

SECURITY RESEARCH IN THE NAME OF EUROPE

Nikolay Pavlov¹

The purpose of this paper is twofold. First, it will examine the political framework, societal and economical sources of security research in modern Europe. Special focus is put on the role of immature civil-military relations on EU level for the present dichotomy in the security and defense “continuum”. Secondly, the paper will present an algorithm for identifying security research and for distinguishing security research from research in other fields. To this end an overview of “the big three” taxonomies will be given – the taxonomies of NATO Research and Technology Organization (RTO), European Defence Agency (EDA) and the Security theme under EU Seventh Framework Programme (FP7).

Research in the area of war, defence and security was probably the first area of human scientific research in history. The need to protect the community from enemies and threats was one of the strongest motives for conducting research. Science came to life as science of war. Inventors such as Archimedes and Leonardo turned their talents to the problems of fighting. Most advanced technologies were developed to be implemented in war. Professionalized science and military professionalism developed in close connection under the auspices of the state (the most visible example being Prussia) in the 1800s. The connection between science and war became explicitly prominent in the period after World War Two when science became an essential part of military races and in many countries science became part of the national war system.¹

Security research in modern Europe is the result of complex organizational and bureaucratic transformation processes both in the European Union and NATO after the end of the Cold War. In this geopolitical context security research is moulded to great extent by three variables:

¹ The author is Bulgaria’s national contact person (NCP) for the Security theme under EU Seventh Framework Programme. This paper is prepared within the frameworks of the **SEREN 2** project (Security Research NCP Network – phase 2) under Grant Agreement No. 261814 with the European Commission. The paper is contribution to two Working packages (WP) of the project - WP 3 – Mapping of security research competences, and WP 5 – Monitoring of security research area.

- The complex relations between policy and research on EU level (including the influence of European Security and Defence Policy (ESDP) and Common Foreign and Security Policy (CFSP)
- The complex relations between industry and research (including the role of EU security industry and especially the aerospace industry)
- Complex civil-military relations on EU level – the lack of well-balanced and harmonized civil-military relations on EU level is the main structural cause for the division between security and defence research

An algorithm for identifying security research

From methodological point of view one of the significant achievements in connection with FP7 Security theme is the definition of the term “security research” that was given by the European Security Research Advisory Board (ESRAB) in its 2006 report. This report pre-determined the security chapter in FP7 and defined security research as ”research activities that aim at identifying, preventing, deterring, preparing and protecting against unlawful or intentional malicious acts harming European societies; human beings, organizations or structures, material and immaterial goods and infrastructures, including mitigation and operational continuity after such an attack (also applicable after natural / industrial disasters)”.² Although not very precise on the essence of “research activities”, this definition is satisfying in terms of clear description of the direction and the goals of security research. However, another methodological issue still remains unsolved – how to define the limits, the borderlines of security research; how to distinguish security research from research in other fields (e.g. ICT) and from activities which are not scientific research (e.g. consultancy or intelligence projects)?

A possible solution to this problem is an algorithm for identifying security research which includes a number of criteria as shown in the table below.

No.	Criterion	Description of the criterion	Relative weight of the criterion (in %)
C1	End-user and participants in the project	In a security research project the end-user (and sometimes a participant) should be an institution from the security sector - Ministry of Defence, Ministry of Home Affairs, Civil protection agency or intelligence services	30 %
C2	Subject matter of the project	The subject matter of the project should fall in one of the “big three” internationally recognized taxonomies – the taxonomies of RTO, EDA or FP7 Security theme.	30 %
C3	Source of financing	In some cases funding comes from the end-user but this is not always the rule. Funding for security research projects in Europe comes predominantly from: national security sector institutions and national security research programmes; European Commission FP7, Security or Space theme, DG Home Affairs or DG Humanitarian aid and civil protection; NATO Science for Peace and Security Committee. Although the list is not exhaustive, in case a project is funded by one of the abovementioned institutions the project fulfils the requirements of this specific criterion for security research	20 %
C4	The project team self-consciousness	This criterion pays attention to the psychological inclination of the project team. Although a matter of subjectivity, the team self-consciousness and confidence that it implements a security research project should be taken into account.	10 %
C5	Scientific degrees of project team members	This is an important criterion to distinguish security research projects from other types of projects (such as consultancy projects). In a security research project at least half of the core team should have scientific degrees (PhDs or higher).	10 %

Based on this table the following algorithm for security research (SECRES) could be presented:

$$\text{SECRES} = 0,3 * C1 + 0,3 * C2 + 0,2 * C3 + 0,1 * C4 + 0,1 * C5$$

In many cases projects would fulfil only some of the criteria for security research and they could be labeled as “60% security research”, “70 % security research” etc. This algorithm is a simple tool for identifying “real” security research which can be used on strategic policy level for planning, implementing and assessing results from research policies in the security and defense area.

