

# **SECURITY DYNAMICS SCOPING PAPER**

ONE PART OF DELIVERABLE 2.1

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**Content**

1	INTRODUCTION .....	3
2	Security and defence policy AND THE COLD WAR .....	4
	2.1. The traditional paradigm of security focuses on defence of the territory ....	4
	2.2. An armed Soviet attack was the main security threat .....	6
	2.3. The main threat was clearly discernable and attributable .....	7
	2.4. Defence dominated over security policy.....	8
	2.5. Defence was organized in a Transatlantic rather than European arena .....	9
	2.6. Technology was considered mainly as a means for security policy .....	10
	2.7. European countries established the European Union.....	11
3	WHAT ARE THE MAIN CHALLENGES/ISSUES?.....	12
	3.1. A number of trends have fundamentally altered the security environment	13
	3.2. Security challenges of the EU can be categorized in four types.....	18
4	WHAT ARE THE RESPONSES TO THESE CHALLENGES/ ISSUES? .....	25
	4.1. A new security paradigm is emerging .....	25
	4.2. At EU level governments pursue a policy mix to advance their security..	29
5	HOW ARE THE MAIN ORGANIZATIONS/INSTITUTIONS CHANGING?.....	43
	5.1. National governments continue to be the main security actors .....	43
	5.2. Governments established an ESDP “Council Machinery” .....	44
	5.3. Council Agencies support the cooperation of governments .....	45
	5.4. Commission has formulated policies affecting security and defence .....	46
	5.5. Lisbon Treaty implications for S&D policy are not yet discernable .....	47
6	WHAT ARE THE RELATIONSHIPS BETWEEN Security DYNAMICS AND THE OTHER THEMES?.....	48
	6.1. Policy goals and rationales.....	49
	6.2. Resource flows.....	49
	6.3. Organizational relationships .....	50
	6.4. Regulatory frameworks.....	51
	6.5. Membership of policy-making communities .....	51
7	WHAT ARE THE MAIN DRIVERS OF CHANGE IN RELATIONSHIPS? ..	52
	7.1. International system likely to become increasingly multi-polar.....	52
	7.2. New forms and dimensions of warfare are expected to emerge .....	53
	7.3. Divergent demographic developments may put EU at a disadvantage.....	54
	7.4. Widespread availability of new technologies may fuel proliferation risks	55
	7.5. Rising reliance of society on technologies may increase vulnerabilities...	56
	7.6. Rising significance of space for S&D policy may open up new frontier ..	57
	7.7. Climate change likely to exacerbate existing conflict situations .....	58
	7.8. Reduced public funds may shift priorities .....	59
	7.9. Competition for material and energy resources may rise tensions .....	59
8	Conclusion .....	60

## SCOPING PAPER

## SECURITY DYNAMICS

## 1 INTRODUCTION

In the following paper we will analyse European security dynamics. By “security dynamics” we mean changes that have occurred in the security environment of the European Union and in the European security and defence policy. We will focus on the period since the end of the Cold War, i.e. roughly since the beginning of the 1990s.

As our analysis is concerned with the security and defence policy (S&D) of European states a few qualifications are in order. First, though the creation of the European Union could be regarded as a means of S&D policy, we treat it here as an “environmental aspect”. Once the EU was established it offered its Member States an array of possibilities to cooperate on security and defence issues that had not been conceivable before. Second, we start our analysis from the perspective of Western European states. This concerns the brief review of the Cold War situation as well as the early years of S&D policy cooperation in the EU. The Union’s enlargement led to the inclusion of many Central and Eastern European states into the newly established S&D policy mechanisms. Finally, the analysis will be mainly concerned with changes at European i.e. EU level but take developments at national level into due consideration, as governments continue to be the main actors in S&D policy.

This paper is one of three Scoping Papers written for the SANDERA. SANDERA brings together a number of scholars from entirely different policy domains – S&D policy on the one hand, and policies to promote the European Research Area (ERA), on the other. These domains have had in the past very few and often hidden links. Hence, the main purpose of this paper is to bring all member of the SANDERA team on one level of understanding the state of affairs and its dynamics in the security and defence domain. Hence, it puts specific emphasis on issues of science and technology and on the links to the ERA.

The last twenty years have seen tremendous changes in the security environment of European countries. The most important concern the advent of globalization, i.e. a rising interdependence between states the appearance of new types of actors at the international scene, as well as the spread of new technologies upon which our societies increasingly rely for everyday life.

In the following we will argue that since the end of the Cold War European security and defence policy has undergone a paradigmatic shift. It has moved from focusing on territorial *defence* against an armed attack with conventional to nuclear forces to a much broader concern for *security* that is imperilled by a variety of new types of risks and threats. European governments have responded to these challenges with what is called a “comprehensive” approach to security and defence policy, complemented by a number of policies forged at EU level. They have set up numerous organizations to support their joint efforts, in which also the European Commission plays an increasing role. We will show that a number of rather hidden and implicit links exist from the perspective of Security and Defence Policy with the ERA and point to drivers that might potentially impact on these relations in the future.

Against this background, the aim of this paper is threefold: *first*, it intends to make intelligible the fundamental changes in the security environment since the end of the Cold War; *second*, it attempts to illuminate how the EU has developed as a new actor on the international scene with a dedicated policy in this area; and, finally, sketch out how these developments may affect the future relationships between security and defence (S&D) policy and the European Research Area (ERA). The latter will necessarily be done in a hypothetical manner, drafting first propositions that are to be further elaborated, qualified, and validated in the subsequent stages of the SANDERA project.

It is important to note that S&D policy that is still foremost defined by governments, with the EU providing a dense environment of coordination, interaction, and multiple means for common actions. Nevertheless, governments, especially those of the largest Member States, continue to play the central role. We have taken this fact into due consideration in our analysis, which focuses, however, at the developments at EU level.

The paper is structured in the same manner as the other SANDERA Scoping Papers and starts with a brief discussion about the historical background, in this case the security and defence policies during the Cold War. The paper continues by discussing the main challenges that S&D policy faces today, suggesting a typology of threats and risk to EU security. It then outlines the main reactions of the EU in conceptual and policy terms and discusses which institutions and actors are involved in the formulation and implementation of EU policies relating to S&D. The last two parts analyze the relationships between security and defence policy, on the one hand, and ERA and Knowledge Dynamics and the other by first outlining the links that exist from an S&D perspective and then analyzing the drivers that are most likely to impact on the relationship between S&D and ERA policies.

## **2 SECURITY AND DEFENCE POLICY AND THE COLD WAR**

The following section argues that during the Cold War the security and defence policy of Western European countries was dominated by a focus on defence issues, using technology as a major means to counter the well-known threats emanating from the Soviet bloc, under the leadership of the US within NATO. We will prepare our argument by a brief deliberation about the prevailing notion of security during the Cold War.

### ***2.1 The traditional paradigm of security focuses on defence of the territory***

In the broadest possible sense security is the condition of being secure, i.e. of being free from care, apprehension or anxiety.<sup>1</sup> Semantically, security has three

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<sup>1</sup> OED, 'Oxford English Dictionary', <[www.oed.com](http://www.oed.com)>, accessed 3 December 2006.

components: a subject (who or what could become anxious), a perceived danger or challenge, and a provider who is thwarting the danger and providing or generating the security.

The condition of being secure can be endangered as a result of something intended or unintended. If a danger arises as a result of unintentional events such as natural disasters or of unintended consequences of human action (“manmade disaster”), then we usually speak about security in terms of safety.<sup>2</sup> Manmade disasters can result from an operational failure of technical systems, as in the case of the Chernobyl accident; from random activity as in the case of pandemics such as swine flue spread by tourists.<sup>3</sup>

In addition to the intentionality of the danger, security can also be specified in terms of the origin of the danger – inside or outside a country. Traditionally, if the danger originated beyond the border of a state we would speak of “external security” associated with defence and if it came from inside the country we would refer to it as a challenge to “internal security” or simply “security”. This traditional notion is based on two assumptions: first, a danger can be clearly located; and second, that an effective defence of the territorial integrity of the state is the precondition for a secure and calm life within the borders of the state.<sup>4</sup>

These assumptions are deeply rooted in our history. In international politics security has traditionally been understood mainly in terms of “security of the state”, as the protection of persons, objects, societies, and their chosen order and way of life. Since the 17<sup>th</sup> century, security has mainly been associated with nation states, which had divided the territory of the continent and which brought to correspondence a people, a state territory, and a state power.<sup>5</sup> The state power claims vis-à-vis the people a monopoly on the legitimate use of force *within* the state territory and is faced by other states with a claim to the legitimate use of force *outside* its territory.<sup>6</sup>

Borders marked the distinction between inner and outer i.e. internal and external security. While the former was ensured by police and law enforcement authorities through preventive and reactive action including persecution and punishment, external security i.e. the protection of the realm, was incumbent upon military forces and intelligence services.<sup>7</sup> They act, according to international law, only reactively.

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<sup>2</sup> The ESRI intermediate report speaks of “civil security”, see Esrif, 'European Security Research and Innovation in Support of European Security Policies. Intermediate Report', (Brussels, 2008).

<sup>3</sup> Further below we will refer to the possibility that a virus is *intentionally* spread by terrorists, which would not be regarded merely as an issue of safety. This example illustrates how the boundaries between the traditional distinctions regarding SECURITY have become blurred.

<sup>4</sup> Stephan Böckenförde, 'Sicherheitspolitischer Paradigmenwechsel Von Verteidigung Zu Schutz', *Europäische Sicherheit*, 8 (2007), 29-30.

<sup>5</sup> Werner Conze, 'Sicherheit, Schutz', in Otto Brunner, Werner Conze, and Reinhart Koselleck (eds.), *Geschichtliche Grundbegriffe* (Stuttgart: Pro-Soz, 1984).

<sup>6</sup> Andreas Osiander, 'Begriffsgeschichte: Sicherheit, Frieden Und Krieg', *AMI*, 5/13-35 (1998).

<sup>7</sup> It should be noted here that some intelligence services of Western countries have not only been involved in gathering information but also in covered operations against other countries. For a discussion see, for example, Tim Weiner, *Legacy of Ashes: The History of the Central Intelligence Agency* (New York: Random House, 2007).; Joseph Trento, J., *The Secret History of the Cia* (Roseville, CA: Prima Publishing, 2001).; Douglas Porch, *The French Secret Services: A*

Borders clearly marked the legitimate extent of a state's power and demarked the space of potential conflicts constellations, which were symmetric in terms of types of adversaries, weapons, the methods to use these weapons, and the threat of military action.<sup>8</sup>

## **2.2 An armed Soviet attack was the main security threat**

During the Cold War – roughly from 1950 until 1990 – the international system was characterized by the global confrontation between the American and Soviet superpowers.<sup>9</sup> Though this bipolar conflict had also ideological, economic, and technological dimensions, it was the military aspect that was most imposing. The main challenge to the security of Western European countries was considered to be a military conflict with the countries of the Soviet bloc. Such a conflict would see the use of conventional or nuclear forces in order to conquer and occupy the territory of the adversary, which was considered to be the main threat to Western European security.

There were other threats too, such as military and political conflicts stemming from the de-colonization process or domestic terrorism but they were overshadowed by the threat of the Soviet arsenal. Though the de-colonization process involved some European countries such as France, Portugal, Belgium, or the UK in military conflict, they were repeatedly considered as part of the global Cold War struggle and often had only a political rather than a security effect on Western European countries. What became apparent, however, was that new actors appeared on the world scene, such as guerrilla movements, freedom or resistance fighters. While some of them shared the communist ideology, they mainly operated along national lines.

Thus, nation states remained for much of the Cold War the exclusive actors on the international stage. Among them, a clear hierarchy with defined relationships and status (superpowers, regional powers, nuclear club, space club etc.) emerged; with international law and rules guiding the interaction, and the United Nations and other international organizations facilitating cooperation among states in particular issue areas such as the exploitation of the seas or the promotion of international trade. These economic or environmental issues of international relations were left outside the debates on security, which was almost exclusively perceived in terms of military security.

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*History of French Intelligence from the Drefus Affair to the Gulf War* (New York: Farrar Straus & Giroux, 1996).; Stephen Dorril, *Mi6-Fifty Years of Special Operations* (London: Fourth Estate, 2000).

<sup>8</sup> The following draws on Böckenförde, 'Sicherheitspolitischer Paradigmenwechsel Von Verteidigung Zu Schutz', (

<sup>9</sup> See, among others, Kenneth N. Waltz, *Theory of International Politics* (New York: Random House, 1979).

### 2.3 *The main threat was clearly discernable and attributable*

The military threat during the Cold War was clearly discernable in terms of space, time, quality and quantity, and they were clearly attributable:

- In terms of space Western European the main concern was a Soviet attack at the dividing line between NATO and the Warsaw Pact in Central Europe, particularly in the North German plain. Proxy-wars of the superpowers fought in Africa, Latin America, and Asia were a minor concern for Western European security and defence policy makers, as conflicts in these far away regions were seen through the prism of the global balance of superpowers and had little effect on the prosperity, stability, let alone security of Western European countries.
- The time dimension of security was marked by predictability and long-term thinking. The time needed to mobilize conventional military forces to attack the opposite camp in Europe was predictable, as far as the time necessary to organize the reaction, and object of constant monitoring by the intelligence. Both alliances had meticulously planned their attacks and counter-attacks and rehearsed them in numerous exercises. At the same time, the Cold War confrontation between the superpowers required them to prepare their militaries and economies in a long term perspective, as both were engaged in a technological and numerical arms race. The UK, France, and Germany adopted long term military and defence industrial strategies which remained substantially stable during the Cold War, albeit all with a different emphasis.<sup>10</sup> The British governments had traditionally attached great importance to the “special relationship” with the US<sup>11</sup>, in order to maintain the American commitment in Europe against a Soviet invasion and gain more influence on the international stage than the country could exert on its own.<sup>12</sup> The French government placed higher emphasis on autonomy and independence from the US; and Germany saw military and defence industrial cooperation as a means for rearmament and for gaining influence.
- Regarding quality and quantity the Cold War threats were visible, measurable, and predictable; hence, there was an expectation that they could be deterred.<sup>13</sup> For instance, the Soviet nuclear warheads which targeted Western Europe were “visible” as far as Western governments and public opinion were aware of their existence and consequently considered them a threat. In this sense there were few “unknown unknowns” as each side knew the type of information that was relevant to assess the threat, and could largely obtain it through intelligence. They were “measurable” because it was possible to calculate, by large, how many warheads

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<sup>10</sup> Edward A. Kolodziej, *Making and Marketing Arms. The French Experience and Its Implications for the International System* (Princeton, New Jersey: Princeton University Press, 1987).; Hedley Bull, 'Civilian Power Europe: A Contradiction in Terms', *Journal of Common Market Studies*, 21/1-2 (1982), 149-65.

<sup>11</sup> J. Dumbrell, 'The Us-Uk Special Relationship: Taking the 21st-Century Temperature', *The British Journal of Politics and International Relations* 11/1 (2009).

<sup>12</sup> A. B. Shearer, 'Britain, France and Saint Malo Declaration: Tactical Rapprochement or Strategic Entente?' *Cambridge Review of Institutional Affairs*, 13/2 (2000).

<sup>13</sup> For a comparison of Cold War challenges and current ones in terms of “threats” and “risks” see, among others, Christopher Coker, 'War in an Age of Risk',

the USSR could launch and how, what kind of damage could they provoke to Western countries, etc. They were “predictable” because both the US and USSR developed a common understanding of the use of nuclear weapons, for example they knew that a first nuclear strike was not able to entirely destroy the enemy’s arsenal and thus would cause a retaliation. Faced with the threat of mutual assured destruction (perhaps not ironically abbreviated as “MAD”), the US and the USSR agreed in 1972 to limit their missile defence systems. By assuring the other side of the possibility to destroy one’s own territory both sides maintained a balance of deterrence.

- Finally, the threats of the Cold War could be clearly attributed to an adversary who could be targeted with punitive action. In the Cold War the adversary at large was another state, a superpower with its allied countries, with territories, populations, assets that could be threatened with destruction. This constellation was necessary for deterrence to work effectively. However, as the United States and later the Soviet Union had to learn guerrilla wars such as in Vietnam or Afghanistan run counter to this rationale and challenged not only the moral authority of the superpowers but also the effectiveness of their technological warfare and the corresponding doctrine and tactics.

In sum, during the Cold War the threat was highly predictable and portrayable due to the symmetry of both sides, the requirement of certain transparency for deterrence to be effective, the fact that it could be attributed to another state or group of states, and because the sources of the threat i.e. weapons and forces could be directly observed and counted.

## **2.4 Defence dominated over security policy**

Given the immediate threat of military invasion and/or nuclear annihilation, the defence of the realm with military forces had a higher political priority than internal security. That does not imply that threats to internal security did not exist. Thus, threats to internal security arose from within Western European societies. European countries like Germany, Great Britain, Italy and Spain had been experiencing for many years the terrorist threat posed by groups such as *Rote Armee Fraktion* (RAF), Irish Republican Army (IRA), *Brigadi Rossi*, and *Euskadi Ta Askatasuna* (ETA) respectively. Regardless their specific motivation of these organizations, the activities of such groups can be included in the definition of terrorism as the sub-state application of violence or threatened violence intended to sow panic in a society, to weaken or even overthrow the incumbents, and to bring about political change. In comparison to the new terrorism we face today, In addition, during the Cold War European internal security has also faced the challenge of organized crime exploiting illegal activities such as the drug trade.

Moreover, internal security measures were also taken as a part of the defence against external threats. Most countries set up civil protection agencies and prepared their population with measures and drills for the consequences of an armed attack with radiological, biological, or chemical weapons expected by the Eastern adversary. These measures were at the same time a contribution to the safety of citizens, as they prepared the population for actions in case of a major technical accident.

However, despite of the importance of these challenges to internal security, during the Cold War defence policy had always been receiving more funds, manpower and

political attention than security. In face of the perceived Soviet threat standing armies were maintained and equipped with the most sophisticated weapons systems to counter that threat. That required significantly more funds than training and supporting police forces. Hence, defence budgets in Western Europe usually exceeded the ones assigned to the Ministry of Interior. Similarly, European Defence Ministers had had a forum to meet – be it within the Western European Union (WEU) or NATO – and consult with each other, long before the Ministers of the Interior of the members of the European Communities started meeting.

## **2.5 Defence was organized in a Transatlantic rather than European arena**

Another feature of the Cold War was that the defence of Western Europe was organized through NATO, i.e. through a transatlantic rather than European organization.<sup>14</sup> The attempt of six Western European countries to set up a European Defence Community (EDC) with “comprehensive management and administrative system for an integrated, multinational military force and the supranational political machinery to control it”<sup>15</sup> had failed in 1954. Since the Treaty on European Economic Community too, gave its signatories a possibility to deviate from Treaty rules for reasons of national security, security and defence policy remained until the end of the Cold War under the exclusive responsibility of European governments.<sup>16</sup> Every state pursued its own security and defence policy, which was, however, coordinated within NATO.

Through the North Atlantic Treaty the United States de facto underwrote Western European defence (Article 5<sup>17</sup>), a guarantee that was further buttressed by political coordination through the North Atlantic Council, integrated military command,

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<sup>14</sup> Few European states (Finland, Ireland, Austria and Switzerland) pursued a policy of formal military neutrality but leaning de facto towards the West.

<sup>15</sup> Edward Fursdon, *The European Defence Community: A History* (London: Macmillan, 1980).

