on same external norms and practices, e.g. from FP 7) vs. coordination (common/shared internal norm-setting and focus on efficient domestic alignment of relevant actors)

1) *Thematic thrust in the light of identified threats and challenges*

The majority of the national security research programmes focus on one leading theme that typically comes from an analysis of specific national requirements or shortcomings.

In the case of Austria, this is critical infrastructure protection (with the inclusion of social and cultural aspects). In the Netherlands it is climate change, as well as in Spain, together with nanoscience. In Germany’s programme, civil security research, or research on civil protection, is the leading theme. This is also the case in Italy, with the specific combination of strategic natural disaster reduction/enhancement of preparedness and rapid response civil protection action, both based on comprehensive risk assessment by real-time early warning and collection of (national and international) technical-scientific expertise. In Norway it is the role of private entities in critical (mainly information) infrastructure protection, including critical ICT social infrastructure. Network-based solutions in security affairs (with respect for ethics, integrity and human rights) are the main theme in Sweden, and the UK focuses on permanent cooperation with (also non-EU) partners in the fields of conventional crime/violence prevention and protection against terrorist attacks. What makes the French security research programme stand out in its thematic thrust is – in addition to critical infrastructure protection – again an emphasis on conventional crime and violence as well as on crisis management in a broad sense, independent from the source of origin (such as natural, man-made and others).

2) *Leading concept of crisis management*

While a clear concept of crisis management is not apparent in all national programmes, it is evident that tangible results for practical crisis management are a cornerstone of the European security research panorama. In the Austrian programme, the focus is on governance of capability-building for crisis prevention rather than on operative crisis management: Generating knowledge and technologies necessary to attain the goals of Austrian Security Policy (comprehensive approach) and contributing to increasing security and people's situation awareness. In France crisis management in terms of incident response is emphasized, but the additional focus on conventional crime/violence as well as on protection of vital infrastructures and networks gives the programme also a preventive dimension. In Germany, with its security research programme following a generic civil protection approach, capability building for prevention and capability building for response are equally emphasized.

Italy stresses comprehensive prevision and risk reduction, linking up local, regional and central (national) authorities as well as expertise from the technical and scientific side. The focus is on prevention is amended by a rapid-response component, providing the crisis management concept with an additional reactive dimension. The Netherlands concentrate on prevention in the sense of mitigation, or specifically, comprehensive vulnerability reduction (including the reduction of climate-change triggered crises, of potential for inter-ethnic confrontation and the assurance of electricity supply). Norway focuses on nurturing a culture of security in the sector of critical information and communication technology, thus also prevention is at stake. Security research in Spain centres on (mainly technological) innovation for resilience and response purposes, whereas crisis management as a term does not figure as a topic or strategic activity. From the Swedish point of view, security research should contribute to crisis management in the sense of civil protection and emergency management, which tends to make in response-focused. In the UK, security research contributions to crisis management aiming at preparedness and prevention, primarily in the face of terrorist threat.

3) *Transversal mode*

Management of cross-cutting issues and interdependency in security research happens at the level of a designated ministry in four of the nine examined countries (Austria, Germany, Netherlands and UK). This group of countries is however split in itself: Whereas Austria and Germany follow a coordination approach and have a national focus (pluralistic approach, inter-agency networking), the Netherlands and the UK practice standardization. That is, they are lining up their programme and research governance with international (Netherlands) or foreign (primarily U.S.) standards (UK). Two countries (Norway

and Spain) practise an inter-ministerial level of security research governance, represented by an inter-agency commission. However, whereas Norway follows a transnational standardization approach, Spain relies on national-level (inter-agency) coordination for managing transversality in security research. France has a unique locus of governance: the National Research Agency, which follows a coordination approach. In Italy security research governance happens at the level of the state organization as a whole: The Civil Protection Department of the Presidency of the Council of Ministers is responsible not only for linking up local, regional and central (national) organizations and expertise, but also for managing import (and export) of technical-scientific knowledge relevant for real-time risk evaluation and early warning. Italy thus applies a coordination approach that has, compared to other countries following such an approach, a strong vertical (local-regional-central plus acquisition of international expertise) dimension in addition to the common horizontal (inter-agency) dimension. In Sweden the Emergency Management Agency is responsible for security research governance. The locus of governance thus is the first-responder level, and the method is standardization – as in the case of the UK with a focus on foreign national (U.S) standards perceived as best practice.