Overview of “the big three taxonomies”

Research in modern Europe is essentially an administrative process. With regard to security research there are three main administrative bodies and their respective taxonomies. Chronologically, NATO Research and Technology Organization (RTO) came first in 1998 as NATO primary organization for defence science and technology. NATO RTO Research & development (R&D) taxonomy is reflected in RTO’s 8 Technology Panels and Groups:

- Applied Vehicle Technology (AVT)
- Human Factors and Medicine (HFM)
- Information Systems Technology (IST)
- System Analysis and Studies (SAS)
- Systems Concepts and Integration (SCI)
- Sensors and Electronics Technology (SET)
- Modelling and Simulation Group (NMSG)
- Information Management (IMC)

The European Defence Agency (EDA) came to life in the context of EU Common Foreign and Security Policy (CFSP). EDA was established in 2004 as an intergovernmental EU agency with special focus on European armaments cooperation and procurement (including R&D). EDA has developed a well-structured Technology taxonomy which includes 22 R&T priorities as follows:

- RF (radio frequency) generic technologies (components, processing, systems, integration) and multifunction RF technologies;
- EO (electro-optical) Systems & Integration;
- Electronics Hardware;
- Structural Modelling Design & Through Life Support;
- Networked sensor control, management and cueing;
- Command and control technologies (campaign /ops/ mission planning and mgt, battlespace mgt, shared situational understanding, data fusion / mining / reduction, image exploitation, innovative Sensors for Urban Warfare, including acoustic and seismic sensors);
- HF, VHF & UHF Communication Technologies;
- Waveform design, spectrum and bandwidth management;
- Network Management in NEC operations (Fault, Configuration, Administration, Performance & Security management);
- Technologies for secure and robust information management, information exchange and communications;
- Human integration and interoperability;
- Energetics & Energetic Materials;
- Soldiers Systems (incl. integration into Systems of Systems and NEC);
- Counter-mine (land), gap-crossing and counter-mobility systems;
- Power source and supply technologies;
- Ground Platform technologies (structure, mobility...) and mounted platform systems;
- Uninhabited land systems;
- Aerial platform technologies (airframes, propulsion, aerodynamics, structures, control... - incl. Helicopters, UAVs (incl. High altitude platforms);
- Environment definition (Oceanographic & hydrographic techniques and analysis);

- Uninhabited naval systems, especially underwater systems;
- Physical protection;
- Concepts, design, integration, simulation & modelling;

The third administrative body is DG Enterprise and Industry of the European Commission which is responsible for security (and space) research under EU Seventh Framework Programme (FP7). FP7 was the first framework programme to encompass security (and space) research. FP7 Security theme is structured in a taxonomy of 7 security missions as follows:

- Security of Citizens
- Security of Infrastructures and utilities
- Intelligent surveillance and border security
- Restoring security and safety in case of crisis
- Security and Society
- Systems integration, interconnectivity, interoperability
- Security research, coordination and structuring

This brief overview of the “big three” security research taxonomies demonstrates that it is hard to find interoperability and to make convergence between them. These taxonomies have their own “life history”, they are products of separate bureaucracies, different methodologies, differing lobbies and logic behind them. What they share in common is a highly specialized language (mostly from engineer sciences) and lack of civil society support on EU level. There is no involvement of civil society and grassroots people in defining the requirements for security research in modern Europe. The nations of Europe and European civil society as key stakeholders are missing. Security research is a secretive game for billions in a magic triangle with three players - security industry, security sector institutions and an amorphous expert community. And the Commission is just the All-Seeing Eye in this magic triangle.

Conclusion

The “heart and soul” of security research in modern Europe is missing. And given that it is a matter of research on EU level, the sources of legitimacy for security research could not be national. The ideological justification of security research on EU level could only be a supra-national concept such as the concept of Europe as an empire.³ Security research can exist and be viable only as research in the name of Europe.

As noted in a recent report, the European Union’s R&D potential is not being used to assert its international political role, in terms of either soft or hard power.⁴ Indeed, security research can no longer be only a market-oriented venture. In a world of permanent crises the two initial objectives of security research as set out in the ESRAB report in 2006 – security of the citizens and Europe’s competitiveness – should be complemented by a third one – the defence of the European homeland. The ultimate goal of security research is to produce tools for the defence of the European homeland, for the defence of the Union (in the geopolitical sense of an empire). And this can only be achieved by a new well-balanced and harmonized model of civil-military relations in the sphere of R&D on EU level that will unify security and defence research in the name of Europe.

¹ Brian Martin *Science and War* – In: Arthur Birch (ed.), *Science Research in Australia: Who Benefits?* (Canberra: Centre for Continuing Education, Australian National University, 1983), pp. 101-108.

² Meeting the challenge: the European Security Research Agenda (A report from the European Security Research Advisory Board), Luxembourg: Office for Official Publications of the European Communities, 2006; p.18

³ For the concept of Europe as an empire see: Julius Evola *Revolt against the modern World*, Rochester, Vermont: Inner Traditions, 1995

⁴ Security research in the European Union: evaluation of the Seventh Framework Programme (Report submitted on behalf of the Technological and Aerospace Committee by José Mendes Bota), Assembly of the Western European Union - Document A/2094, dated 1 December 2010, p.6