<sup>16</sup> Article 296 of the Treaty states: “1. The provisions of this Treaty shall not preclude the application of the following rules: (a) no Member State shall be obliged to supply information the disclosure of which it considers contrary to the essential interests of its security; (b) any Member State may take such measures as it considers necessary for the protection of the essential interests of its security which are connected with the production of or trade in arms, munitions and war material; such measures shall not adversely affect the conditions of competition in the common market regarding products which are not intended for specifically military purposes.” Treaty Establishing the European Community - Consolidated Version C 325 of 24 December 2002', (updated 1957) <<http://eur-lex.europa.eu/en/treaties/index.htm>>, accessed 7 January 2004.

2. The Council may, acting unanimously on a proposal from the Commission, make changes to the list, which it drew up on 15 April 1958, of the products to which the provisions of paragraph 1(b) apply.

<sup>17</sup> Article 5 states: “The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that...each of them...will assist the Party or Parties so attacked by taking forthwith...such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.” Nato, 'The North Atlantic Treaty, Washington D.C. - 4 April 1949', <[http://www.nato.int/cps/en/natolive/official\\_texts\\_17120.htm](http://www.nato.int/cps/en/natolive/official_texts_17120.htm)>, accessed 1 November 2009.

deployment of large scale conventional forces and by extending the nuclear deterrent of the US to its allies. While many governments relied on American capabilities and leadership, relations between the US and its partners were at times controversial. For example, France withdrew from the integrated military command in 1966, also to pursue a more independent defence role. US administrations repeatedly urged Western European governments to spend more on defence so as to shoulder a more equal burden sharing without considering a joint leadership of the Alliance. In order to coordinate their positions vis-à-vis the US, Western European countries established two forums within NATO, the Eurogroup (1968) and the Independent European Programme Group, IEPG (1976). The latter provided an opportunity for governments to discuss and devise policies to cooperate on armaments procurement, including collaboration on defence research and development.<sup>18</sup> Another aspect that clouded Transatlantic relations at times was the fact that the US had become the most important arms supplier to those Western European countries that did not develop an own Defence Industrial and Technology Base (DITB), while US market remained largely closed for European firms. These debates have re-occurred ever since the beginning of NATO and formed the background against which the Alliance evolved after the end of the Cold War.

## **2.6 Technology was considered mainly as a means for security policy**

As discussed in some detail in the Knowledge Dynamics Scoping Paper, the Cold War witnessed the evolvement of an intimate relationship between the scientific and technological community in industry and universities and the military, amounting to what has been called the “military industrial scientific complex”. It should, therefore, suffice here to say that technology was a concern for security policy mainly in terms of a means to achieve superiority over the adversary and was considered less of an issue undermining the own security.

During the Cold War technology has been *mainly* regarded by security policy makers as one source to furnish the means for security.<sup>19</sup> Technology was used to manufacture weapons or build protection mechanisms in order to shield a territory, certain objects, or a particular population against threats and harms. Higher levels of standards of science and technology were associated with higher levels of security. As the Knowledge Dynamics Scoping Paper shows, a dedicated science and technology policy since 1945 has been directed at channelling the efforts of various sciences into the endeavour of national security. Particularly, in the last century states have initiated expensive scientific and technological programmes mainly as a result of their perception of the importance of specific knowledge for their national security the

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<sup>18</sup> At the end of 1992 the functions of the IEPG were transferred to the WEU, where its matters were subsequently handled by the Western European Armaments Group (WEAG) within the framework of the WEU. Nato, 'Nato Handbook', <<http://www.nato.int/docu/handbook/2001/index.htm>>, accessed 15 May 2004.

<sup>19</sup> At the same time, as argued in the Knowledge Dynamics Scoping Paper, science and technology have shaped the way of looking the world and coping with its problems, including its security challenges. See, for example, Martin Van Creveld, *Technology and War: From 2.000 B.C to the Present* (London: Brassey's, 1992).

development of the nuclear bomb, of intercontinental delivery systems or the exploration of space being prominent examples.<sup>20</sup>

The results of science and technology themselves were regarded as a threat only at the hands of an adversary or in terms of a failure of an application operating on the basis of a technology. As to the first threat (or rather risk), Western countries sought to control the access of the Soviet Union and its allies to security sensitive technology. In 1949 the Coordinating Committee for Multilateral Export Controls (CoCom) was established as the international framework, under the US leadership, devoted to manage and implement this embargo. The CoCom also came to include products and technologies originally created for civilian purposes but able to develop or improve military capabilities.<sup>21</sup> The strategic goal was to weaken both the economic and military capabilities of the USSR, and to maintain a significant technological advance in favour of NATO members.

## 2.7 European countries established the European Union

The security situation of all European countries has been transformed by the decision of Western European governments to establish the European Union and by the subsequent joining of Eastern European countries to join the Union. Beginning in 1992 Western European countries converted themselves from a Single Market into a union of states. *Internally* the European Union shed national borders expressed by the four freedoms, most tangibly expressed by the Schengen Agreement allowing passport free travelling between 25 EU countries.<sup>22</sup> Should the ERA vision come true the four freedoms will be complemented by a fifth freedom, of knowledge.

In its *immediate external* environment, the Union is surrounded by a ring of countries in the East, South East and South to which the EU entertains special relations.<sup>23</sup> The “neighbourhood countries” are linked to the EU by a number of special policies. The borders to them are guarded by forces of individual countries, which are, however, coordinated by EU agencies FRONTEX or EMSA, which are discussed further below.<sup>24</sup>

Relations of the European Union to the wider world are structured by “strategic partnerships” with other important global actors such as the United States, Russia,

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<sup>20</sup> J. Moltz, *Politics of Space Security, 1957-2007: Strategic Restraint and the Pursuit of National Interests* (Stanford: Stanford University Press, 2008).

<sup>21</sup> F.R. Grimmett, *Military Technology and Conventional Weapon Export Controls, the Wassenaar Arrangement* (Washington: Congressional Research Service, 2006).

<sup>22</sup> While Ireland and the United Kingdom opted out of Schengen's border control arrangements they participate in certain provisions relating to judicial and police cooperation.

<sup>23</sup> Jean F. Crombois, 'The Enp and Eu Actions in Conflict Management: Comparing between Eastern Europe and the Maghreb', (*Perspectives. Review of International Affairs*, 2 (2008), 29-51).

<sup>24</sup> For a discussion of the relations to different countries see the different section in Nicola Casarini and Costanza Musu, *European Foreign Policy in an Evolving International System* (Houndsmills, Basingstoke, Hampshire and New York: Palgrave, 2007).

China, India but also NATO and Africa.<sup>25</sup> In the diplomatic realm the Union adds to the foreign relations of its Member States but in the trade and development realm it represents them as one bloc. This development has formed part of the background against which EU Member States decided in 1998 to launch a Common European Security and Defence Policy (ESDP).

### 3 WHAT ARE THE MAIN CHALLENGES/ISSUES?

Since the end of the Cold War the security environment for European countries<sup>26</sup> has fundamentally changed: while the Soviet military threat has vanished new threats have appeared and, more importantly, European states face a new type of security risks.

Let us begin by noting the things that have not or only mildly changed: the defence challenge. The Soviet threat has receded after the implosion of the Soviet Union and the withdrawal of Soviet troops from Central and Eastern Europe at the beginning of the 1990s.<sup>27</sup> Hence, the threat of a military attack by an armed aggressor in order to occupy the territory of European states is much less likely today than it was during the Cold War period.<sup>28</sup> Nevertheless, the task of territorial defence and of deterrence remains an important, albeit less likely task of European militaries and of NATO. We will see further below how even defence challenge has changed in face of the creation of the European Union and its enlargement.

Most significant for the security of European states and societies has been the emergence of new security challenges such as the security of infrastructures, of energy, or of transportation in addition to the traditional defence challenge.<sup>29</sup> These security challenges stem from a variety of reasons.

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<sup>25</sup> The term “strategic partnership” is used in different ways in EU documents, meaning special relations with other states, but also organizations and aspects of international relations such as “peace and security” or “democratic governance and human rights”.

<sup>26</sup> In the following we will speak of European countries meaning, if not explicitly stated otherwise, the EU Member States. We are conscious of the fact that EU membership has varied over time.

<sup>27</sup> For a thorough discussion of the relevant literature see Marius Schneider, *Sicherheit, Wandel Und Die Einheit Europas. Zur Generativen Rolle Von Sicherheitsdiskursen Bei Der Bildung Zwischenstaatlicher Ordnungen Vom Wiener Kongress Bis Zur Erweiterung Der Nato* (Opladen: Leske+Budrich, 2002).

<sup>28</sup> In the early 1990s the euphoria about this fact inspired some observers to speak of an end of history and to foresee instead of a struggle of nation states one of entire civilizations. These debates were triggered by Francis Fukuyama, *The End of History and the Last Man* (New York: Free Press, 1992). and Samuel Huntington, 'The Clash of Civilizations?' *Foreign Affairs*, 72/3 (1993). respectively.

<sup>29</sup> See, for example, Esrab, 'Meeting the Challenge: The European Security Research Agenda. A Report from the European Security Research Advisory Board', (Brussels, 2006).; Bastian Giegerich and Raffaello Pantucci, 'Foresec Deliverable 2.4 Synthesis Report', (2008).

### 3.1 A number of trends have fundamentally altered the security environment

#### 3.1.1 Globalization increases interdependence

First, the world has become increasingly interdependent in terms of trade flows and communications. As a result territorial borders are more porous, as they can be crossed faster and easier involving less control of goods, capital, and people. Moreover, new types of links between different parts of the world that did not exist or not to that extent until the end of the Cold War: financial, communication, air travel and cargo transportation links overcome the former large distances and create a new quality of interaction and interdependence.<sup>30</sup>

As a consequence the dangers, conflicts, or instabilities in regions located in the European neighbourhood but also further away can impact European security, as the instabilities are transmitted to Europe directly or indirectly and very quickly.<sup>31</sup> Furthermore, due to its high degree of integration into the world economy, Europe has a specific interest in the security of the global communication infrastructure and transportation routes, access to markets as well as supplies of energy and raw material.<sup>32</sup> Especially, improved global transport has accelerated the diffusion of pandemics and made disease control more difficult.

#### 3.1.2 Increased dependence on technology

The increased interconnectedness has been enabled by a development and broad use of new technologies, especially for transportation, communication, and information exchange.<sup>33</sup> The Knowledge Dynamics Paper notes how new functional threats have emerged from the growing dependence of modern society on technologies, e.g. interconnected infrastructures in transport, energy, information and other fields.<sup>34</sup>

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<sup>30</sup> A very succinct and influential characterization of the globalized world can be found in Thomas Friedman, *The World Is Flat. A Brief History of the Twenty-First Century* (New York: Farrar Straus & Giroux, 2005).

<sup>31</sup> Council of the European Union, 'A Secure Europe in a Better World. European Security Strategy.' (updated 12 December 2003) <<http://register.consilium.europa.eu/pdf/en/03/st10/st10881en03.pdf>>, accessed 21 May 2007.; Bundesministerium Der Verteidigung, 'White Paper 2006 on German Security Policy and the Future of the Bundeswehr', <[http://www.bmvg.de/portal/PA\\_1\\_0\\_LT/PortalFiles/C1256EF40036B05B/W26UWAMT9951NFODE/W+2006+eng+DS.pdf?yw\\_repository=youatweb](http://www.bmvg.de/portal/PA_1_0_LT/PortalFiles/C1256EF40036B05B/W26UWAMT9951NFODE/W+2006+eng+DS.pdf?yw_repository=youatweb)>, accessed 15 November 2006.; European Defence Agency, *An Initial Long-Term Vision for European Defence Capability and Capacity Needs* (Brussels: EDA, 2006) at 7.

<sup>32</sup> European Defence Agency, *An Initial Long-Term Vision for European Defence Capability and Capacity Needs* at 7.; Bundesministerium Der Verteidigung, 'White Paper 2006 on German Security Policy and the Future of the Bundeswehr',

<sup>33</sup> While the change in technology and knowledge are considered in the Knowledge Dynamic Scoping Paper, we look here merely at how technological developments have contributed to the new security environment.

<sup>34</sup> The following draws on the results of the work of the FESTOS project, financed by the EU FP7. It deals in particular with the security implications emanating from the abuse of emerging

Also the everyday activities of companies and individuals are more and more dependent on technologies. They are embedded in infrastructures that link formerly separated national infrastructures such as electricity, railway, and telecommunication networks.

A breakdown in one part of these interconnected systems has serious repercussions in other part with potentially serious consequences for economic performance and public order. In case these critical infrastructures are attacked, it is challenging to identify the country or space from which the attack originated and to determine who would be responsible for taking action against the attacker, as different jurisdictions apply, which might involve different types of offices ranging from police, over intelligence to the military. In some cases such as biological viruses the identification of the source does not necessarily help to mitigate the negative effects, as the control of the spread pattern and public relations become after a short while more crucial for successfully providing security.

### **3.1.3 Global communications raises awareness of global threats**

Since the end of the Cold War mass communication has achieved a global reach and has penetrated Western societies to a larger extent than ever before, creating an increased awareness of global insecurities. The media has also become more diverse – adding the internet with its various media applications to the traditional paper, radio and TV media. Nevertheless there are a number of mass communication media with global reach such as the news networks CNN or BBC Worldwide or with regional reach such as Al Jazeera. These media provide news, pictures, and interpretations for twenty four-hours a day.

The significance of this change for security is manifold. Instant media coverage increases the pace of decision-making and reduced the time-lag between action and reaction. Permanent observation by the media means that decision-makers have to take the perception of their actions by domestic and international audiences into account, as images of European soldiers dying in Afghanistan can immediately reach British, French, Rumanian, or Italian audiences.

The media plays an important role for shaping the public perception of the security of the world, the EU, or the country and mobilizing public opinion and action. Images of terrorist attacks or its victims or of humanitarian atrocities activate viewers to feel sympathy and solidarity but might also be instrumental for igniting hatred. Media also shape our background knowledge and what we think could be true.

### **3.1.4 New type of actors use violence in pursued of their goals**

Although states still play a central role in today's world politics and especially with regard to security and defence their relation vis-à-vis other actors has changed. There are a number of new actors who have appeared on the world scene or have assumed new roles. As for security the most important new actors are terrorist groups or networks such as Al Qaeda and international criminal organizations such as the

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technologies. See Festos, 'Foresight of Evolving Security Threats Posed by Emerging Technologies-Project Website', <<http://www.festos.org/>>, accessed 2 December 2009.

Columbian drug cartels or the Russian Mafia. Both types of actors are at times operating with the support of more traditional terror organizations such as Hezbollah and in combination with governments. These new actors who are not deterrable and punishable through the destruction of their assets, population or life, as they don't have meaningful material installations.<sup>35</sup> Moreover, they can often move freely between countries or even live inside European countries, which makes a fight against them more challenging, as this falls in the traditional responsibility of police and law enforcement authorities.

In addition there are other types of new actors with relevance for the attempt of European governments to provide security, in particular, NGOs, transnational companies, and private military companies. Non-governmental organizations (NGOs) such as Oxfam, Amnesty International or *Medcin sans Frontiere* play an increasing role in the international response to armed conflict. They attempt to mitigate the effects of violence, to end it, to provide information and to mobilize global public opinion.<sup>36</sup>

Moreover, the existing international organizations have claimed a new significance in world politics, be it the United Nations (UN), NATO or the Organization for Security and Cooperation in Europe (OSCE).<sup>37</sup> They provide not only a forum in which to debate security issues but also play an important role in coordinating collective action and rendering legitimacy to the action of their members. Thus NATO has sought to redefine its role after the end of the Cold War from an Alliance exclusively focused on self-defence in the North Atlantic area to an Alliance that can be used as a military instrument for a variety of tasks in an ever increasing area of action.<sup>38</sup> Especially the latter has been as divisive issue among NATO members, with France and Germany leading the effort to limit NATO's geographical area of operation and maintaining a Transatlantic rather than global focus.<sup>39</sup> Nevertheless, the UN and NATO form the most important framework for European security and defence policy.

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<sup>35</sup> This fact explains, in turn, the reduced significance of defence and deterrence in the new security paradigm, which will be addressed further below.

<sup>36</sup> For a discussion of the role of NGOs in armed conflicts see, for example, Mary Kaldor, *New and Old Wars. Organized Violence in a Global Era* (Cambridge (England): Polity Press in association with Basil Blackwell Ltd., 1999).; Jonathan Goodhand, *Aiding Peace?: The Role of Ngos in Armed Conflict* (Boulder (Col.): Lynne Rienner, 2006).

<sup>37</sup> On globalization and the changing patterns of international cooperation see e.g. Volker Rittberger, *Global Governance and the United Nations System* (Tokyo ; New York: United Nations University Press, 2001) xii, 252 p.; Philip Cerny, 'Globalisation and the Changing Logic of Collective Action', *International Organization*, 49/Fall (1995), 595-635.

<sup>38</sup> On NATO see e.g. John S. Duffield, 'Nato's Functions after the Cold War ', *Political Science Quarterly*, 109/5 (1994), 763-87.; Stanley R. Sloan, 'The United States and European Defence', (Paris: Institute for Security Studies of WEU, 2000).; Celeste Wallander, A., 'Institutional Assets and Adaptability: Nato after the Cold War', *International Organization*, 54/4 (2000), 705-35.; Richard E. Rupp, *Nato after 9/11: An Alliance in Continuing Decline*. (New York: Palgrave Macmillan, 2006).; Kristin Archick and Paul Gallis, 'Nato and the European Union', *CRS Report for Congress, Order Code RL32342*, (2005).; and the regular discussion on NATO's future in the journal *Survival*.

<sup>39</sup> Andrew Moravcsik, 'Striking a New Transatlantic Bargain', *Foreign Affairs*, 82/4 (2003), 74-89.

In sum, although the world is more interdependent due to the process of globalization there is no monopoly on the use of violent force as we would expect in analogy to the nation state notion of security. On the contrary there are new types of actors who use violent force in pursuit of their political goals and use them in novel ways, leading to new types of conflict.

### 3.1.5 New types of conflict have emerged

Since the Vietnam War most of the armed conflicts Western societies have faced are better characterized as “warfare” rather than “war”.<sup>40</sup> War is made by states through military in uniforms, is regulated by international laws, is decided by battles where there is a victorious camp and a defeated one which then sign a peace treaty. Warfare is waged by non-state actors such as insurgents but also terrorists without uniforms; neither is it regulated by the traditional norms, nor are there any major battles.

In addition, to this kind of armed conflict, Western countries are faced in the globalization-shaped security environment with what Mary Kaldor calls “new wars”.<sup>41</sup> Compared with the traditional inter-state war described before, the new ones involves three elements. First, violence is managed by states *or* by organized political groups organized on ethnic, religious or political basis within the society. Second, violence is also undertaken by organized crime and privately organized groups acting for economic purposes, like illegally exploiting the local population and resources. Third, this violence involves large scale violations of human rights.

The key point is that in these new wars the state has lost the legitimate monopoly of the use of forces, which is instead practiced by several paramilitary forces as well as organized crime, and its territory and populations are subject of continuous intra-state violence. They are self-sustaining conflicts as they are supported by a war economy, often linked to international organized crime.<sup>42</sup> This kind of armed conflicts has taken place in the Balkans during the 1990s, causing flows of refugees, regional instability, large scale violations of human rights and a growth of organized crime the European backyard. Nowadays the EU deploys several civilian and military missions in the region, involving almost 5.000 personnel,<sup>43</sup> to avoid a return of these challenges to European security.

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<sup>40</sup> See, among others, Christopher Coker, *Ethics and War in the 21st Century* (London: Routledge, 2008).

<sup>41</sup> Kaldor, *New and Old Wars. Organized Violence in a Global Era*.