There is no clear dominance of the governance method of standardization or the governance method of coordination. Four of the countries at stake here (all from the northern parts of Europe: Netherlands, Norway, Sweden and UK) are managing transversality by standardization (internationality), whereas five (all from the more southern parts: Austria, France, Germany, Italy and Spain) do so by coordination (inter-agency).

The matrix on the next page (p. 10, fig. 2) systemizes the findings in search for a *European security research panorama*. For each country, the “load” of each of the three dimensions (factors) is marked on a bi-variate extreme-type basis (with full/half box fillings representing the “strength” of the factor as present in the respective country’s security research programme):

<i>Dimension (factor)</i>	<i>“value” (extreme types)</i>
Thematic thrust	society-related vs. technical themes and subjects
Leading concept of crisis management	prevention vs. reaction preparedness vs. response
Transversal mode: Method of governance of cross-cutting issues/ interdependency	coordination (national, e.g. inter-agency) vs. standardization (international)

The strongest columns in the matrix (full boxes count 1, half boxes count 0,5) are technical themes (6,5) and prevention-orientedness in research for crisis management (6), whereas coordination – as just mentioned – is only slightly

stronger (5) than standardization (4). Thus, on a general level, it can be said that the national research programmes reviewed here in sum favour *technological solutions* to security problems (or at least focus on technological as opposed to societal security issues) and aim to increase *preventive* efforts, rather than the capabilities to respond to crisis events. However, there is no significant all-European preference on a specific mode of governance for security research, apart from the north-south divide mentioned above, with northern European countries practising (international) standardization and the others (national inter-agency) coordination.

	thematic thrust		crisis management		method of governance	
	society	technology	prevention	reaction	coord.	standard.
Austria						
France						
Germany						
Italy						
Netherlands						
Norway						
Spain						
Sweden						
UK						
filled boxes	3	6,5	6	3,5	5	4
no. of cases with which "X" is combined in the above lines	X		4	1	2	2
		X	5	4	4	3
	4	4	X		4	3
	1	4		X	4	1
	2	4	4	4	X	
	2	2	3	1		X
main quasi-correlation patterns						

Figure 2: National programme structures compared along three common big factors

A comparative counting (lower half of the above matrix) of the filled boxes reveals a couple of illustrative *associations* ("quasi-correlations") on an ordinal scale level (as the interest is in associations across categories, full and half boxes equally are counted as 1).

Both technology-centred and society-centred national security research programmes clearly tend to focus on preventive crisis management/disaster preparedness. The association between society-centredness and prevention is however considerably stronger as compared to technology-centredness and prevention, which are only slightly tighter associated than technology-centredness and reaction. Society-centred research themes are equally

associated with (international) standardization and with (national, inter-agency) coordination as method of (research) governance, whereas technology-centred research themes are more associated with (national, inter-agency) coordination as governance method than with standardization. Austria and the UK are special cases close to each other, as they both generically combine a societal with a technological thematic thrust and then focus this transversal thematic structure on prevention.

A standardization approach strongly goes together with prevention/preparedness, whereas a coordination approach to security governance is equally associated with prevention/preparedness and reaction/response. France, Germany and Italy are closest together on this analytical axis, all representing a coordination approach combined with a conception of crisis management that cuts across prevention/preparedness and reaction/response.

If standardization is applied as a governance method, it mainly focuses on prevention-related security research. Therefore, *prevention* obviously is a topic that the majority of the analyzed countries feel especially amenable to internationalization or at least orientation on common (international) principles, norms, regulations and practices. Preparedness (preventive crisis management) thus has the potential of becoming a European security research theme, even if preventive crisis management as a research focus is currently slightly more associated with coordination as governance method. The European potential is currently best represented in the security research approaches of the Netherlands, Norway and the UK, who may become an avant-garde group on this issue.