<sup>42</sup> Compared to traditional inter-state war described before, the new type of war is characterized by three elements. First, violence is managed by states *or* by organized political groups organized on ethnic, religious or political basis within the society. Second, violence is also undertaken by organized crime and privately organized groups acting for economic purposes, like illegally exploiting the local population and resources. Third, this violence involves large scale violations of human rights. See *Ibid.* and Kaldor, *New and Old Wars. Organized Violence in a Global Era*.

<sup>43</sup> These missions are: EULEX KOSOVO, deployed in Kosovo since 2008, 2.598 personnel; EUFOR ALTHEA, deployed in Bosnia and Herzegovina since 2004, 2.014 personnel; EUPM, deployed in Bosnia and Herzegovina since 2003, 363 personnel. Previously, the EU had also deployed and completed in the region the missions CONCORDIA, EUPOL PROXIMA, EUPAT. Council of the European Union, 'Esdp Operations', <<http://www.consilium.europa.eu/showPage.aspx?id=268&lang=en>>, accessed 3 June 2009.

### 3.1.6 Terrorism has changed its character

During the 1990s a wide debate on the changing nature of terrorism and of the potential threat of mass-causalities due to the use of a chemical, biological, radiological, or nuclear (CBRN) device emerged.<sup>44</sup> It was prompted by several developments: a number of attacks including the sarin gas attack on the Tokyo subway by the Aum Shrinkyo cult; the explosion of a truck bomb in Oklahoma City in 1995 by an American right-wing extremist; finally, also fears about the security of nuclear weapons in the former Soviet Union as well as new information on the extent of the Soviet era bioweapons programme played a decisive role in fuelling this debate. It was distilled in Walter Laqueur's phrase that terrorism had become "catastrophic".<sup>45</sup>

In the scholarly literature there is wide-ranging agreement that it is justified to speak of "new terrorism" at least for three reasons: First, the organization of terrorist groups has become more diffuse. While the IRA, ETA, or RAF were hierarchical with clear lines of command and control, Al Qaeda and other new terror groups are often described as networks, because formal hierarchies have been replaced with personal relationships. In their case it matters more whom an individual member knows and what connections he can facilitate than his formal rank. Moreover, in comparison to the "old terrorists" who operated mainly in their home country and had international contacts to procure weapons, train, or to raise funds, the "new terrorists" are rather "de-territorialized". The countries of upbringing, radicalization, and operation are in the case of many terrorists all different. Moreover, the centre of gravity of the terrorist movements shifts permanently.<sup>46</sup>

A second difference concerns the rise of religiously motivated terrorism, as compared to "old terrorists" who were fighting for social, economic, political goals in their countries. It was shown that, whereas in the late 1960s there were no religiously inspired terrorist groups, their share had risen to about a third by the mid-1990s.<sup>47</sup> Since terrorist groups don't exist in a vacuum but reflect the political and social trends of the societies they exist in, this has been regarded as a manifestation of the religious revival that scholars noted all over the world.<sup>48</sup>

Finally, terrorism has become more deathly. The victims of "old terrorism" were often limited to the representatives of the regime terrorists fought against and only to a limited extent involved innocent civilians. It was more the symbolic value i.e. gaining

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<sup>44</sup> R. Kupperman, 'A Dangerous Future', *Harvard International Review*, 17/3 (1995), 46-49.; A. Carter, J. Deutch, and P. Zelikow, 'Catastrophic Terrorism: Tackling the New Danger', *Foreign Affairs*, 77/6 (1998), 81, I. O. Lesser et al., *Countering the New Terrorism* (Santa Monica (CA): RAND Corporation, 1999).

<sup>45</sup> Walter Laqueur, *The New Yerrorism: Fanaticism and the Arms of Mass Destruction* (New York: Oxford University Press, 1999). W. Laqueur, *The Last Days of Europe* (London: St. Martin's Press Ltd., 2007).

<sup>46</sup> Peter R. Neumann, *Old & New Terrorism. Late Modernity, Globalization and the Transformation of Political Violence* (Cambridge: Polity Press, 2009).

<sup>47</sup> B. Hoffman, 'Terrorism Trends and Prospects', in I. O. Lesser et al. (eds.), *Countering the New Terrorism* (Santa Monica (CA): RAND Corporation, 1999).

<sup>48</sup> Neumann, *Old & New Terrorism. Late Modernity, Globalization and the Transformation of Political Violence*.

the media attention for their cause or to create such disruption and fear in a society that policy decisions were influenced in their favour, rather than the number of dead people that “old terrorists” sought. By contrast “new terrorists” intentionally aim at a combination of both, mass casualties and symbolism.<sup>49</sup>

Despite these trends it has been noted that the shift from “old” to “new” terrorism has neither been universal nor uniform. Moreover, it does not only concern terrorism of Islamic fundamentalists but also Buddhist inspired cult *Aum Shinrikyo*, militant Christian anti-abortionists in the United States, or Jewish extremists in the West Bank. Even among Muslim groups there is a significant variation in terms of organizational patterns, motives, and strategies as an examination of Islamic Jihad, Hezbollah, Hamas, or Al Qaeda would show.

### 3.2 Security challenges of the EU can be categorized in four types

Given the new security environment European states are confronted with a number of challenges to their SECURITY. In the following we distinguish four broad domains, in which these SECURITY challenges can occur: traditional defence, expeditionary security, functional security, and traditional security.<sup>50</sup> We will characterize them here in terms of dangers that can arise and of missions/mission areas.<sup>51</sup>

By speaking of “dangers” we address threats and/or risks. Threats imply an actor who wants to harm EU states, citizens, or assets. Risks emanate from intended results of human action or natural events in combination with the vulnerabilities of our society. The latter come with the way our life is organized in a globalized, interdependent world with open societies and technological systems and porous borders. This allows for the distinction between Traditional Defence and Traditional security, on the one hand, and Expeditionary Defence and Structured Security, on the other. In addition, both domain groups imply a different main geographical focus: on the wider world outside the EU vs. on the inside of the EU and its neighbourhood.

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<sup>49</sup> The trend towards more mass-casualty attacks has been shown to be “consistent, significant and well-supported. For example, in the IRA’s thirty year campaign, there were just seven incidents in which the group killed ten or more people. By contrast, Al Qaeda has an average of 16 fatalities per attack, with 9/11 alone killing more people than the IRA had killed in three decades.” Peter R. Neumann, ‘Old and New Terrorism’, <file:///C:/Documents%20and%20Settings/mzysst3/Desktop/Old%20and%20New%20Terrorism%20\_%20Social%20Europe%20Journal.htm>, accessed 10 September 2009.

<sup>50</sup> The following typology draws partly on the results of the EUROSAND project. It was conducted by several SANDERA partners and examined the industrial implications of the blurring of boundaries between security and defence.

<sup>51</sup> The distinction between mission and mission areas is made due to the fact that the defence community speaks of their “missions” and the (internal) security community of “mission areas”. While mission seem to be more concrete types of assignments such as deterrence or peacekeeping, where mainly but not exclusively military personnel operates, mission areas mean complex settings of installations, activities people where a number of different types of actors are required to cooperate for security purposes. For example, in the case of a sea port, actors such as security customs officials, coast guards, private port companies, private logistics and shipping companies.

### 3.2.1 “Traditional defence” is concerned with threats to territorial integrity

Traditional Defence is concerned with threats to the territorial integrity of European states, for example, an armed attack with conventional or unconventional weapons. It includes the threat that arise from the proliferation of weapons of mass destruction (WMD) as well as their delivery systems.

Examining the opinion of policy makers as well as the wider public a recent EU report arrives at the conclusion that there is a tendency to no longer think of major powers as a potential security threat, with Russia being the main exception in some countries.<sup>52</sup> Other geographical regions which are considered as potentially threatening are China and the Middle East, albeit this concerned mainly the three largest EU members. China was a concern due to its military build up in particular regarding space and the inroads it made into Africa, potentially challenging European efforts there. Both Russia and China were also considered a threat due to their espionage activity and potential cyber attacks. In the Middle East Iran is considered as a major threat to regional security and as a destabilizing factor. Its efforts to obtain nuclear weapons and its missile tests make it a risk also to European security.

Traditional defence missions and tasks include deterrence and territorial defence in case of an attack. Though they are less likely in the current environment, they remain key missions of the military. Although military forces provide the main bulk of the forces involved in such missions, other civilian forces and authorities will be involved to defend the territory of the EU such as civilian protection or disaster relief forces.

### 3.2.2 “Expeditionary defence” addresses worldwide threats and risks

The dangers of the domain of Expeditionary Defence concern *threats* posed by the activity of international organized crime and terrorism, the interruption of trade routes, especially of sea lanes but also the destabilizing and negative *effects* of regional conflicts and state failure. They are closely linked to the dangers of the “functional security” domain but differ in that they can be geographically located in the “wider world” as opposed to the EU or its neighbourhood.

Expeditionary security missions include the EU’s so-called Petersberg Tasks i.e. humanitarian and rescue missions, peacekeeping, and crisis management. They further extent to missions that secure international sea lanes and transportation routes, such as EU anti-piracy operation Atalanta or NATO’s operation Enduring Freedom. Both missions are also concerned with interdicting shipments of weapons and drugs.

Humanitarian missions are a special case of expeditionary defence, as they present military interventions in other states for the purpose of ending or limiting the suffering of human beings *other* than EU nationals. This could be the case for example in a grave humanitarian crisis or in civil wars. These humanitarian interventions stand in contrast to the traditional notion of security and international law, which hold that the government are responsible for the security and safety of the population within the borders of its state. However, for the last twenty years Western countries have occasionally used military force justified by the violations of human rights as in the

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<sup>52</sup> The following draws on Giegerich and Pantucci, 'Foresec Deliverable 2.4 Synthesis Report', at 9.

case of the bombing of Yugoslavia in 1999.<sup>53</sup> The appearance of humanitarian interventions is closely related to other changes in the security environment, such as the spread of NGOs or an increased new coverage on a 24 hour basis. The confrontation with pictures of human suffering in other regions of the world has the potential to mobilize electorates so that politicians can no longer easily ignore suffering of foreign human beings in other countries.

In the EU organized crime and transnational terrorist networks are seen as the most immediate hard security threats.<sup>54</sup> However, while there is a high concern amongst the public and policy makers alike regarding organized crime, the situation is different as for terrorism. Almost all strategic documents such as the European Security Strategy and outlooks name it as a major threat, but among the public the actual sense of threat is relatively low. Organized crime operates inside and outside the EU and across borders. It involves drugs trafficking, human smuggling, fraud, but also product piracy and is considered to have undermined central government in some states. The threat of terrorist attacks is seen as mainly emanating from abroad, namely North Africa but also from South Asia and East Africa and only in part from within the EU. The latter does not only pose an actual threat but also contributes to social fissures, namely concerns about immigration and ethnic minorities.

Expeditionary security missions have been carried out by mainly by the military but with significant support of police and law enforcement services. For example, operation Atalanta effectively established an international 'counter-piracy' naval fleet operating under a UN mandate led by the EU and supported by non-EU countries such as Russia, Malaysia, India, Iran, China, Turkey, South Korea, Singapore, and Japan.<sup>55</sup> While this is a military operation, there are loopholes in international law concerning the treatment of pirates that have been arrested or captured at the sea. Some countries are hesitant to enforce law outside their home jurisdictions. The solutions found by the participating states vary from military ships "carrying coast guard personnel on board so that they can arrest pirates for crimes under Japanese law", over the transfer of suspected pirates to Kenya for trial (US, UK, EU), to the

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<sup>53</sup> The concept of humanitarian intervention has been widely discussed in the academic literature on internal law and international relations. The discussion was further refined by the work initiated by the UN and the Canadian on a "responsibility to protect". See, for example, R.J. Vincent, *Nonintervention and International Order* (Princeton, N.J.: Princeton University Press, 1974), Fernando Tesón, *Humanitarian Intervention: An Inquiry into Law and Morality* (New York: Transnational Publishers, 1988), Nicolas J. Wheeler, *Saving Strangers: Humanitarian Intervention in International Society* (Oxford: Oxford University Press, 2000), J. L. Holzgrefe and Robert O. Keohane, *Humanitarian Intervention: Ethical, Legal, and Political Dilemmas* (Cambridge: Cambridge University Press, 2003).; International Commission on Intervention and State Sovereignty, *He Responsibility to Protect* (Ottawa: International Development Research Centre, 2001).

<sup>54</sup> The following draws in part on Giegerich and Pantucci, 'Foresec Deliverable 2.4 Synthesis Report', at 9.

<sup>55</sup> In Japan the participation of the Self-Defence Forces in the international operation is called "maritime police action" highlighting the limited use of force in the pursuit of pirates Hitoshi Nasu and Donald Rothwell, 'Law at Sea: Challenges Facing Japan's Anti-Piracy Mission', <<http://jurist.law.pitt.edu/forumy/2009/03/law-at-sea-challenges-facing-japans.php>>, accessed 10 October 2009.

limited law enforcement by the international forces authorized by the Security Council.<sup>56</sup>

### 3.2.3 “Functional security” deals with risks due to the vulnerability of society

Functional security is concerned with severe domestic disruption occurring within EU societies, i.e. with ensuring the critical functions of society such as domestic governance manifesting basic values; working of critical infrastructures; ensuring free and safe movement of people, goods, information.<sup>57</sup> Functional security is a concern mainly due to openness and interdependence of European societies and the high reliance on technology in our everyday lives for business, social and individual purposes. This fact is increasing the risk of modern societies to technology failures, negligent and careless behaviour as well as their vulnerability to malicious actions.<sup>58</sup> The more dependent our societies become the larger the damage that tampering or carelessness with those technologies can cause.

Functional security mission areas include border security, critical infrastructure protection, protection against terrorism and organized crime, and restoring security in the case of crisis.<sup>59</sup>

#### Border security

In face of ever increasing flows of legitimate trade and people across EU borders, its Member States are at the same time confronted with the increase of cross-border flows of illegal goods, people and substances. Thus border guards are currently able to examine merely 2% of the cargo that enters the Union.<sup>60</sup> Enlargement has made this task even more complex, as Europe’s borders are formed by 6 000 km of land borders and 85 000 km of coastlines with about 1,200 seaports. Moreover, the Schengen

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<sup>56</sup> Ibid.

<sup>57</sup> Bengt Sundelius, 'Disruptions-Functional Security for the Eu. Chaillot Paper No. 83', in Antonio Missiroli (ed.), *Disasters, Diseases, Disruption: A New D-Drive for the Eu* (Paris: EU Institute for Security Studies, 2005), 67-84.

<sup>58</sup> The following draws on the results of a recent workshop of the iKNOW project funded by the European Commission’s FP7.

<sup>59</sup> These missions are mainly based on Esrab, 'Meeting the Challenge: The European Security Research Agenda. A Report from the European Security Research Advisory Board'. Though these mission areas are by and large based on the work of the European Security Research Advisory Board (ESRAB), which has become the fundament for the Commission’s subsequent security research activities, there is by no means an agreement about the security mission areas and their specific meaning. Some studies examine transportation security separately from critical infrastructure protection. See, for example, and Espi, 'Space and Internal Security-Developing a Concept for the Use of Space Assets to Assure a Secure Europe. Report 20, September 2009', <[http://www.espi.or.at/images/stories/dokumente/studies/espi%20report%2020\\_final.pdf](http://www.espi.or.at/images/stories/dokumente/studies/espi%20report%2020_final.pdf)>, accessed 1 October 2009.

<sup>60</sup> Espi, 'Space and Internal Security-Developing a Concept for the Use of Space Assets to Assure a Secure Europe. Report 20, September 2009',

Agreement affords entrants to the EU a wide area of mobility. Hence, protecting the EU's external borders is a key priority.<sup>61</sup>

The main risks that have to be countered in this context are on illegal immigration and the trafficking of drugs, weapons and illicit substances. They could enter the EU by crossing sea or land borders. The Council has set up two dedicated agencies that are to counter these risks, FRONTEX and EMSA, which will both be discussed further below.

### Critical infrastructure

The EU defines critical infrastructures as those “physical resources, services, and information technology facilities, networks and infrastructure assets which, if disrupted or destroyed, would have a serious impact on the health, safety, security or economic well-being of Citizens or the effective functioning of governments”.<sup>62</sup> It distinguishes between public, private and governmental infrastructure assets and interdependent cyber & physical networks; procedures and relevant individuals that exert control over critical infrastructure functions; and objects having cultural or political significance, including mass events.

The infrastructure assets concern in particular the following sectors: energy (electricity, oil, gas, nuclear), ICT, water, food, health, financial industry, transportation, chemical industry, space, and research facilities.<sup>63</sup> Interestingly, research and science facilities are explicitly involved in this list, the defence industry, however not.<sup>64</sup> Critical infrastructure security also includes transportation security. It is a concern due to terrorist threats to land, waterborne, and air transportation and to supply chain risks; with the transportation infrastructure being a target in the first case, and being misused as a means to create damage, in the second.

### Restoring security in case of crisis

Modern crises are changing their character from ‘predictable’ emergencies to unpredictable catastrophic events. While the former can be countered with existing crisis management tools and techniques, the latter require governments, first responders, and societies to “better prepare prior for an incident, and in parallel, improving the tools, infrastructures, procedures and organisational frameworks to respond and recover more efficiently and effectively both during, and after, an incident. The necessary capabilities need to address the areas of terrorism and crime;

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<sup>61</sup> Esrab, 'Meeting the Challenge: The European Security Research Agenda. A Report from the European Security Research Advisory Board'.

<sup>62</sup> European Commission, 'Green Paper on a European Programme for Critical Infrastructure Protection Com/2005/0576', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0576:FIN:EN:HTML>>, accessed 30 September 2009.

<sup>63</sup> European Commission, 'Communication from the Commission of 12 December 2006 on a European Programme for Critical Infrastructure Protection [Com (2006)786 Final – Official Journal C 126 of 7 June 2007].' <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0786:FIN:EN:HTML>>, accessed 30 September 2009.

<sup>64</sup> This is a clear deviation from the US strategy for Homeland Security.

natural disasters; of major industrial accidents and technological disasters; but also of challenges such as pandemics.

In this context research not only technologies but it also on the dimension of society, communities, and on the security of the citizens is important, a point which was made already by European Security Research Advisory Board (ESRAB) but even more explicit in European Security Research and Innovation Forum (ESRIF).<sup>65</sup> Hence, we explicitly include in our notion of the mission area of “restoring security in the case of crisis” measures that increase societal resilience. By societal resilience is meant “the capacity of civilian communities to detect and prevent disruptions to a nation’s security, and where necessary, to absorb shocks and bounce back into a functioning condition after a crisis as quickly as possible”.<sup>66</sup>

#### Protection against terrorism and organized crime

Organised crime and its link to terrorist financing, is seen as posing a major and complex challenge for the EU. As one influential and major study puts it, “[A] symbiotic relationship exists whereby terrorists benefit from the infrastructure that organised crime in many cases can provide while organised crime benefits from the financial ties terrorists have built to fund their assaults.”<sup>67</sup> Product pirates fake pharmaceuticals and luxury goods in order to trade them, drug dealers use of encrypted telephones to protect conversations, counterfeiters are using high-powered computers and laser printers to produce currencies, or criminal scientists help in the illegal movement of equipment, technology and even knowledge which can be used for the development of WMD.

In this case the rapid advancement in technology and science provides both, benefits but also significant challenges to law enforcement. Moreover, the challenge of international terrorism is also addressed as a “expeditionary defence” challenge. Consequently, the different branches of government i.e. Ministries of Defence (MoD) and Ministries of the Interior (MoI) as well as intelligence services, financial authorities, border and coast guards need to cooperation closely with each other in order to combat terrorists and organized criminals.

#### **3.2.4 “Traditional security” refers to the maintenance of law and order**

“Traditional security” refers to the maintenance of law and order. It is threatened by conventional crime breaking the rules and laws of EU Member States. Theft, robbery, manslaughter are but three examples of this type of crime that might endanger the security of individual citizens and the public order. These issues are dealt with by police and law enforcement authorities of each Member State according to its juridical system. Cooperation among Member States is only in exceptional cases necessary

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<sup>65</sup> Esrif, 'European Security Research and Innovation in Support of European Security Policies. Intermediate Report'. The aforementioned FORESEC study arrives at a similar conclusion.

<sup>66</sup> Cens, 'Social Resilience', <[http://www.rsis.edu.sg/cens/our\\_work/social\\_resilience.html](http://www.rsis.edu.sg/cens/our_work/social_resilience.html)>, accessed 25 October 2009.

<sup>67</sup> Esrab, 'Meeting the Challenge: The European Security Research Agenda. A Report from the European Security Research Advisory Board'.

with regard to traditional security and is then coordinated by the activities within Justice and Home Affairs of the Commission.

The following table presents the different types of security threats and risks

Table...: Typology of security threats and risks

Domain	threats and risks	Missions/Mission areas
Traditional defence	Threat of an armed attack against the territory of an EU Member State with conventional or unconventional weapons (issue of proliferation of WMDs)	<ul style="list-style-type: none"> <li>• Territorial defence</li> <li>• Nuclear deterrence</li> <li>• Civil protection</li> </ul>
Expeditionary security	Threat against EU citizens, assets of EU countries or EU interests <b>or</b> vulnerability of our society to <ul style="list-style-type: none"> <li>• Terrorist attacks</li> <li>• Regional conflicts with negative effects on EU security</li> <li>• Piracy</li> <li>• Interruption of sea lanes</li> <li>• Weapons or drug smuggling</li> <li>• Interruption of supplies of raw material and energy resources</li> </ul>	<ul style="list-style-type: none"> <li>• Humanitarian and rescue tasks</li> <li>• Peacekeeping</li> <li>• Crisis management, including peacemaking</li> <li>• Securing international sea lanes and transportation routes</li> </ul>
Functional security	Risks of <ul style="list-style-type: none"> <li>• Disruption of the basic functions of society such as governance according to our basic values</li> <li>• Disruption or destruction of critical infrastructure</li> <li>• Pandemics</li> <li>• Natural or man-made disasters</li> </ul>	<ul style="list-style-type: none"> <li>• Border security</li> <li>• Transportation security</li> <li>• Critical Infrastructure Protection, including private sector security</li> <li>• Restoring security in the case of crisis, including measures to raise societal resilience</li> </ul>
Traditional security	<ul style="list-style-type: none"> <li>• Conventional crime</li> </ul>	<ul style="list-style-type: none"> <li>• Policing</li> <li>• Law Enforcement</li> </ul>

## 4 WHAT ARE THE RESPONSES TO THESE CHALLENGES/ISSUES?

In the following section we will argue that the security and defence community has responded to the changes in the security domain with a rich conceptual debate evolving around the concept of risk and by developing EU policies to complement national policies.

### 4.1 A new security paradigm is emerging

The discussion of different types of security challenges reflects the fact that we are in a process of a major paradigm shift in security policy, without a new paradigm being in place yet. On the contrary, there is a wide debate as to how think, talk, and practice (provide) security. We are still lacking a commonly accepted vocabulary and grammar for analysing the new security situation, reflected in approaches such as “human security”, “total defence”, “societal security”, “security of the citizen”, versus the traditional notion of “national security”.<sup>68</sup> However, we can already delineate first significant results of this development.

#### 4.1.1 Defence is but one among many security tasks

One result concerns a shift away from the dominance of defence for overall SECURITY thinking. The traditional notion of security, according to which the ability to defend the territory of the realm was the main precondition for external security has already been undermined during the Cold War due to the advent of nuclear weapons and economic integration among Western countries.<sup>69</sup>

The acceptance of the aforementioned doctrine of mutually assured destruction assured each side of the effective possibility to destroy the territory of the adversary. In other words, the assumption was that the ability to harm each other’s territory would enable security, turning the traditional notion of security upside down. Moreover, in the transatlantic area a security community emerged, in which the use of force for the solution of political conflicts had become largely unlikely.<sup>70</sup> Through economic integration and mutual dependence Western European states had deliberately limited their sovereignty and accepted the fact that the United States would ultimately guarantee their security. Western European states did not individually defend themselves at their national borders but rather collectively at the external borders of the Alliance, making war among them highly unlikely.

After the end of the Cold War the aforementioned emergence of new actors, an increasing interdependence of large parts of the world economy shifted the focus of security thinking further away from *defending* territorial integrity towards *protecting*

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<sup>68</sup> Christoper Daase, Susann Feske, and Ingo Peters, *Internationale Risikopolitik* (Baden-Baden: Nomos, 2002).

<sup>69</sup> Böckenförde, 'Sicherheitspolitischer Paradigmenwechsel Von Verteidigung Zu Schutz', (

<sup>70</sup> Karl Deutsch, *Political Community and the North Atlantic Area* (Princeton: Princeton University Press, 1957).

the space of the state/society/individual. These developments prepared the ground for a security paradigm, built around the concept of risks or hazards rather than threats.

#### 4.1.2 Risk rather than threat is the central category for security

In the new paradigm the category of risk plays a much more central role than in former times. It came to replace the concept of threat as the main challenge to security, although the terms are often used interchangeably. A threat used to imply (under the old paradigm) an actor, his intention to threaten to harm or to do harm, and an object or subject that can be harmed, e.g. state, society, individual, and their assets. In the new paradigm “threat” is often used the same way as “risk”. When speaking about security in terms of risk then there are actors, their motives, goals, and actions are not the main focus of the analysis but only of interest in as much as they can trigger a statistical event. The focus is then on the effects of actions or events (and, consequently, on what it takes to mitigate, manage, or counter those effects).<sup>71</sup>

As a consequence Western militaries as well as security forces have shifted from a “threat-based” approach centring on actors and their motivations to a “capability-based” approach, which does not neglect the latter but translates them into possible scenarios. On the basis of the scenarios particular missions are developed for which the forces then acquire the necessary capabilities.<sup>72</sup> Instead of preparing for taking on a known enemy forces prepare for a number of “likely”/possible missions. Hence, flexibility and (continued) adaption to changing challenges become a hallmark of today’s security strategies.<sup>73</sup>

At the same time the concept of risk makes unintended dangers accessible to the security analysis, such as natural or man-made disasters. In fact they can analytically be treated similarly to terrorist attacks, since for the mitigation of some security risks is not important how and where they originated. A pandemic, for example, will need to be fought with the same means, no matter whether the virus is spread by tourists, terrorists, or both. Since the beginning of the 1980s there have been wide-ranging discussions about the broadening of the security concept to domains such as the environment and the negative implications for analytical clarity and policies.<sup>74</sup> The Nordic countries have very early on advocated an “all-hazards” approach to security,

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<sup>71</sup> Thus the effects of the 9/11 attacks exceeded, according to the US American understanding, the threshold of warlike actions. Similarly, NATO governments invoked Article 5 created to coordinate the defence of Alliance members in case of an external attack.

<sup>72</sup> Peter Inge, 'The Capability-Based Army', *RUSI Journal*, 139/3 (1994), 1-3, Heiko Borchert, *Vernetzte Sicherheitspolitik. Politisch-Strategische Implikationen Eines Neuen Leitbildes* (2006; Wien: Büro für Sicherheitspolitik der Landesverteidigungsakademie, 2004).

<sup>73</sup> Bundesministerium Der Verteidigung, 'Weißbuch 2006 Zur Sicherheitspolitik Deutschlands Und Zur Zukunft Der Bundeswehr', <[http://www.bmvg.de/portal/PA\\_1\\_0\\_LT/PortalFiles/C1256EF40036B05B/W26UYEPT431INFODE/WB\\_2006\\_dt\\_mB.pdf?yw\\_repository=youtatweb](http://www.bmvg.de/portal/PA_1_0_LT/PortalFiles/C1256EF40036B05B/W26UYEPT431INFODE/WB_2006_dt_mB.pdf?yw_repository=youtatweb)>, accessed 15 November 2006.

<sup>74</sup> Richard Ullman, 'Redefining Security', *International Security*, 8/1 (1983), 129-53.; Daniel Deudney, 'The Case against Linking Environmental Degradation and National Security', *Millennium*, 19 (1990), 416-76, Daniel Deudney, 'Environment and Security: Muddled Thinking', *The Bulletin of Atomic Scientists*, 47/3 (1991), 23-28.

which has been taken up by ESRIF (in contrast to ESRAB) and by the already mentioned FORESEC project.<sup>75</sup>

Another consequence of thinking about security in terms of risk is that the referent object – what is to be secured or protected – shifts from the state. Instead society or the individual become the central focus point for the analysis. This shift fits well with the consideration of other domains such as the economy, food, the environment, health, the person, the community, or the political system. Security with regard to all these domains is considered to be necessary according to the human security approach.<sup>76</sup>

#### 4.1.3 Knowledge and science have a changed relation to security

Conceptualizing security in terms of risks also indicates that the knowledge and security are related to each other in an altered way. For example, many of the new risks are not directly perceivable with human sense. Hence, they rely on scientific knowledge and causal interpretation and only appear in as much as we know about them, based on the results of science or of other bodies of knowledge.<sup>77</sup>

While pictures of Soviet tanks and missiles, reports about manoeuvres, and numbers of millions of soldiers amassed at the border to Western Europe were quite straightforward indicators for a threat, risks are more complicated to present. Complex causal links need to be established between a religiously fanatic group ruling a country at the Hindu Kush and the attacks of 9/11. These involve complex arguments, reliant on secretive information but also scientific knowledge as Collin Powell's presentation to the UN Security Council "proving" – or rather arguing for – the existence of WMDs in Iraq showed. Though a contested proposition already then, it was nevertheless a basis for action, and many of our security policy measures have the same "presuming" status, as they are based on a number of assumptions.

Moreover, there are some devastating events we don't even know they will come up, hence, also not when, how, how often they will occur ("unknown unknowns").<sup>78</sup> We will not be able to cover the entire spectrum of possible risks; neither by inductively looking at past incidents and concluding on possible future events nor by deductively developing types of hazardous events from general propositions.<sup>79</sup> For the threats of the Cold War, in contrast, it was possible to have a rough idea of who will do what and when for which purposes.

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<sup>75</sup> Kristiina Rintakoski and Mira Partanen, 'Concept of European Security. Implications for European Security Research', <<http://www.foresec.eu/>>, accessed 11 June 2009.

<sup>76</sup> Gechs, 'Global Environmental Change and Human Security', *GECHS Science Plan* (Bonn: IHDP, 1999), Roland Paris, 'Human Security - Paradigm Shift or Hot Air?' *International Security*, 26/2 (2001), Shahrbanou Tadjbakhsh and Anuradha M. Chenoy, *Human Security: Concepts and Implications* (London: Routledge, 2006), Undp, 'Human Development Report 1994: New Dimensions of Human Security', <<http://hdr.undp.org/en/reports/global/hdr1994/>>, accessed 4 May 2008.

<sup>77</sup> This argument has been forcefully made for the first time by Ulrich Beck and has since become accepted in the sociological literature about risk. Ulrich Beck, *Risikogesellschaft. Auf Dem Weg in Eine Andere Moderne* (Frankfurt am Main: Suhrkamp, 1986).

<sup>78</sup> In this case it would, hence, be more precise to speak of "uncertainty" (or "radical uncertainty").

<sup>79</sup> Ulrich Beck, *Weltrisikogesellschaft* (Frankfurt am Main: Suhrkamp, 2008).

Hence, it is no wonder that the very notions of what security is and what undermines it become politically contested.<sup>80</sup> One consequence is that science is opened up to political and social processes of contestation and the scientist loses its role as the “objective”, “independent”, and “neutral” observer and advisor.

#### 4.1.4 Security policies are more comprehensive in scope, space, and time

In face of such a comprehensive notion of security threatened by a variety of risks, only a combination of a broad range of policies such as development policy, diplomacy, scientific and technological cooperation, and military policy can provide security. This thinking is also reflected in the EU’s “comprehensive approach” to security and will be discussed further below. Here we will instead focus on the conceptual implications for security policy in terms of its extension in space and time.

As for space, in the old security paradigm security policy was directed at the territory of state, through defence and interdiction at the physical borders of that territory. However, the new security challenges don’t arise predominantly at the territorial border anymore but rather in several new spatial dimensions. On the one hand, geographically, security is ensured through interdiction i.e. the control and interruption of trade and personal flows. As for the EU this happens in a layered approach, at the border of Member States, at the external EU frontiers, in the neighbouring countries, but also very flexibly around the world. Thus the UNIFIL operation, operation Active Endeavor, Enduring Freedom, and Atalanta all are concerned with the control of illicit trade flow, especially weapons trading.<sup>81</sup> The Proliferation Security Initiative of eleven countries for the world interdiction of WMD material and the missile shield are examples of the same approach.<sup>82</sup>

On the other hand, security needs to be ensured nowadays in new kinds of spaces, in particular in cyber- and outer space. While cyber-security is addressed as part of infrastructure protection, space security has so far received little attention. The weaponization of space has so far been avoided, it can principally be used for attacks on ground or space assets. Space assets, be it satellite in the orbit or launch facilities on the ground – play an important role for the world’s communication infrastructure and for Europe’s militaries and intelligence services. Hence, they are becoming included in security policy.<sup>83</sup>

Regarding the time dimension the old type of security policy put an emphasis on (military) *reaction*, as international law only allowed for a “pre-emptive attack” as a

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<sup>80</sup> Barry Buzan, Ole Wæver, and Jaap De Wilde, *Security: A New Framework for Analysis* (Boulder, Colo. ; London: Lynne Rienner, 1998) viii, 239.

<sup>81</sup> The statement of the former German Minister of Defence, Peter Struck, that the security of Germany is also defended at the Hindu Kush, is an illustration of this understanding Norman Paech, ‘Über Den Wendekreis Des Krebses Hinaus. Gratwanderung Am Hindukusch Und Anderswo: Soll Die Bundeswehr Das Grundgesetz Überall Auf Der Welt "Verteidigen"?' <<http://www.uni-kassel.de/fb5/frieden/themen/Bundeswehr/afghanistan-einsatz-paech.html>>, accessed 5 February 2008.

<sup>82</sup> Böckenförde, ‘Sicherheitspolitischer Paradigmenwechsel Von Verteidigung Zu Schutz’, (

<sup>83</sup> Espi, ‘Space and Internal Security-Developing a Concept for the Use of Space Assets to Assure a Secure Europe. Report 20, September 2009’,

means of defence only, if an offensive by the adversary was immanent.<sup>84</sup> Addressing risks and providing protection against their possible harm, however, requires also preventive action – very much like police work. While political and non-military prevention has always been part and parcel of security policy, military preventive actions are considered to be highly problematic. The implications for international security and stability are too unpredictable, given that the notions of what represents a big enough threat to justify “anticipatory self-defence” depend on a good deal of interpretation.<sup>85</sup> Colin Powell’s presentation at the Security Council at the eve of the war against Iraq is a stark reminder of the ambiguous role that knowledge and science play in the new security environment.<sup>86</sup>

## **4.2 At EU level governments pursue a policy mix to advance their security**

Western European states have reacted in a number of ways to the new security challenges. While governments maintain the central role in security and defence policy they have formulated a number of common policies at EU level to enhance their security in Europe and in the world. Following the establishment of the EU with the claim to become an independent actor on the world stage, governments have embarked on the formulation of a Common Foreign and Security Policy (CSFP) and later on a European Security and Defence Policy (ESDP). Moreover, they have developed a number of policies to enhance the functional security of the EU. All these policies are supported by common research efforts and form part of a wider “comprehensive approach” to security.

### **4.2.1 EU advocates a “comprehensive approach” to security**

EU governments pursue, what has been called, a “comprehensive approach” to security policy. In rough terms, it means the application of a wide spectrum of instruments and policies including diplomatic, economic, developmental, humanitarian, policing and military ones to address security challenges. Such an approach implies that the EU, member states, civilian and military institutions, agencies at national and European level, all shall cooperate to coordinate their

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<sup>84</sup> The following draws partly on Böckenförde, 'Sicherheitspolitischer Paradigmenwechsel Von Verteidigung Zu Schutz', (

<sup>85</sup> Barry R. Posen, 'The Security Dilemma and Ethnic Conflict', *Survival*, 35/Spring (1993), 27-47, John G. Ikenberry, 'America's Imperial Ambition', *Foreign Affairs*, 81/5 (2002), 44-60, Allen Buchanan and Robert O. Keohane, 'The Preventive Use of Force: A Cosmopolitan Institutional Proposal.' *Ethics and International Affairs*, 18/1 (2004), 1-22.

<sup>86</sup> Powel presented the audience with satellite images of tubes on trucks. They were conveyed as evidence for his programme of developing WMDs posing a major threat to world peace and, hence, justifying military action in line with the UN Charta. Colin L. Powell, 'Remarks to the United Nations Security Council by Secretary Colin L. Powell, New York City, February 5, 2003', <<http://merln.ndu.edu/MERLN/PFIraq/archive/state/17300.pdf>>, accessed 15 October 2009.

policies, actions and resources achieving a force-multiplier effect in dealing with security issues.<sup>87</sup>

Consequently, the European Security Strategy of 2003 does not only focus on countering specific threats, but maintains that security is also to be achieved through the stabilization of the immediate neighbourhood of the EU and through strengthening an international order based on “effective multilateralism”. The European Neighbourhood Policy (ENP) has always had an element of security. Stability and peace in the countries sharing a border with the EU has been a vital interest for the Union. Since the terrorist attacks in Madrid and London, security has become a priority of the ENP, something that is met with reservations, especially in the countries in North Africa and the Middle East.

Thus development policy is increasingly regarded as an important aspect of security policy.<sup>88</sup> Some argue that even EU enlargement catered for the security interests of the Union.<sup>89</sup> It would make the region at large more stable. For example, the annual report on enlargement of the European Commission from the year 2000 points to the prospects for stability and security as a major benefit and result of enlargement.<sup>90</sup>

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<sup>87</sup> Council of the European Union (2003) *A Secure Europe in a Better World. European Security Strategy*. In, <http://www.iss-eu.org/solana/solanae.pdf>. Also national White Papers reflect on that issue. See, among others: Présidence De La République, 'The French White Paper on Defence and National Security', ; Bundesministerium Der Verteidigung, 'White Paper 2006 on German Security Policy and the Future of the Bundeswehr', ; Uk Ministry of Defence, *Delivering Security in a Changing World. Defence White Paper. Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty December 2003* (London, 2003). Sweden advocates a similar approach called “total defence” Government Offices of Sweden, 'Our Future Defence. The Focus of Swedish Defence Policy 2005-2007', <<http://www.sweden.gov.se/content/1/c6/03/21/19/224a4b3c.pdf>>, accessed 16 July 2009. Other countries as Italy and Spain follow a more focused approach Stato Maggiore Della Difesa, 'Il Concetto Strategico Del Capo Di Smd', <<http://merln.ndu.edu/whitepapers/Italy-2004.pdf>>, accessed 14 July 2009. and Spanish Government, 'National Defence Directive 1/2004', <[http://merln.ndu.edu/whitepapers/Spain\\_English2004.pdf](http://merln.ndu.edu/whitepapers/Spain_English2004.pdf)>, accessed 14 July 2009.