In contrast, *response* (reactive crisis management) will more tend to remain a *national security research theme*, as it is strongly associated with coordination as governance method (as well as with a technological thematic thrust). Germany, Italy and Spain are especially close to one another in the above analytical matrix in that they converge in their security research policies on a technology–response–coordination line.

Defining and meeting threats and challenges: “Belts” and “axes” of security research topics in Europe

As a further step towards picturing a comprehensive panorama, it can be concluded that there are seven bows/belts of European security research thematic governance emerging (see the below illustration): The *technology* (especially information and communication technology) bow from Spain to Sweden and Norway, the *climate change* bow from Spain to the Netherlands, the *border security* belt from Spain to France and Italy (here with a focus on rapid emergency response for refugees that is however domestically debated)

and the *transport and supply chain infrastructure protection* axis from Germany to Austria. Germany, Austria and Italy together make up for a *civil protection* axis, particularly combining critical infrastructure protection as a preventive measure with effective incident/disaster response aimed at restoring citizen security in times of crisis. Sweden and Norway could be said to represent a *communication infrastructure* thematic axis. France and the UK may be seen to form a *conventional threat/violence* thematic axis.

The southern part (in italics) of the countries addressed in this study rely on (national, inter-agency) *coordination* as the primary governance method, whereas the northern part follow an (international) *standardization* approach.

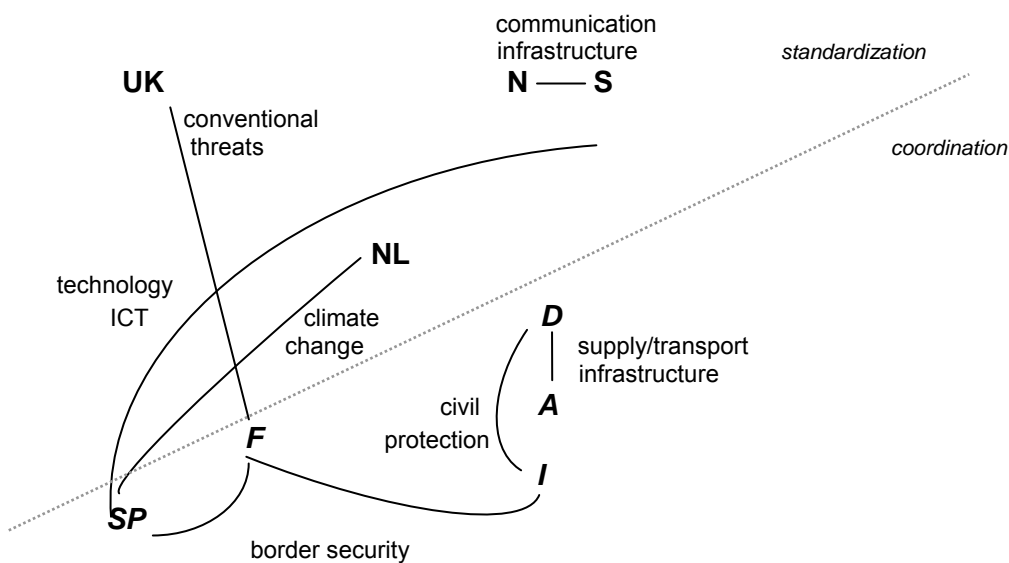


Figure 3: European thematic landscape of security research

This illustration (fig. 3) also shows that there are different clusters of perceptions of/occupation with security threats and challenges. No really cross-cutting patterns are visible on an all-nations scale, but overarching challenges addressed in almost every national research programme are threats to *energy supply* and *critical ICT infrastructure*.

Interestingly to notice, this thematic landscape also shows no direct match with the country groupings (Austria–UK, France–Germany–Italy, Germany–Italy–Spain and Netherlands–Norway–UK) identified in the three-factor matrix (fig. 2) on security research programme structures.

Challenges ahead

Given the split in approaches to security governance (coordination vs. standardization) and the majority focus on prevention and on technical solutions to security problems, it seems advisable to promote cross-national compatibility of security capabilities as well as standardization and certification through European and national bodies.