<sup>88</sup> Council of the European Union, 'A Secure Europe in a Better World. European Security Strategy.' European Council, 'Council Directive Concerning Measures to Safeguard Security of Natural Gas Supply (2004/67/Ec of 26 April)', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0067:EN:HTML>>, accessed 2 June 2009. Council of the European Union, 'Report on the Implementation of the European Security Strategy - Providing Security in a Changing World - Brussels, 11 December (S407/08)', (2008).

<sup>89</sup> James (Ed.) Sperling, *Two Tiers or Two Speeds? The European Security Order and the Enlargement of the European Union and Nato* (Manchester: Manchester University Press, 1999), Martin A. Smith and Graham Timmins, *Building a Bigger Europe: Eu and Nato Enlargement in Comparative Perspective* (Aldershot, Hants, England: Ashgate Publishing Company, 2000).

<sup>90</sup> European Commission, *Regular Reports from the Commission on Progress Towards Accession by Each of the Candidate Countries, Strategy Paper, 8 November* (Brussels: European Commission, 2000). For a critical discussion of this argumentation see Helene Sjørnsen, 'Why Expand?: The Question of Legitimacy and Justification in the Eu's Enlargement Policy', *Journal of Common Market Studies*, 40/3 (2002), 491-513. who argue that this formulation was introduced into the report in order to acquiesce applicant countries and reassure them of the commitment of EU MS, with identity and moral motifs playing the decisive role for enlargement.

The comprehensive approach is very much in line with the specific experience of European countries. Thus the history of European integration marked by a high degree of interdependence among different policy areas and spill-over effects among them was conducive to the development of such an approach. Moreover, it was shaped by the increasing number of Member States with different strategic cultures, so of which with a distinct preferences for civilian rather than military instruments.<sup>91</sup> Consequently, the comprehensive approach and its implementation remain a highly contested endeavour.

EU Member States coordinate different policies within the EU in order to promote their security. Their policies can be differentiated according to the types of security threats discussed above into policies directed at the different domains of security: expeditionary defence; functional security; traditional security. In the following we will review each of these policies, before we present the institutions and organizations in the next section.

The policies regarding defence and security research and technology (R&T) present are of specific important to the subject matter of the SANDERA project. They have unfolded along very different lines, which have, until very recently, been almost entirely separate from each other. Given that the European Commission and the European Defence Agency agreed on a Framework of Cooperation only in November 2009, we will review defence and security research activities together with the policies for expeditionary and functional security respectively.

#### 4.2.2 Traditional defence remains largely excluded from EU policies

Traditional territorial defence has remained until today a prerogative of NATO. Many European governments have insisted on US American involvement in the security architecture of Europe;<sup>92</sup> so have the United States themselves, which was most clearly expressed on their insistence on the “3Ds” – no decoupling, no discrimination, no duplication of EU defence efforts with those of NATO.<sup>93</sup> Finally, even the policy closest to traditional defence – the European Security and Defence Policy – is concerned with two tasks: crisis management and the fight against international terrorism but not territorial defence.

However, although the European Convention could not agree on a mutual defence clause, the Lisbon Treaty introduces a sort of “clause of mutual defence”. Art. 42, par. 7 affirms that “if a Member State is the victim of armed aggression on its territory, the other Member States shall have towards it an obligation of aid and assistance by all the means in their power, in accordance with Article 51 of the United Nations

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<sup>91</sup> A. Hyde-Price, 'European Security, Strategic Culture, and the Use of Force', *European Security*, 13/4 (2004).

<sup>92</sup> Schneider, *Sicherheit, Wandel Und Die Einheit Europas. Zur Generativen Rolle Von Sicherheitsdiskursen Bei Der Bildung Zwischenstaatlicher Ordnungen Vom Wiener Kongress Bis Zur Erweiterung Der Nato*.

<sup>93</sup> Madelaine Albright, 'Remarks to the North Atlantic Council Ministerial Meeting, Brussels, 8 December', <[http://www.fas.org/man/nato/news/1998/98120802\\_tlt.html](http://www.fas.org/man/nato/news/1998/98120802_tlt.html)>, accessed 21 March 2007.; Gianluca Maspoli, 'European Security and Revolution of Military Affairs', *International Security Forum, 14th - 16th October 2002* (Zürich, 2002).

Charter”.<sup>94</sup> However, this provision is considered to be mostly symbolic, as far as the EU is not planning to actually organize collective territorial defence.

Moreover, the “solidarity clause” detailed by the Art. 222 says that the Union and member states shall jointly act to prevent terrorist threat in the EU territory and protect civilian population from it, and to assist a member state which requires help in case of terrorist attack and man-made or natural disaster. In other words, it provides a Treaty basis for the utilize of ESDP within the territory of the EU, mainly referring to civil protection’s activity but involving also the use of police or military units on crisis management and perhaps protection of infrastructure or large events. Therefore, it may result in closer links between internal and external security, but the role of armed forces in internal security will most probably remain very limited.

In any case, both Articles are formulated in a sufficiently open way to allow for an implementation via concepts, doctrine, and institutions that could over time develop into a closer cooperation on territorial defence too.

### 4.2.3 ESDP focuses on expeditionary defence challenges

#### CSFP, ESDI, and ESDP

The decision to transform the European Communities into the European Union, aspiring to become an international actor, fundamentally changed the security environment in Europe. It created a new frame for political cooperation among EU Member States and introduced an additional dimension for their relationships with the rest of the world.

With the creation of the EU in 1992, Member State also started to develop a Common Foreign and Security Policy (CFSP), including the eventual framing of a common defence policy, under the responsibility of the European Council. The latter goal was pursued in parallel in two different institutional frames: on the one hand, the EU availed itself of some functions of the WEU, the traditional European defence forum. In 1992 The WEU countries had agreed on the possibility to carry out crisis management, the so called “Petersberg” tasks: humanitarian and rescue tasks, peace-keeping tasks, tasks of combat forces in crisis management, including peace-making. On the other hand, following the NATO Berlin Summit in 1996, the Alliance members had agreed to develop a European Security and Defence Identity (ESDI) within NATO i.e. to strengthen its “European Pillar”. In 1997, the Amsterdam Treaty incorporated in the *acquis communautaire* the Petersberg Tasks for European military forces.

However, neither CSFP nor ESDI witnessed a real success and the breakthrough was only achieved with the declaration of the British and French governments in Saint Malo in 1998. It called for an EU capacity of autonomous action backed up by credible military forces, the means to decide to use them and the readiness to do so. Then the Cologne European Council in 1999 supported the Saint Malo Declaration and announced the inclusion of WEU functions in the EU framework.

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<sup>94</sup> "Treaty of Lisbon Amending the Treaty on European Union and the Treaty Establishing the European Community, Signed at Lisbon, 13 December 2007", <<http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2007:306:SOM:EN:HTML>>, accessed 24 December 2007.

At the centre of interest were not defence capabilities in general but “only” the military means for crisis management.<sup>95</sup> This notion was almost immediately extended to involve also non-military means.<sup>96</sup> This accommodated not only demands of the neutral countries but also played to the traditional strengths of Germany, which was slow to adapt its military doctrine towards expeditionary missions. Moreover, it allowed the association of the Commission and thereby the tapping of its expertise and budget.<sup>97</sup> This step was also important in a symbolic sense. The strong emphasis on military aspects needed to be balanced with civil elements in the eyes of all those who adhered to a notion of Europe as a civilian power, which was to be maintained as it developed into a more capable international actor.

Though in terms of policy and institutions building the ESDP proceeded well, it was severely challenged by the US policy towards Iraq and its push to go to war, as EU Member States could not agree on a common position in 2002/03. Nevertheless in December 2003 they adopted the European Security Strategy, which outlined the common understanding of the new security environment and the guidelines for the European answers. It identified five key threats: terrorism, with terrorist groups targeting Europe and establishing cells within the EU; proliferation of weapons of mass destruction, with a specific mention for biological, chemical and radiological attacks; regional conflicts close and far away the European borders, charged to fuel extremism, terrorism, state failure, demand for WMD and organized crime; state failure, undermining global governance and mutually reinforcing the previous threats; organized crime, as internal threat with important external dimension epitomized in cross-borders trafficking in drugs, illegal migrants and weapons.<sup>98</sup> Except of countering these threats, security is considered to be a precondition for development and linked to the issues of access to natural resources and energy supply. The main emphasis remains the improvement of military capabilities.

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<sup>95</sup> Since the Seville European Council in 2002, ESDP has been developed in a way as to allow for contributions in the fight against terrorism. See Council of the European Union, 'Presidency Conclusions Seville European Council 21 and 22 June 2002', <[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/72638.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/72638.pdf)>, accessed 6 February 2007., point 11 and Annex V; Council of the European Union, 'Declaration of the European Council on Combating Terrorism, Brussels, 25 March', <[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/79637.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/79637.pdf)>, accessed 7 September 2006., and more generally Council of the European Union, 'General Affairs & External Relations Council. Extracts from Successive General Affairs & External Relations Councils', <[http://ec.europa.eu/external\\_relations/cfsp/intro/gac.htm](http://ec.europa.eu/external_relations/cfsp/intro/gac.htm)>, accessed 21 March 2007.

<sup>96</sup> “The question of defence commitments (Article 5 NATO – and WEU – Treaty) should – for the time being – not be the first priority. Crisis management is the area where a European capacity to act is required most urgently.” Maartje Rutten, *From St-Malo to Nice. European Defence: Core Documents* (Chaillot Paper 47; Paris: Institute for Security Studies of WEU, 2001). German Presidency Paper, Bonn, 24 February 1999, point II.

<sup>97</sup> The Feira Council welcomed “the willingness of the Commission to contribute to civilian crisis management within its spheres of action.” Council of the European Union, 'Presidency Conclusions Feira European Council 19 and 20 June 2000', <[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/00200-r1.en0.htm](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/00200-r1.en0.htm)>, accessed 15 May 2005., point 11.

<sup>98</sup> Council of the European Union, 'A Secure Europe in a Better World. European Security Strategy.'

Concrete steps to this end have in the last years included the introduction of EU Battle Groups (EUBG) or the creation of the European Defence Agency to support Member States in their efforts to develop and acquire the agreed upon military capabilities (see below). The relations between NATO and the EU were finally formalized by the “Berlin-Plus Agreement” addressing operative issues on how the EU can use the NATO military assets to run its own independent crisis management operations.<sup>99</sup>

### ESDP Operations

The development of these policies (and the establishment of related institutions, reviewed further below) has enabled EU Member States to lead a number of ESDP operations. So far the EU has engaged in ten completed and twelve ongoing operations, mainly in the “immediate neighbourhood” (Balkans, Africa), but also in crisis interventions in distant regions (usually max. 6,000 km from Brussels).<sup>100</sup> Their variety reflects the comprehensive approach to security:

- monitoring missions, in which the implementation of agreements is observed (e.g. Aceh);
- rule of law missions providing advice on reforms of parts of the judicial system in Georgia and Iraq;
- police missions, which consist of monitoring, mentoring and advising the police, for example of FYROM; and
- military missions that contribute to improving the security conditions and the humanitarian situation with or without the consent of the local authorities.

In addition to the policies and operations addressing the threats of expeditionary defence, EU Member States have engaged in defence research cooperation.

### Defence research and technology<sup>101</sup>

The cooperation of Western European countries on defence research and technology (R&T) issues dates back to the 1950s, as it has been part and parcel of bilateral and multilateral armaments collaboration projects such as the Eurofighter aircraft or the FREMM frigate. Since then mainly France, the UK Germany, and Italy initiated and managed a number of large scale cooperation projects on the development and manufacturing of sophisticated weapons systems. It is important to note that the aforementioned countries pursued such projects in various configurations on an ad hoc basis mainly outside any long lasting institutional framework.

Only since 1976 Western European governments started to pursue defence R&T cooperation more systematically within NATO – in the aforementioned IEPG. In the 1990s, after the IEPG was moved under the umbrella of the Western European Union i.e. outside the EU. Although after 1999 governments had identified the needed

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<sup>99</sup> Alessandro Marrone, *La Nato Verso Il Vertice Di Bucarest* (Rome: Istituto Affari Internazionali, 2008).

<sup>100</sup> Council of the European Union, 'Esdp Operations',

<sup>101</sup> The following part corresponds to a large extent to the SANDERA Background Paper DEFENCE AND SECURITY R&D IN EUROPE.

military capabilities for ESDP missions they established no mechanism to coordinate capability requirements, procurement or defence R&T. It was only in 2004 with the establishment of the European Defence Agency (EDA) that defence R&D started to be pursued within the EU.

Despite this integration of defence R&T into EU policy, it needs to be emphasized that it is *national* defence R&T programmes rather than cooperative R&D between governments that remains central to European defence R&T spending. National governments remain reluctant to engage in cooperative R&T. Despite their statements of support for the concept, cooperative research and technology accounts for a mere 5 percent of all European defence R&T activity or €436 million in 2005.<sup>102</sup>

Though enormous economic benefits can be expected to result from cooperation, there are several reasons for governments' reluctance to engage in it. First, European governments are cautious about sharing technical information where it is perceived to be of particular military or industrial advantage to other countries, even within Europe. Second, European cooperative programmes tend to take a long time to negotiate and national governments have often found it difficult to integrate cooperative programmes into their national R&T planning. Third, European governments have very different views with regard to the value of European cooperation. Some governments (notably France) have advocated closer European cooperation as a means of retaining European autonomy and avoiding dependence upon the United States. Other European governments (notably the UK) have proved more willing to depend on the United States for some defence technologies.

Today the EDA's R&T Directorate is responsible for the Agency's goal of enhancing the effectiveness of European defence Research & Technology by acting as a catalyst for more European R&T collaboration and by developing policies and strategies to strengthen defence technology in Europe. Since 2005 the EDA has pursued a number of activities such as working on the agreement of European R&T priorities; acting as a customer for R&T projects on the EDA's own account (within the limits of its budget) or on behalf of groups of governments; or providing a forum (physically and electronically) for governments, industry and academia to exchange knowledge relevant for defence technologies.

The European Defence Agency in the R&D field has achieved a number of significant, albeit limited results:

- Formulation of a R&T strategy, which is embedded in a wider process of formulating a Long Term Vision on future security challenges and embedding it into a capability development process.;
- Invention and establishment of an instrument to finance R&T programmes by a number of governments via a collective pot of money without a distribution of the workshare according to the *juste retour* principle, the so called "Joint Investment Programme" or JIP. The JIP is legally innovative as it involves, for example, competition across borders and the mandatory participation of research institutes, which adds to the quality of the tool.

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<sup>102</sup> Collaboration is defined as agreement for project or programme contracts by at least two Ministries of Defence, of which at least one is an EDA participating Member State.

- Support for ad hoc projects on Software Defined Radio and the insertion of Unmanned Aerial Vehicles (UAVs) into civilian airspace in cooperation with the Commission.
- In addition to the ad hoc cooperation with the Commission the Agency has established a Framework Agreement with the Commission (and the European Space Agency – ESA) to systematically search for possibilities of research cooperation.

Despite this success, formidable challenges remain. Thus, participating Member States (especially the UK but also France) have shown little interest in developing collective European solutions to their defence R&D needs in the way envisaged when the EDA was established. Moreover, the largest Member States have made it clear that they place a greater value on bi-lateral R&D cooperation with other European governments (and the United States) and outside the EDA framework. Finally, participating Member States have been unwilling to grant the EDA a substantial budget to fund its own defence R&T priorities.

#### 4.2.4 Several EU policies address functional security challenges

In addition to the policies and operations addressing the threats of expeditionary defence, EU Member States have also pursued policies addressing functional security challenges. While the policies with regard to expeditionary defence missions had been developed mainly in the 1990s, the policies regarding functional security were in their majority initiated after the year 2000. They comprise an internal dimension of fighting terrorism; policies for the protection of critical infrastructure; energy security; civil protection; and border security. In addition, the Commission has developed a security research policy as part of 7<sup>th</sup> Framework Programme, which has recently been linked to the defence research activities of the EDA and the space research of the ESA.

##### Fight against terrorism

Already the Hague Programme of 2004 addressed the prevention of terrorism, following the attacks in the US and in Madrid. Immediately after 9/11 the Council had agreed on an “Action plan to fight against terrorism”, which included improved juridical and police cooperation (arrest warrant, information sharing with EUROPOL); combating the funding of terrorism; tighter air security; and better coordinated global action.<sup>103</sup> Moreover, a Community mechanism for the facilitation of reinforced cooperation in protection and assistance interventions was established.<sup>104</sup>

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<sup>103</sup> European Council, 'Conclusions and Plan of Action of the Extraordinary European Council Meeting on 21 September 2001', <[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/140.en.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/140.en.pdf)>, accessed 2 June 2009.

<sup>104</sup> Council of the European Union, 'European Council (2001) Decision Establishing a Community Mechanism to Facilitate Reinforced Cooperation in Civil Protection Assistance Interventions', <[http://ec.europa.eu/environment/civil/prote/cplegis/301d0792\\_en.htm](http://ec.europa.eu/environment/civil/prote/cplegis/301d0792_en.htm)>, accessed 4 November 2009.

The European Council outlined a common definition of terrorist acts and terrorist groups, as a basis for the preparation of list of persons and groups charged of terrorist activities.<sup>105</sup> In 2004 the EU created within the Council Secretariat the EU Counter Terrorism Coordinator and adopted a year later a Counter Terrorism Strategy. It identifies four categories of actions, which have to be constantly coordinated at EU and national level: prevention, protection, prosecution and response.<sup>106</sup> In this context the protection of critical infrastructure is mentioned as a particularly important field of policy cooperation.

#### Protection of critical infrastructure

In 2004 the Commission, in response to a Council initiative published a Communication on "Critical Infrastructure Protection in the Fight against Terrorism" outlining measure to enhance the prevention, preparedness and response to terrorist attacks involving critical infrastructures (CI). In 2006 a policy package composed of a Communication and a Directive was adopted. The Communication outlines the general policy regarding a European Programme for Critical Infrastructure Protection (EPCIP), including a Critical Infrastructure Warning Information Network (CIWIN); work-streams to develop EPCIP, sectoral interdependencies, annual work planning, and the residual work on National Critical Infrastructure.<sup>107</sup> The Directive designates which infrastructures are of a European dimension ("European Critical Infrastructure" or ECI).<sup>108</sup>

The Commission foresees several funding sources for activities related to the protection of critical infrastructures in Europe. The Commission funds, for example, CIP-related measures such as studies and the development of specific methodologies. A Pilot Project finances "a set of preparatory actions that cover both the award of subventions and calls for tenders" with an overall budget under the EPCIP Pilot Project is only € 3 million. Funding for concrete hardware updates will, however, have to come from other sources.<sup>109</sup>

#### Energy security

Energy security i.e. the secure supply of EU Member States with energy resources is mainly addressed through the Union's energy policy. It is in particular concerned with

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<sup>105</sup> Fedirica Di Camillo, *Una Nuova Sicurezza Per L'unione Europea: Integrazione E Coordinamento Istituzionale* (Torino: Centro Studi sul Federalismo, 2007).

<sup>106</sup> Council of the European Union, 'The European Union Counter-Terrorism Strategy', <[http://ue.eu.int/uedocs/cms\\_Data/docs/pressdata/en/jha/87257.pdf](http://ue.eu.int/uedocs/cms_Data/docs/pressdata/en/jha/87257.pdf)>, accessed 4 November 2009.

<sup>107</sup> European Commission, 'A Communication on a European Programme for Critical Infrastructure Protection', <[http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006\\_0786en01.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0786en01.pdf)>, accessed 12 November 2009.

<sup>108</sup> European Commission, 'Directive on the Identification and Designation of European Critical Infrastructure and the Assessment of the Need to Improve Their Protection', <[http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006\\_0787en01.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0787en01.pdf)>, accessed 12 November 2009.

<sup>109</sup> European Commission, 'Epcip – European Programme for Critical Infrastructure Protection', <[http://ec.europa.eu/justice\\_home/funding/2004\\_2007/epcip/funding\\_epcip\\_en.htm#\\_ftn2](http://ec.europa.eu/justice_home/funding/2004_2007/epcip/funding_epcip_en.htm#_ftn2)>, accessed 12 November 2009.

the supply of oil, gas, and electricity. While the strategies for the security of supply differ with regard to these resources they are complementing national strategies pursued by individual EU Member States, partly in defiance of EU common interests.<sup>110</sup>

An Energy Security and Solidarity Action Plan adopted in 2008, specifies further internal and external instruments. Internally, energy security is further supported by the implementation of an internal energy market, increasing energy efficiency, and making better use of internal energy resources. Externally the Union uses the Energy Community, founded in 2006 as an instrument to tie in neighbourhood countries to its energy supplies. The Energy Community is an internal market in electricity and natural gas of the 27 Member States of the European Union, seven European states and Kosovo.<sup>111</sup>

Russia and North Africa present regions of strategic importance for the EU's energy security. Regarding Russia the EU aims at establishing legally binding agreements about the supply with energy and to increase interdependence, for example, by creating mutual access to infrastructure investments. This is also a means to transfer Western technology and ensure that the supply systems are capable of carrying Europe's demand. As for North Africa a Trans-Sahara Gas Pipeline is anticipated.<sup>112</sup>

### Civil protection

Though the primary responsibility for dealing with the immediate effects of a disaster lies with the country where a natural or man-made disaster or a terrorist attack occurs, the EU has also established a Civil Protection Mechanism. A disaster-stricken country can benefit from civil protection means or teams available in other Member States, when the scale of the disaster overwhelms national response capacities.<sup>113</sup> Civil

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<sup>110</sup> European Commission, 'Communication from the Commission on the Directive 2004/67/Ec of 26 April 2004 Concerning Measures to Safeguard Security of Natural Gas Supply Com/2008/0769 Final', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0769:EN:NOT>>, accessed 10 November 2009.; European Commission, 'Council Directive 2006/67/Ec of 24 July 2006 Imposing an Obligation on Member States to Maintain Minimum Stocks of Crude Oil and/or Petroleum Products', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006L0067:EN:NOT>>, accessed 10 November 2009.; European Commission, 'Directive 2005/89/Ec of the European Parliament and of the Council of 18 January 2006 Concerning Measures to Safeguard Security of Electricity Supply and Infrastructure Investment', <[http://eur-lex.europa.eu/smartapi/cgi/sga\\_doc?smartapi!celexplus!prod!DocNumber&lg=en&type\\_doc=Directive&an\\_doc=2005&nu\\_doc=89](http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Directive&an_doc=2005&nu_doc=89)>, accessed 11 November 2009.

<sup>111</sup> The other members of the Energy Community are the European Community, Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, and Serbia.

<sup>112</sup> European Commission, 'Energy Security and Solidarity Action Plan', <[http://europa.eu/legislation\\_summaries/energy/european\\_energy\\_policy/en0003\\_en.htm](http://europa.eu/legislation_summaries/energy/european_energy_policy/en0003_en.htm)>, accessed 1 December 2009.

<sup>113</sup> European Commission, 'Communication on "Reinforcing Eu Disaster and Crisis Response"', <[http://ec.europa.eu/external\\_relations/peace\\_security/docs/com05\\_153\\_en.pdf](http://ec.europa.eu/external_relations/peace_security/docs/com05_153_en.pdf)>, accessed 15 November 2009.

Protection at EU level also addresses issues of maritime pollution, chemical accidents, and prevention in order to increase the resilience of society.<sup>114</sup>

The Community Civil Protection Mechanism was established in 2001 and facilitates the mobilisation of support and assistance from Member States in the event of major emergencies. At its core is the Commission's Monitoring and Information Centre (MIC). The MIC receives alerts and requests for assistance directly from a disaster-stricken country. It coordinates the assistance of 30 European countries' in case of a disaster, inside or outside the EU. The assistance takes the form of assets needed to save lives and alleviate suffering in the first days of a disaster. This involves typically support such as search and rescue equipment, medical services, temporary shelter, or sanitation equipment. In addition, the Commission has launched a daily bulletin monitoring emerging and ongoing natural and manmade disasters around the globe. It attempts to inform decision-makers and crises centres in Europe and abroad.<sup>115</sup>

The Mechanism has been providing assistance in a number of major disasters worldwide, notably the tsunami that hit the southern shores of Asia in December 2004, the hurricane that hit the US in September 2005 and the South Asia earthquake of October 2005. However, the system has also supported provided assistance within the EU, for example, in the case of floods in Central Europe and forest fires in Portugal in 2005.<sup>116</sup>

### Border security

The need for a border control of the Union's external borders arose in a step-by-step process linked to the Schengen Agreement of 1985, which allowed for the abolition of internal borders as well as by a EU Directive that gives every EU citizen and their families the right to move and reside freely within the Union.<sup>117</sup>

To this end the Commission has proposed an ambitious European Border Surveillance System (EUROSUR), which has so far, however been set back by technical issues.<sup>118</sup>

Its main purposes are

- prevention of unauthorised border crossings;

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<sup>114</sup> European Commission, 'European Civil Protection', <<http://ec.europa.eu/environment/civil/index.htm>>, accessed 19 November 2009.

<sup>115</sup> European Commission, 'Communication on Reinforcing the Union's Disaster Response Capacity Com/2008/0130 Final', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0130:EN:NOT>>, accessed 17 November 2009.

<sup>116</sup> European Commission, 'Civil Protection: Commission Proposes to Strengthen the Eu Civil Protection Mechanism', <<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/89&format=HTML&aged=1&language=EN&guiLanguage=en>>, accessed 10 November 2009.

<sup>117</sup> The Schengen Agreement was originally adopted in 1985 and became a Convention in 1995 with, then 9 signatories. It was incorporated in the the *acquis* in 1999, accepted by all EU Member States but the UK and Ireland.

<sup>118</sup> European Commission, 'Communication Examining the Creation of a European Border Surveillance System (EurosUr)', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0068:FIN:EN:PDF>>, accessed 12 November 2009.

- reduction of the number of illegal immigrants losing their life at sea and
- increasing the internal security of the EU by contributing to the prevention of cross-border crime.

The system is mainly thought of as a technical solution supporting Member States “in reaching full *situational awareness* at their external borders and in increasing the *reaction capability* of their law enforcement authorities”. Although the introduction of the Schengen Information System is plagued by delays and technical problems, the Commission has renewed its intention for the introduction of additional information systems in the Communication for the aforementioned Stockholm Programme.<sup>119</sup> The External Borders Agency (FRONTEX), set up in 2004, plays a central role in the implementation of EUROSUR.

### Security research<sup>120</sup>

During the Cold War, governments have paid little attention to security research and research cooperation in comparison to analogous activities in defence. The main threat to national security was external and, when compared to defence R&D, security R&D was assumed to account for a relatively small proportion of government spending. Security R&D and procurement spending was also spread across a wide variety of different knowledge producers, funding sources and users. These ranged from Interior Ministries and Intelligence Services to police forces and coast guards. Some of these organisations funded R&D and had procurement processes similar to the military. Others relied on commercial suppliers.

This situation began to change in the late 1990s with growing concern in the United States and Europe about the potential threat posed by biological or chemical terrorism. However, it was with the events of 9/11 that the role of science and technology in combating terrorism became a source of heightened policy concern. Policy attention has also turned to the role of science and technology in tackling other security challenges, whether cyber-attack, transnational crime or illegal migration. The scope of security research is therefore broad as are its missions and users.

Security research is, according to the European Security Research Advisory Board, concerned with those “research activities that aim at identifying, preventing, deterring, preparing and protecting against unlawful or intentional malicious acts harming European societies; human beings, organisations or structures, material and immaterial goods and infrastructures, including mitigation and operational continuity after such an attack (also applicable after natural/industrial disasters)”.<sup>121</sup>

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<sup>119</sup> Daniela Kietz and Roderick Parkers, *Das Stockholmer Programm. Schwierige Weichenstellung in Der Europäischen Justiz- Und Innenpolitik - SWP Aktuell 51, August* (Berlin: Stiftung Wissenschaft und Politik, 2009).

<sup>120</sup> This part corresponds to a large extent to the SANDERA Background Paper DEFENCE AND SECURITY R&D IN EUROPE.

<sup>121</sup> Esrab, 'Meeting the Challenge: The European Security Research Agenda. A Report from the European Security Research Advisory Board'. Interestingly, this definition by using “preventing” and “protecting” conceptually and implicitly includes defence research.

A total of € 1.4 billion has been allocated for funding this theme over the duration of FP7 (2007-2013). Formally, the security research theme has an exclusively civil application focus and will not work on any technology for lethal and/or destructive weapons. The Commission states that particular emphasis will be given to the following activities:

- Increasing the security of citizens - technology solutions for civil protection, bio-security, protection against crime and terrorism;
- Increasing the security of infrastructures and utilities – examining and securing infrastructures in areas such as ICT, transport, energy and services in the financial and administrative domain;
- Intelligent surveillance and border security – technologies, equipment, tools and methods for protecting Europe's border controls such as land and coastal borders;
- Restoring security and safety in case of crisis – technologies and communication, coordination in support of civil, humanitarian and rescue tasks;
- Improving security systems integration, interconnectivity and interoperability – information gathering for civil security, protection of confidentiality and traceability of transactions;
- Security and society – socio-economic, political and cultural aspects of security, ethics and values, acceptance of security solutions, social environment and perceptions of security;
- Security research coordination and structuring – coordination between European and international security research efforts in the areas of civil, security and defence research

One important point to emphasise about security research is that its institutions and modalities are very different to that of defence R&T, even though there is a considerable blurring between the underlying technologies utilised in defence and security applications. In contrast to defence research national governments have not been the traditional “wardens” of these research activities. Though many EU countries have national security research programmes, these were implemented only in reaction and after the Commission had started its activities.

The security research theme has some distinctive features that set its governance apart from other elements of the Seventh Framework Programme. The sensitive nature of some security technologies and the issues surrounding operational security policies and vulnerabilities place an emphasis on secrecy rather than openness. At the same time, the end-users of security technologies present distinctive challenges not least that they are often public or government agencies making it important that Member States have a close and active involvement in the programme.

As a consequence, Member States are strongly engaged in priority setting for the security research theme in a way that they are not in other parts of the Framework Programme. The security research theme has a strong Programme Committee comprised of representatives from Member States government departments. The mission-oriented nature of the security research theme means that research proposal evaluation and selection places a strong emphasis on user engagement.

Moreover, the security research theme has confronted the Commission with issues that are new to the Framework Programme not least the handling of classified

information and export control. Finally, there are also special provisions for the participation of third countries. The Council noted: “Due to the particular sensitivity of this area, international cooperation will be considered on a case-by case basis with respect to the countries involved. Particular requirements and criteria for international cooperation may be specified in the work programme.”<sup>122</sup>

#### 4.2.5 Cooperation on Justice and Home Affairs aims at traditional security

The different policies addressing various structural threats are complemented by the cooperation of EU Member States on Justice and Home Affairs (JHA). This policy was shaped by the three 5-year programmes adopted in Tampere in 1999; Den Haag in 2004; and Stockholm in 2009 respectively. At their Tampere Meeting in 1999 the EU summit of the leaders of the then 15 Members States launched the EU’s Justice and Home Affairs (JHA) policies. The goal was to make the EU in addition to a single market and an economic and monetary union also an "area" of freedom, security and justice. To this end, EU countries would, henceforth, cooperate on issues of asylum and migration; create a common area of justice, including the formulation of a European Charter of Fundamental Rights;<sup>123</sup> fight organized crime within the Union and across borders.

The Hague Programme of 2004 aimed mainly at setting up a common immigration and asylum policy for the then 25 EU member states.<sup>124</sup> Importantly, EU leaders agreed to use qualified majority decision-making and co-decision in the fields of asylum, immigration and border control issues – thereby effectively moving the policy to the First Pillar – while legal immigration remained subject to the rule of unanimity.

In December 2009 the EU Council is expected to adopt the Stockholm Programme. The Commission Communication from June 2009 sets out to develop an “internal security strategy” emphasising the need for close coordination between this new strategy and the aforementioned European Security Strategy.<sup>125</sup> The Commission remains vague as to the substance of the strategy and also a Council committee on home affairs, as envisioned by the Lisbon Treaty, is not mentioned in the

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<sup>122</sup> Council of the European Union, 'Council Decision of 19 December 2006 Concerning the Specific Programme "Cooperation" Implementing the Seventh Framework Programme of the European Community for Research, Technological Development and Demonstration Activities (2007 to 2013)', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:400:0086:0242:EN:PDF>>, accessed 4 November 2009.

<sup>123</sup> European Parliament, 'The Charter of Fundamental Rights of the European Union', <[http://www.europarl.europa.eu/charter/default\\_en.htm](http://www.europarl.europa.eu/charter/default_en.htm)>, accessed 5 November 2009.

<sup>124</sup> European Council, 'Presidency Conclusions Brussels European Council, the Hague Programme', <<http://www.consilium.europa.eu/uedocs/cmsUpload/14292-r1.en04.pdf>>, accessed 2 June 2009.

<sup>125</sup> European Commission, 'Communication On "An Area of Freedom, Security and Justice Serving the Citizen"-Com/2009/0262 Final', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0262:FIN:EN:HTML>>, accessed 7 November 2009.

Communication. The Programme will continue the cooperation on the issues data and information exchange, asylum, border protection, and migration.<sup>126</sup>

## 5 HOW ARE THE MAIN ORGANIZATIONS/INSTITUTIONS CHANGING?

Despite the fact that the creation of the European Union has fundamentally altered the security situation in Europe, governments continue to be the main security actors. Mainly within the EU they have created several EU institutions and organizations to support them in the development and implementation of the policies discussed above. The Commission is the most important organization in this respect, as it addresses many of the functional security challenges and contributes to ESDP as well. The Lisbon Treaty introduces a number of institutional changes that will affect the ability of the Union to conduct its security and defence policies. However, for a precise assessment of these consequences it is still too early.

### 5.1 National governments continue to be the main security actors

National governments still play the central role in the definition and implementation of security and defence policy. At least the major EU countries formulate their defence policy mainly independent of each other and based on their own national analysis. They are independent members in most international organizations such as the UN and follow an independent voting. Moreover, most EU members are also part of NATO and see the transatlantic organization as the main guarantee for their defence.<sup>127</sup> The attempt to anchor a common defence clause in the Lisbon Treaty during the European Convention in 2001/2 did not fully succeed, as only a “soft” mutual defence clause was agreed upon.

As a result, security policies are coordinated in several institutions with often have overlapping functions and competition, especially between the EU and NATO. This has in the past often pitted more “Europeanists” EU governments against more “Atlanticists” ones.<sup>128</sup> The “Berlin Plus” agreement signed in 2003 addressed the issue of how the EU could avail itself of NATO assets to run its crisis management operations independently. Also the return of France to the integrated military command of NATO is suitable to ease the tensions between both organizations, albeit their relationship remains contested.

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<sup>126</sup> Kietz and Parkers, *Das Stockholmer Programm. Schwierige Weichenstellung in Der Europäischen Justiz- Und Innenpolitik - Swp Aktuell 51, August.*

<sup>127</sup> NATO has 26 members since 29 March 2004: Six countries, namely Austria, Finland, Ireland, Sweden, Cyprus and Malta, are members of the EU without being members of NATO. Five NATO members are not part of the EU: Canada, Iceland, Norway, Turkey, and the US.

<sup>128</sup> See, among others, J. Howorth and J. Keeler, *Defending Europe: The Eu, Nato and the Quest for European Autonomy* (Basingstoke: Palgrave, 2003).

Within the EU the national prerogative has been visible not only at crucial points of recent European history such as the wars in the Balkans in the 1990s or the war in Iraq, where the political reactions and the policies subsequently pursued differed widely among EU Member States.<sup>129</sup> Even in cases where the EU as a whole acts the operations and policies are formulated in what has been called the Second Pillar, characterized by intergovernmental decision making.

## 5.2 Governments established an ESDP “Council Machinery”

In December 2000 EU Heads of State and Government established several permanent political and military structures to enable the EU to assume its responsibilities for crisis management. They comprise in particular the following bodies:<sup>130</sup>

The **Political and Security Committee** (PSC, better known by its French acronym “COPS”) brings together representatives of Member States at ambassadorial level. It is the preparatory body for the Council of the EU. Its main tasks are following the international developments, and assisting to define policies, and to prepare coherent EU responses to international crises.<sup>131</sup>

The **European Union Military Committee** (EUMC) is a department of military officials under the High Representative and the Political and Security Committee (PSC). As the highest military body it is composed of the Chiefs of Defence of the Member States. They give advice and recommendations on all military matters within the EU to the PSC and oversee the EU Military Staff.<sup>132</sup>

The **EU Military Staff** is composed of military and civilian experts seconded to the Council Secretariat by the Member States and directly attached to the private office of the High Representative. It is responsible for supervising ESDP military operations and advises the EUMC on questions of early warning, situation assessment, and strategic planning.<sup>133</sup>

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<sup>129</sup> Philip Gordon and Jeremy Shapiro, *Allies at War. America, Europe, and the Crisis of Iraq* (New York: McGraw Hill, 2004). Anan Menon, 'From Crisis to Catharsis: ESDP after Iraq', *International Affairs*, 80/4 (2004), 631-48.

<sup>130</sup> European Council, 'Esdp Structures and Instruments', <<http://www.consilium.europa.eu/showPage.aspx?id=279&lang=en>>, accessed 22 November 2009.

<sup>131</sup> European Council, 'Council Decision of 22 January 2001 setting up the Political and Security Committee (2001/78/Cfsp)', <[http://www.consilium.europa.eu/uedocs/cmsUpload/1\\_02720010130en00010003.pdf](http://www.consilium.europa.eu/uedocs/cmsUpload/1_02720010130en00010003.pdf)>, accessed 22 November 2009.

<sup>132</sup> European Council, 'Council Decision of 22 January 2001 setting up the Military Committee of the European Union (2001/79/Cfsp)', <[http://www.consilium.europa.eu/uedocs/cmsUpload/1\\_02720010130en00040006.pdf](http://www.consilium.europa.eu/uedocs/cmsUpload/1_02720010130en00040006.pdf)>, accessed 22 November 2009.

<sup>133</sup> European Council, 'Council Decision 2005/395/Cfsp of 10 May 2005 Amending Decision 2001/80/Cfsp on the Establishment of the Military Staff of the European Union', <[http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l\\_132/l\\_13220050526en00170024.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l_132/l_13220050526en00170024.pdf)>, accessed 22 November 2009.

The **Committee for Civilian Aspects of Crisis Management** (CIVCOM) works in parallel with the EUMC and advises the Political and Security Committee on civilian aspects of crisis management.

The **Civilian Planning and Conduct Capability** (CPCC) is the permanent structure responsible for an autonomous operational conduct of civilian ESDP operations.<sup>134</sup>

### 5.3 Council Agencies support the cooperation of governments

The Council has set up several Agencies that support the Council and Member States's governments in the implementation of the different security policies.

**EDA**, Later on, in 2004 the European Defence Agency (EDA) has been established under the authority of the Council of the European Union, mainly because previous attempts outside the EU framework to coordinate defence procurement did not achieved satisfactory results, and the ESDP acceleration required adequate military capabilities . EDA shall promote harmonization of operational needs and procurement methods; propose multilateral projects to fulfil the objectives on military capabilities; coordinate national programmes and manage cooperation programmes; support defence technology research, coordinate and plan joint research activities; contribute to strengthen the industrial and technological basis of defence sector and to improvement of military expenditure effectiveness.