In such a context, the analysis presented in this paper can be carried further to include a comparison of national contexts of discovery for the threats and challenges that figure in the respective research programmes: Do EU member and FP7 participating states identify threats and challenges for security research following policy strategies (including policies of European integration), appreciating research results or rationalizing recent incidents etc.? The results of such a comparison will contribute to assess the potential for Europeanization of research-based building of security capabilities. It will also determine to which extent cooperation and standardization in this process can effectively draw from a multilateral, European level of reference or will rest on mutually agreed rules on a multinational level.

Another challenge in this respect is the orientation of security research undertaken or supported at the level of *European institutions and agencies* (such as European Commission/FP 7 Security Research as well as other FP 7 themes and other programmes;¹³ European Community agencies such as FRONTEX¹⁴; the European Defence Agency¹⁵; NATO¹⁶ and others) as compared to the national security research programmes at stake in the present study. Identified threats and challenges at the national and at the European level of research and research governance are currently more distinct than compatible.¹⁷

Whereas much of the national security research under assessment here converges on themes that fall in research topics corresponding to FP 7 mission areas 1 (security of citizen) and 2 (security of critical infrastructure), European institutions and agencies appear to be split on research topics that correspond to FP 7 mission areas 1 (security of citizen), 2 (security of critical infrastructure) and 4 (crisis management) topics. In topical areas related to the mission area "security of citizen," there is no clear picture at all given the predominance of generic institutional approaches. In topics corresponding to the mission area "security of infrastructure," European institutions follow divergent approaches,

13 See CORDIS: Community Research and Development Information Service: European Union Research Activities, <http://cordis.europa.eu/en>.

14 Cf. FRONTEX homepage, Information on research and development, http://www.frontex.europa.eu/structure/research_and_development.

15 Cf. Framework for a European Defence Research and Technology Strategy [November 2007], <http://www.eda.europa.eu/WebUtils/downloadfile.aspx?fileid=325>.

16 Cf. NATO Programme for Security Through Science, <http://www.nato.int/science>.

17 The following sum-up profited from a matrix by Daniel Grancher of THALES.

with some concentrating on operational prevention and preparedness (e.g. mass transportation security), whereas others are directing their efforts to information gathering and management (e.g. space surveillance). In the field of the mission area “crisis management,” while there is no common picture, a tendency exists to contribute to meeting challenges in mission support, such as software defined radio or material support to crisis management operations.

European institutions and agencies visibly converge in mission area 3 (border security) related topics, especially maritime surveillance and Unmanned Aerial Vehicles (UAVs). In national research programmes, *border security* as a research topic is not too much mirrored, apart from the southern border security “belt” formed by France, Italy and Spain.

Threats and challenges addressed throughout the research programmes of European institutions and agencies are *standardization*, especially in procurement and interoperability, as well as *intelligent surveillance*. This contrasts with the threat and challenge assessments that build the basis of national security research programmes, ICT and energy supply being the lowest common denominator here.

Development of and orientation on common (international) standards as area of convergence between European institutions/agencies security research programmes in the field of transversal issues only matches the preferences in national security research governance of four of the analyzed nine countries. The lowest common denominator of strategic objectives of security research at the *European* level – *standardization* and *prevention/preparedness*, considerably in terms of technological capability building (e.g. intelligent surveillance) – best fits with national security (research) objectives followed by the grouping of the Netherlands, Norway and the UK already identified above (p. 11). We will therefore be most likely to witness Europeanization in security research in this regional area.

For other countries considering joining in this possible avant-garde group but choosing to retain their focus on coordination (rather than standardization) as basic mode of security research governance, a concentration on research themes (threats and challenges) in the field of *technological capability-based preparedness* (surveillance, monitoring, comprehensive risk assessment) appears advisable in the light of the results of this study.

Summary of changes

Ver 1.0, 24 Jul 2008 – Initial release

Ver 1.1, 25 Jul 2008 – Minor conceptual clarifications; fixing of language and format issues

Ver 1.2, 14 Aug 2008 – Correction of para. 2 on p. 9, country groupings: coordination – standardization, correction of mistypes

Ver 1.3, 20 July 2009 – Correction of formal mistakes

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