**EMSA** is the European Maritime Safety Agency. It was established in 2008 and is to “contribute to the enhancement of the overall maritime safety system in the Community”.<sup>135</sup> Its goals are to decrease the risk of maritime accidents, marine pollution from ships and the loss of human lives at sea. EMSA does so by supporting the EU Member States at their request in the implementation of EU legislation. It will also monitor the effectiveness of this legislation and assist the work between MS and Commission. EMSA carries out conceptual, informational, and facilitative activities such as developing methodologies e.g. for the investigation of maritime accidents; setting up a Community wide vessel traffic monitoring system; or auditing EU-recognized classification societies.<sup>136</sup>

**EUROPOL** was set up in 1999 to “improve the effectiveness and co-operation between the competent authorities of the member states primarily by sharing and pooling intelligence to prevent and combat serious international organized crime”. Later its mandate was extended to contribute to the fight against terrorism. Europol is not entitled to conduct investigations or arrest people but rather to support national authorities in this regard ().

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<sup>134</sup> European Council, 'Introducing Cpsc', *ESDP Newsletter*, 6/July (2008), 24-25.

<sup>135</sup> European Council, 'Regulation (Ec) No 1406/2002 of the European Parliament and of the Council of 27 June 2002 Establishing a European Maritime Safety Agency', <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:208:0001:0009:EN:PDF>>, accessed 12 August 2009.

<sup>136</sup> Emsa, 'The European Maritime Safety Agency : Its Origin and Its Tasks', <<http://www.emsa.europa.eu/end179d002.html>>, accessed 12 August 2009.

**EUROJUST** was established in 2002 to enhance the effectiveness of national authorities “dealing with the investigation and prosecution of serious cross-border and organised crime” by stimulating and improving “co-ordination of investigations and prosecutions”. “Eurojust hosts meetings, with translation facilities, between investigators and prosecutors from different states dealing with individual cases and at a strategic level and specific types of criminality” ().

**FRONTEX** is an “independent body tasked to coordinate the operational cooperation between Member States in the field of border security”, set up in 2004. It promotes a pan European model of Integrated Border Security, consisting of four tiers: “The first tier of the model is formed by exchange of information and cooperation between Member States, immigration and repatriation. The second tier is represented by border and customs control including surveillance, border checks and risk analysis. The third tier is linked with cooperation with border guards, customs and police authorities in neighbouring countries. The fourth tier is connected with cooperation with third countries including common activities” ().

#### ***5.4 Commission has formulated policies affecting security and defence***

While formally the European Commission has mandate to directly address issues of security and defence policy, it has effectively started to do so through its competences for the common market and for research policy. Thereby the competences are distributed among several Directorate Generals (DGs). Since the distribution of tasks has not entirely been fixed for the future Commission yet, we will in the following refer to the first “Barosso Commission” from 2004 to 2009.

DG Enterprise and Industry (DG ENTR) has played the strategically most important part. In several Communications since 1996 it has stressed the need for Community action with regard to what it called the “European defence-related industry”.<sup>137</sup> Proclaiming the goals of creating a “seamless European defence equipment market” and of “strengthening the European Defence Industrial and Technology Base” DG ENTR has initiated numerous activities in areas as diverse as standardization, intra-Community transfers, procurement, or research and technology cooperation. While until 2004 DG ENTR has focused its activities on defence-related industries, it has lately also started to address issues of the security industry, for example by initiating and managing the FP7 Security Theme. In this context the Commission has set up two forums at the European level: ESRAB and ESRIF. The latter is devoted to the development of a Public-Private Dialogue in the area of EU security research and innovation. It aims at providing guidance to and beyond FP7 security research, in order to meet long term security research needs through national, EU and private investments.

Through the management of the Framework Programme DG RESEARCH has promoted the research and development of dual-use technologies i.e. those

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<sup>137</sup> For an overview see Enterprise and Industry-Defence Industries European Commission, 'Reference Documents', <[http://ec.europa.eu/enterprise/sectors/defence/documents/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/defence/documents/index_en.htm)>, accessed 21 March 2009.

technologies that can be applied for military and civil purposes. The European Commission noted in the mid 1990s that this accounted for a significant part of all projects funded under the Framework Programme. While this DG Research also manages part of the security research activities such as the research for the protection of critical infrastructure or transportation systems,<sup>138</sup> it is DG ENERGY that coordinates all other measures of the Commission's activities on the protection of critical infrastructure and on energy security.

DG MARKT has affected S&D policy mainly through its Procurement Directive, which was adopted in July 2009.<sup>139</sup> It sets Community rules for the procurement of arms, munitions and war material, including related works and services for defence and security purposes. The Commission holds that this Directive can be applied to the vast majority of defence and security procurement contracts without impeding on the legitimate security interests of EU Member States. Hence, governments who have two years to implement the Directive won't be able to except as many procurement contracts from EU wide competition as they did in the past. The Directive is complemented by an intergovernmental regime agreed upon by the participating Member States of the EDA.<sup>140</sup>

Since 2001 the EU has operated a Civil Protection Mechanism, which is run by the European Commission and located in DG ENVIRONMENT. It coordinates the activities of 30 European countries, in particular their assistance to disaster-stricken countries, inside or outside the EU. The assistance can take several forms such as the provision of assets needed to save lives and to alleviate suffering in the first days of a disaster. These typically include search and rescue equipment, medical services, temporary shelter, or sanitation equipment. Through this mechanism EU countries assisted the countries hit by the tsunami in South East Asia in December 2004 or by the earthquake of October 2005.<sup>141</sup>

### **5.5 Lisbon Treaty implications for S&D policy are not yet discernable**

The Lisbon Treaty brings about several changes in the European institutional framework, which might affect S&D policy. First, it has introduced the President of the European Council, elected by the Member States for two years and half. Such president has to cooperate with the Commission President and the High

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<sup>138</sup> 60% of the resources of the Security Theme of FP7 are managed by DG RESEARCH, with the remainder being overseen by DG ENTR.

<sup>139</sup> European Commission, 'The Eu Single Market: Defence Procurement', <[http://ec.europa.eu/internal\\_market/publicprocurement/dpp\\_en.htm#green](http://ec.europa.eu/internal_market/publicprocurement/dpp_en.htm#green)>, accessed 7 August 2007.

<sup>140</sup> While the Directive is legally binding, the Code of Conduct (CoC), which is the basis for the EDA regime is only politically binding; the Directive extends to the majority of defence and security products services and the CoC covers defence equipment purchases where the provisions of Article 296 of the EC Treaty are applicable, albeit some products like cryptology or nuclear propulsion systems can still be excluded from any of the two EU level procurement framework. EDA, 'The Code of Conduct on Defence Procurement', <<http://www.eda.europa.eu/genericitem.aspx?area=Organisation&id=154>>, accessed 6 February 2006.

<sup>141</sup> European Commission, 'European Civil Protection',

Representative for foreign and security policy to ensure coherence and cohesion of the EU action on the international stage. The High Representative position has been strengthened by the Treaty: he is responsible for the EU foreign, security and defence policy, chairs the External Affairs Council, is the deputy president of the Commission and the head of EDA. It is still unclear how this new institutional arrangement would change the management of the EU security and defence policy, and it will depend on the personality of the next President and High Representative as well as on their capacity to cooperate among them and with the Commission.

The Treaty also introduces the European External Action Service (EEAS) aimed to provide the administrative instruments for the European foreign and security policy, which might increase the civil-military cooperation.

Another novelty is the “Permanent Structured Cooperation” (PSC): within the EU framework, it could be set up by “those Member States whose military capabilities fulfil higher criteria and which have made more binding commitments to one another in this area with a view to the most demanding missions.” Particularly relevant is the Protocol n. 10 “on Permanent Structured Cooperation Established by Art. 42”, which defines as objectives of such cooperation to proceed more intensively to develop defence capacities, in order to be able to supply targeted combat units for the extended Petersberg Tasks. Such tasks have been extended by the Art. 43 including joint disarmament operations, humanitarian and rescue tasks, military advice and assistance tasks, conflict prevention and peace-keeping tasks, tasks of combat forces in crisis management, including peace-making and post-conflict stabilisation.

Moreover, permanent structured cooperation has great potential for the development of military capabilities, setting up criteria and allowing the EDA to assess member states performance. This potential may result in accelerated transformation towards expeditionary operations, especially if combined with various forms of cooperation and pooling. In contrast, no civilian dimension is foreseen by this provision.

The implementation of permanent structured cooperation might imply an important reinforcement of the EDA role, which has also been strengthened by the Lisbon Treaty. In fact, the Treaty provides a more solid legal basis for the Agency than the 2004 Council joint Action. Thus Art. 42 makes explicit its strategic goals to create more common ground for European defence procurement and to enhance the related industrial and technological base.

## **6 WHAT ARE THE RELATIONSHIPS BETWEEN SECURITY DYNAMICS AND THE OTHER THEMES?**

The focus of this section is on the relationship between EU security and defence policies and policies for the ERA. One of the key themes of the SANDERA proposal was that, at one level, there is, at least in explicit terms, a “non-relationship” between ERA policies and EU security and defence policies. Indeed, this point is made very strongly in the Scoping Paper on ERA Dynamics.

However, we have noted some “silent” institutionalisation of this relationship, not least through the Seventh Framework Programme’s Security Research theme. At the same time, we emphasise in this section that broader developments in knowledge dynamics (the focus of the Knowledge Dynamics Scoping Paper) mean that there is

an implicit relationship between the policy communities. Equally, we emphasise that the weak relationship between the two policy areas opens up the potential for policy actions undertaken in one field to have unanticipated and potentially undesirable consequences for the other policy field.

### **6.1 Policy goals and rationales**

The discussion in this Scoping Paper has emphasised that European defence policies and European security policies must be considered as separate entities. We have noted that European defence policies comprise those policies associated with the ESDP. These are primarily related to peace keeping and peace enforcement and have been primarily intergovernmental in character. European security policies are more diverse and relate to a variety of issues including counter terrorism, critical infrastructure protection, border control and so forth. The different programmes agreed by EU Ministers of the Interior in Tampere (1999), The Hague (2004), and now in Stockholm have attempted to provide coherence to these policies.

What is striking is that there appears to be an asymmetrical relationship between European security and defence policies and policy for the ERA. On the one hand, the Scoping Paper on ERA Dynamics emphasizes that the ERA policy has been developed with very little reference at all to defence and security policies, even though defence is an important element of the science, engineering and technology base of some European Member States and even though it is an important and growing area of policy action at the European level.

On the other hand, this Scoping Paper has noted already how – even if the concept of the ERA is not mentioned – it is clear that engagement with those institutions and activities that are at the core of the ERA is seen as increasingly important by the European security and defence policy communities if they are to achieve their own policy goals. Thus, we have noted how the European Security Strategy emphasizes the creation of a European security culture and the engagement of all the tools at the disposal of the European Union. This Scoping Paper and our Background Paper on Defence and Security R&T in Europe has also noted the growing efforts of the European security and defence policy communities to enter into relationships with the ERA through the FP7 security research theme and the new organizational relationships between the European Defence Agency and the Framework Programme.

More generally, this Scoping Paper has also noted how changes in knowledge dynamics mean that the defence and security community are increasingly concerned about “dangerous knowledge” and see controls and restrictions of the diffusion of such knowledge as an important issue if they are to achieve their policy goals.

### **6.2 Resource flows**

There are resource flows from security and defence to the ERA even if this has not been recognized – or admitted – by the ERA policy community. In some European Member States, government defence R&D spending remains important to the funding of some areas of technological activity, including university research and training as well as some specialized facilities. Aeronautical engineering is the most obvious example. Of course, it should be emphasized that defence and security science and technology capabilities in Europe are concentrated in a relatively few Member States:

98 per cent of government spending on defence R&T is concentrated in the sixth largest defence industrial countries in the EU and 75 per cent is accounted for by the UK and France alone.<sup>142</sup>

There are also resource flows from the ERA to security and defence. Although the Framework Programme has been formally civilian in focus, it has long been recognised that the Framework Programme had a strong “dual use” dimension such that investments in some science, engineering and technology areas had benefits for both the civilian and military sectors. Under FP6 and FP7, the Framework Programme has funded dual use technologies in aeronautics and secure telecommunication and safety of IT networks. In space, the Commission has funded the Galileo programme and the Global Monitoring for Environment and Security (GMES) programme both of which have security (and defence) applications.

Under FP7, there is a more explicit resource flow from the ERA to security policy in the form of the civil security research theme of FP7 (we discussed the details of this programme in an earlier section of this Scoping paper and a detailed discussion can also be found in our SANDERA Background Paper). The growing importance of generic technologies combined with constraints on European defence R&D budgets mean that defence is moving towards a more “open innovation” model which is increasingly dependent upon non-defence sources of technology and therefore the ERA.

### **6.3 Organizational relationships**

In the security field, the establishment of the security research theme within the Seventh Framework Programme provides an explicit link between the ERA and the security agenda. As mentioned above, this has brought security concerns – and security stakeholders and users – into the Framework programme and has led to some subtle but important innovations in governance that set it apart from other elements of FP7.

At the same time, however, it ought to be noted that user engagement has proved challenging since most of the users of the outputs of the FP7 security research theme are either national governments or local or sub-national public authorities. Overcoming the gaps between European funding and national and local users means that whilst the ERA (through the Framework Programme) may have entered into the security arena, the relationship must be regarded as somewhat weak at present.

In the defence field, there is an increasingly institutionalized relationship between the European Defence Agency’s R&D activities and the European Commission (Framework Programme). In 2009, moves began to establish a more formal institutional relationship with discussion of an EDA-Commission European Framework Cooperation for Security and Defence. This builds on existing ad hoc cooperation on programmes such as Software Defined Radio and the insertion of UAVs into civil airspace.

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<sup>142</sup> Eda, 'European - United States Defence Expenditure in 2006', <<http://www.eda.europa.eu/facts.aspx>>, accessed 22 December 2007.

#### **6.4 Regulatory frameworks**

Regulation of science activity has turned out to be an issue because science and technology are not merely considered as means for S&D policy anymore but have become subject of S&D policy.

The aforementioned increased reliance of our societies on technology and their proliferation pose risks that are the result of our decisions, taken in good faith but which can have unintended negative consequences for our security. Nuclear science chemistry, biology, in particular molecular biology and genomics but also computer science and electronics are not only subject in which knowledge for mastering the world and making it a safer place for mankind is generated but that knowledge and its peaceful use themselves have become risks for our societies. What is meant here is not (only) a danger of science at the hand of a malicious adversary but a danger *qua* use and reliance upon science and its output.

Consequently, science becomes a subject of security policy. Scientific knowledge loses its neutral status, as its results do not merely imply improved security or higher welfare but also increasing risks to security of the society using a particular technology. The security risks implied clearly go beyond the aspect of safety, as it makes a fundamental difference whether a thermal or a nuclear power station is bursting; whether a virus is spreading in an industrial or a highly networked world; whether information is circulated sequentially via cable or instantly in video and audio. The risk of science and technology is not inherent in science itself but only emerges in interaction of science with society, i.e. is a result of our way of life, the way we organize ourselves and the its vulnerabilities that creates.

Regulatory relationships can be formal and informal. National security concerns regulate the conduct of science and the diffusion of some kinds of knowledge. There is regulation of the transfer of some technologies to third countries based on Member States regulations and the EU Arms Export Control regulations which raise the possibility of tensions with the ERA vision of scientific and technological openness. Equally, there are a number of international agreements that regulate WMD such as the Biological and Toxin Weapons Convention (BTWC). Concern about the threat of dual-use technology diffusion has led some Member States to develop new regulations such as on the security of pathogens and toxins held in laboratories and on the vetting of foreign students entering universities.

Concerns about “dangerous knowledge” have also led to new efforts at self-regulation not least amongst the life sciences community. Thus, there have been efforts on the parts of the learned societies and professional scientific bodies to increase awareness of the dual-use potential of some knowledge. There have also been debates about establishing a professional ethical “Code of Conduct” for bioscientists and others associated with the life sciences.

#### **6.5 Membership of policy-making communities**

At the European level, the two policy communities – security on the one hand and ERA on the other – remain more or less isolated from one another with very different policy priorities and very limited connections to one another. Thus, the membership of the bodies that have driven FP7 security research priorities were comprised almost entirely of experts and representatives from the security community. This is

increasingly recognized as a problem. The European Commission funded FORESEC project has emphasized the failure of the security foresight community to engage experts from outside the security community – as well as civil society.

## 7 WHAT ARE THE MAIN DRIVERS OF CHANGE IN RELATIONSHIPS?

In the previous section, we sought to identify the relationships that exist between European security and defence policies and policy for the ERA. We will now consider potential drivers of change in those relationships in the future. We will do so through a meta-analysis of the findings – explicit and implicit – of a number of security foresight studies. The following sections should be considered as sketches rather than postulations. Their hypothetical character requires that they be further elaborated, qualified, and validated in the subsequent stages of the SANDERA project.

### 7.1 *International system likely to become increasingly multi-polar*

Let us begin by considering some of the drivers of continuity and change in the future international security environment. The world is likely to become increasingly multi-polar in its geopolitical structure.<sup>143</sup> In this world power will be more dispersed, as some countries can be expected to reposition themselves due to continued globalization and non-state actors will increase their significance. Globalization will continue to shift wealth and economic power from West to East. Rising commodity prices will create continuous windfall profits for Gulf states and Russia and the centre of gravity of manufacturing will move to Asia.

Though the United States will remain the single most powerful country it will be less dominant. Europe will in economic terms be bigger than China or India but will struggle to retain economic growth due to decreasing work age population. Moreover, China's economic and scientific superpower status will be accompanied by a growing military presence (at least in the Pacific) and resource-based interests in Africa.<sup>144</sup>

#### Implications for relationships S&D policy and ERA:

The challenge posed to the relationship between S&D policy and the ERA by this driver is to efficiently organize itself and increase its scientific quality and competitiveness vis-à-vis the rest of the world despite of the budget constraints. This issue has a security dimension as well, because the scientific, industrial, economic and social strength and competitiveness is necessary to be a strong international actor and to support an effective security and defence policy.

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<sup>143</sup> DAS, *Geostrategic Prospectives for the Next Thirty Years. Report Made under the Direction of the Délégation Aux Affaires Stratégiques* (Paris: Délégation aux affaires stratégiques, 2008).; Nic, *Global Trends 2025: A Transformed World* (Washington D.C.: National Intelligence Council, 2008).; Italian Ministry of Foreign Affairs, 'Rapporto 2020: La Scelte Di Politica Estera', (Rome: Italian Ministry fo Foreign Affairs, 2008).

<sup>144</sup> Nato, *Future World Scenarios* (Brussels: NATO, 2006).

A potential consequence might concern a tension between S&D policy and policies concerning the ERA. The latter has the goal to engage with the scientific and technological dimension of China (“China as opportunity”). However, EU security policy which may become increasingly focused on the security dimension of the relations with China, including dual use technology transfers (“China as threat”).

## **7.2 New forms and dimensions of warfare are expected to emerge**

Several studies note that future warfare will take on new forms and is likely to take place in new dimensions. The adoption of irregular warfare tactics by both state and non-state actors as a primary war fighting approach in countering advanced militaries will be a key characteristic of conflicts in 2025 and beyond. This might include measures as varied as insurgency methods attacking infrastructure but also activities of state actors harming e.g. space assets.<sup>145</sup>

In addition, conflict will take place in new environments such as cyberspace, the high seas, near space, and increasingly, in expanding cities. Sprawling, rapidly and chaotically urbanized areas, especially in the developing world, which lack basic infrastructure or municipal order, will provide havens in which criminals, terrorists and insurgents will shelter and organize, and from which they will launch operations.<sup>146</sup>

### Implications for relationships S&D policy and ERA:

This driver is likely to affect particularly the goals and rationale relationship between S&D policy and the ERA. Thus, the entire tools set of comprehensive security approach can be assumed to be examined as to its effectiveness by researchers. So has the effectiveness of developmental aid that the EU offers. To what extent does development aid indeed allow for the evolvement and sustainment of structures in the “developing countries” given that a major part of developmental aid is channelled back to the Western countries?

Moreover, if a comprehensive approach of security will continue to underlie ESDP then research can be expected to address causes of conflict as well as the means to manage them. Herein the cultural, historical roots of conflict should deserve further attention. It can, therefore be expected that the focus of ERA activity will significantly shift towards these subjects.

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<sup>145</sup> Dcdc, *The Dcdc's Global Strategic Trends Programme 2007-2036. Report Prepared by the UK Ministry of Defence Development, Concepts and Doctrine Centre (Dcdc)* (Shrivenham: DCDC), Nic, *Global Trends 2025: A Transformed World*.

<sup>146</sup> Dcdc, *The Dcdc's Global Strategic Trends Programme 2007-2036. Report Prepared by the UK Ministry of Defence Development, Concepts and Doctrine Centre (Dcdc)*, Dicod, *Préparer Les Engagements De Demain 2035* (Paris: Délégation à l'Information et à la Communication de la Défense, 2007), Nic, *Global Trends 2025: A Transformed World*.

### **7.3 Divergent demographic developments may put EU at a disadvantage**

The world's demographic development will vary among the different regions and it will be to the disadvantage of the EU. Asia, Africa, and Latin America will account for virtually all population growth over the next 20 years amounting to 1.2 billion more people by 2025.<sup>147</sup> In combination with continued economic growth this will significantly increase demand for energy, food, and water resources and amplify the problem of climate change. In countries with significantly more young males than females ("youth bulge") economic and social institutions need to develop in order to avoid that these countries (in particular Afghanistan, Nigeria, Pakistan, and Yemen) continue to be prone to instability and internal conflict.<sup>148</sup>

Europeans will by 2025 comprise a mere 6% of the world's population, as the EU will in particular be held back by low fertility rates (currently 1.5). The population may remain roughly stable, balanced by lower mortality and greater longevity. It is estimated that by 2025 the effective economic old age dependency ratio (retired over 65s as a percentage of the working population aged 15-64) will have risen from 37% to 48%; and the average European will be 45 years old.<sup>149</sup>

#### Implications for relationships S&D policy and ERA:

The changed demographic structure of the EU's population could have a variety of consequences on the relationship between S&D policy and the ERA.

First, it can be expected to change the attitude towards technological innovation. Thus older people generally place a premium on security and on protecting what they have achieved than younger people. They can be expected to be less interested in innovation than a younger population. This could impact on the distribution of public finances, with increasing health care and pension costs at the expense of defence.<sup>150</sup> Also within science and technology it can be assumed that innovation will be steered towards contributing to the solution of societal problems that might not coincided with security and defence technological needs.

Moreover, it can be assumed that this driver will accelerate the aforementioned shift from defence to security. Especially, an aging population can be anticipated to be more concerned with security than expeditionary defence issues. The close media coverage and an associated casualty aversion as well as the challengeable legality and legitimacy of some interventions will further caution support for such missions as compared to a focus on homeland security. ERA capacities with their overwhelming

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<sup>147</sup> Uno, *A More Secured World: Our Shared Responsibility. Report of the High-Level Panel on Threats, Challenges and Change* (New York: United Nations, 2004).

<sup>148</sup> Dcdc, *The Dcdc's Global Strategic Trends Programme 2007-2036. Report Prepared by the Uk Ministry of Defence Development, Concepts and Doctrine Centre (Dcdc).*; Nic, *Global Trends 2025: A Transformed World*.

<sup>149</sup> Eda, *An Initial Long-Term Vision for European Defence Capabiliy and Capacity Needs* (Brussels: EDA, 2006).

<sup>150</sup> Future public benefits to the elderly in the EU could rise from today's spectrum of 11-16% of national GDPs to 17-33% over the next 4 decades Ibid.

civilian interest and focus would in such a situation become more relevant for security and defence policy. It will be in the interest of defence establishments to benefit from (and co-finance at least) the wide array of security-relevant civilian research.

The latter can be expected to have a double effect on the ERA: on the one hand, traditional military-technological research of the kinetic cause-effect-relation will give way to more knowledge-oriented research. On the other hand, the societal consequences of interventions, civil and military, require more focus in future security research efforts.

Finally, the aging of Europe's people will lead to fierce competition for young and skilled workers. This holds as much for security and military forces as for engineers, as they compete for talent in the same age group (16 to 30 year old). The size of this group will, however shrink by over 15% by 2025.<sup>151</sup>

#### **7.4 Widespread availability of new technologies may fuel proliferation risks**

It is assumed that technological development will continue to be mainly commercially-led, driving innovators and entrepreneurs to identify and produce as many applications of new technologies as possible. Only certain sensitive, niche, high cost/high impact programmes will continue to be conducted by military or governmental agency.<sup>152</sup> "The outcome is increased proliferation of available smart and creative technologies (as opposed to emerging technologies not yet available) that could be easily adapted to security applications (e.g. remote screening, control, communication, protection, new types of sensors, to name just a few)."<sup>153</sup>

The diffusion of the knowledge underpinning Weapons of Mass Destruction, of dual use knowledge in the life sciences that has the potential to be applied to biological weapons is frequently noted and discussed. In addition, terrorists and/or criminals might abuse new emerging technologies for their purposes. This concerns in particular the output of robotics, nano-technology in combination with medicine, cognitive science, sensors, networks and smart materials.<sup>154</sup> This driver is supported also by a trend that innovation, research and development will originate from more international and diffuse sources and will proliferate widely, making regulation and control of novel technologies more challenging.<sup>155</sup>

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<sup>151</sup> Ibid.

<sup>152</sup> Dcdc, *The Dcdc's Global Strategic Trends Programme 2007-2036. Report Prepared by the UK Ministry of Defence Development, Concepts and Doctrine Centre (Dcdc)*.

<sup>153</sup> Festos, 'Main Security Drivers Prepared by Ictaf for Iknow Workshop, Helsinki, 1-2.12.2009', (Helsinki, 2009).

<sup>154</sup> Das, *Geostrategic Prospectives for the Next Thirty Years. Report Made under the Direction of the Délégation Aux Affaires Stratégiques*, Italian Ministry of Foreign Affairs, 'Rapporto 2020: La Scelte Di Politica Estera', UK Ministry of Defence, *UK Science and Technology Strategy for Countering International Terrorism* (London: UK Ministry of Defence, 2009).

<sup>155</sup> Dcdc, *The Dcdc's Global Strategic Trends Programme 2007-2036. Report Prepared by the UK Ministry of Defence Development, Concepts and Doctrine Centre (Dcdc)*.

### Implications for relationships S&D policy and ERA:

The implications for the relationships between S&D policy and the ERA are threefold and concern mainly the policy goal, organizational, and framework relationships. First, the risk of proliferation might be used to justify the securitization of parts of the ERA. By securitization we mean that research activities are shielded behind a veil of secrecy. This would require a tight control of the involved researchers, resources, and infrastructures. It might have negative effects on the effectiveness of the ERA in other domains that are not concerned with S&D research.

Second, this driver might lead to increased research activities concerning international safeguarding measures against the proliferation of technology. It might also imply institutionalization of research cooperation between the EU and other countries in an attempt to stem proliferation.

Finally, the risk of an abuse of emerging technologies by terrorist and/or criminals might lead to a totally new accompanying field of research: the investigation of unintended consequences and of potential harmful application of innovations. EU governments will have an interest to know what they have to potentially prepare for. Thus the current FESTOS project investigates which technologies might in the future be abused for undermining our security. The ERA will be faced with a paradox: on the one hand, to develop the technologies and applications in order to provide security; on the other, to examine the possible abuse of those technologies in order to prepare for meeting the security challenge (and to develop again new technologies that would help therein). Also the epistemological, political, and ethical issues would require due consideration.

### **7.5 Rising reliance of society on technologies may increase vulnerabilities**

We have already mentioned above the growing dependence of our societies on increasingly interdependent and internationally connected infrastructures. This holds specifically in the case of information and communication technologies. A number of security foresight studies note how critical infrastructure and supervisory control and data acquisition technologies may be vulnerable to deliberate or accidental failure due to their dependence on networked information and communication technologies.<sup>156</sup>

### Implication for the relationship with the ERA:

This driver can be expected to particularly impact on the policy goal relationship. Future critical infrastructures will need to take into account security requirements from their initial design and development phases through to their installation, utilization and maintenance stage.

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<sup>156</sup> Academy of Finland and Tekes, *Finnsight 2015 - the Outlook for Science, Technology and Society* (Helsinki Academy of Finland, 2006), Iscom, *Network Security in Critical Infrastructures* (Rome: Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione, 2005), Uk Ministry of Defence, *Uk Science and Technology Strategy for Countering International Terrorism*.

Effective infrastructure protection requires the close involvement of private actors. They do not only own but, more importantly, operate and further develop infrastructure facilities. Private owners will follow a business rationale that does not always fit easily with public interests. In the current situation, security is mainly dealt with as “operational safety” i.e. the technical functioning of installations and as (internal) corporate security.

Institutional mechanisms will need to be developed that allow innovation and free exchange between public and private research organizations, on the one hand, but safeguard the critical knowledge on the other.

### ***7.6 Rising significance of space for S&D policy may open up new frontier***

In the future space will become even more important as new applications will be launched into orbit.<sup>157</sup> New technologies will provide new or improved functions such as navigation, positioning, surveillance, targeting, timing, monitoring, communicating, data transfer are required for civil and military security. Despite the military benefits of the weaponization of space, this has so far been too costly, and technologies are too sensitive and vulnerable.

#### Implications for relationships S&D policy and ERA:

This driver is likely to affect several dimensions of the relationship between S&D policy and the ERA. First, The link between ESDP and space can be expected to become stronger. More investments in space research, as EU and humanity face challenges such as climate change or arms control, verification of treaties (Kyoto Protocol) but also security challenges such as drug trafficking that can only be met with space assets. So far the EU has not established any borders of what it wants in space and what not with space being a typical dual-use technology. However, the EU will need to formulate – in cooperation with the research community – what type of policy it wishes to pursue in space.

Regarding policy goals and rationale, space, its exploration and use will put new topics on the agenda of researcher, political and societal in nature. It will also address new topics of security policy. Research will need to address the technological as well as the political and societal issues. So far the weaponization of space has been avoided due to the extraordinary cost of the technologies involved but also due to the deliberate political commitment of those states that would be able to pursue it. Though the latter type of states would be able to pursue a weaponization they also have an interest in avoiding it, as they have most assets in space, which would then be vulnerable to attacks.

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<sup>157</sup> Stephen Pullinger, 'Eu Research and Innovation Policy and the Future of the Common Foreign Security Policy. A Report Commissioned by the Science and Technology Foresight Unit of Dg Research, European Commission', (Brussels: ISIS Europe, 2006), Dicod, *Préparer Les Engagements De Demain 2035*.

Finally, the existing military and security tasks will need to be re-conceptualized to involve space assets if they can provide a useful complementary or more efficient/effective function such as the surveillance or communication of troops. Such functions could be beneficial due to the characteristics of space such as global availability; endless availability; little legal restriction.

### **7.7 Climate change likely to exacerbate existing conflict situations**

Climate change is said to have direct and indirect consequences for EU security. It is said to have a direct impact in terms of more violent weather events and rising sea levels.<sup>158</sup> However, climate change is mainly expected to intensify already stressed security situations, particularly in regions with weak institutions that are not able to mitigate or adapt to the changed climatic circumstances.<sup>159</sup> Climate change is likely to spur an increase in uncontrolled migration not least from Africa as the sub-Saharan region experiences increasingly prolonged droughts and famines. There is likely to be an increasing prevalence and frequency of human and animal pathogens as a consequence of climate change, international flows of people and socio-cultural change and this is likely to lead to an increasing number of global pandemics<sup>160</sup>

#### Implications for relationships S&D policy and ERA:

Climate change is most likely to shape the political goal and rational and resource flows relationships between S&D policy and ERA. On the one hand, enormous amount of public and private funds can be expected to be channelled into the research for technologies that can provide viable alternatives to fossil fuels or means to overcome food and water constraints.<sup>161</sup>

Moreover, security related issues of climate changes such as the reinforcement of sea shore defences might receive higher attention especially in the relevant countries such as the Netherlands.

More generally, security research might increasingly deal with issues of societal resilience as the ability of civilian communities to absorb shocks and bounce back become increasingly important not only for European societies but also for all those societies that are specifically vulnerable to the effects of climate change. The societal resilience perspective emphasises that technical measures – enhanced surveillance, intelligence gathering and better equipment for first responders – may have a part to play in the security of the citizen but our capacity to prevent, protect and respond to security events is strongly related to the resilience of our society.

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<sup>158</sup> Das, *Geostrategic Prospectives for the Next Thirty Years. Report Made under the Direction of the Délégation Aux Affaires Stratégiques.*

<sup>159</sup> Academy of Finland and Tekes, *Finnsight 2015 - the Outlook for Science, Technology and Society.*; Nic, *Global Trends 2025: A Transformed World.*

<sup>160</sup> Das, *Geostrategic Prospectives for the Next Thirty Years. Report Made under the Direction of the Délégation Aux Affaires Stratégiques.*

<sup>161</sup> “However, all current technologies are inadequate for replacing the traditional energy architecture on the scale needed, and new energy technologies probably will not be commercially viable and widespread by 2025” Nic, *Global Trends 2025: A Transformed World.*

### **7.8 Reduced public funds may shift priorities**

Over the next decade, high levels of public debt will drive significant cuts in public spending as governments seek to “balance the books” and retain the confidence of financial markets. With European citizens more inclined to favour “security” over “defence” spending and, with public finances under pressure from a growing pension burden and declining work age population, defence spending will have to compete with welfare spending for political attention. At the same time, we expect that defence inflation (both from rising labour costs and the increase in costs of defence equipment and services) will continue to grow at a faster rate than inflation in the wider economy.

#### Implications for relationships S&D policy and ERA:

In such a budgetary environment, European Member States are likely to attempt to minimise their defence burden and this may lead to cuts in defence spending and may also increase the willingness of Member States to consider cooperative equipment solutions and an increase in the share of collaborative defence research projects.

The implication for the relationship with the ERA – defence and security budget constraints are likely to see the defence and security community place a growing emphasis on accessing resources contained in the ERA, not least within the FP. This might take the form of a defence theme in FP8, for example or of increased funds of the EDA.

### **7.9 Competition for material and energy resources may rise tensions**

One of the major drivers for the future relationships between S&D policy and the ERA can be expected to be the geopolitical struggle over energy resources.<sup>162</sup> This can take three ways: first, states might use their control over energy resources for political coercion and influence. Second, terrorists and pirates might pose threats to transit routes calling for military protection of those routes, a situation we witness currently at the coast of Somalia. Finally, domestic instability and conflict within strategic energy producing states could trigger intervention from outside.<sup>163</sup>

#### Implications for relationships S&D policy and ERA:

The most likely impact will be on the political goals and rationales relationship i.e. this new security concern can be expected to lead to demand for new research into this topic. As a result of the future development of this driver the dealing with the risks resulting from disruption of resource supplies will contribute to the definition of research goals. Currently, this is not part of the agenda addressed by European defence research collaboration.

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<sup>162</sup> Das, *Geostrategic Prospectives for the Next Thirty Years. Report Made under the Direction of the Délégation Aux Affaires Stratégiques, Dcdc, The Dcdc's Global Strategic Trends Programme 2007-2036. Report Prepared by the Uk Ministry of Defence Development, Concepts and Doctrine Centre (Dcdc).*

<sup>163</sup> Nic, *Global Trends 2025: A Transformed World.*

## 8 CONCLUSION

In this paper we have argued that the security and defence policy of European countries has fundamentally changed since the end of the Cold War. A new paradigm has emerged that puts much more emphasis on security issues than on defence issues. In this development also the relationships between S&D policy and science and technology have altered. For the future the nowadays separately developing S&D policy and ERA policy can be expected to become much more interdependent.

In particular we have argued that until the end of the CW the security and defence policy of Western European countries was dominated by a focus on territorial defence and deterrence. By comparison the security sector dealing with internal security and the protection of the population figured much less visible in the thinking of strategists, in politics, and resource allocation. Science and technology was mobilized as a major means to counter the well-known military threats of a conventional or nuclear attack from the Soviet bloc. The defence of Western Europe was not organized in a European but rather in a Transatlantic framework under the leadership of the US within NATO. Though these were cooperative defence efforts, they only at the margins led to a collaboration on defence research and technology, which was mainly pursued at a national basis.

We have further shown that since the end of the CW the security environment has fundamentally changed: while the old defence threat has not entirely vanished but is much less likely to materialize. Instead, in an increasingly interdependent world, reliant on interconnected systems of technology and open transportation routes and with new actors, new types of threats and risks have appeared. These security challenges concern, for example, humanitarian crises and instabilities in far away regions, international organized crime and terrorism, but also the risk the disruption of the basic functions of society, of critical infrastructure due to man-made or natural disasters. Another fundamental change of the security environment concerns the decision of European states to form together the European Union to become an international actor on its own right.

As we have demonstrated, the security and defence community has responded to these changes in the security domain with a paradigm shift that has not been finalized yet. It implies an increased priority on security compared to defence and a conceptualization of the security challenges in terms of risk rather than threats. On the one hand, this means that the pace and proliferation of science and technology development are perceived not only as means for the provision of security anymore but as posing security risks on their own, which need to be addressed. On the other, we argued that many of the new risks are reliant on scientific knowledge and technology for their identification, perception, and explanation. Governments have responded with a comprehensive approach to security and by developing EU policies to complement national policies.

In this context we argued that despite the fact that the creation of the European Union has fundamentally altered the security situation in Europe, governments continue to be the main security actors. Mainly within the EU they have created several EU institutions and organizations to support them in the development and implementation of the policies discussed above. The Commission is the most important organization in this respect, as it addresses many of the functional security challenges and contributes to ESDP as well. The Lisbon Treaty introduces a number of institutional

changes that will affect the ability of the Union to conduct its security and defence policies. However, for a precise assessment of these consequences it is still too early.

We have then examined the explicit and implicit relationships between EU security and defence policies and policies for the ERA. On the one hand, we have found further evidence for the assumption of the SANDERA proposal that there is, at least in explicit terms, a “non-relationship” between ERA policies and EU security and defence policies. However, we have noted some implicit relationships between the two policy domains, not least in the 7<sup>th</sup> Framework Programme. Given the existence of these links between the two policy areas and in face of the dynamics of science and technology examined in the Knowledge Dynamics Paper there is the potential for policy actions undertaken in one field to have unanticipated and potentially undesirable consequences for the other policy field.

On the basis of an analysis of existing foresight studies in the security and defence domain we have identified a number of drivers for the future development of the relationships between S&D and ERA policies. Among the drivers that we identify, the increasingly multi-polar system, the EU’s aging population, and technological changes in terms of widespread availability of technology and further reliance on technological applications have the potential to significantly shape the links between S&D and ERA policies. So far these deliberations have the status of hypotheses rather than postulations, as they will need to be further developed and validated in the subsequent phases of the SANDERA project.