



Linking Defence and Security R&D to Innovation: the challenge ahead

19 November 2004
Brussels, Belgium

Summary report

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The workshop was held in the attractive “Espace Moselle” building in the centre of Brussels. After a welcome by chairman and host Paul Zeeuwts of IWT-Flanders, Professor Stefan Kuhlmann of Fraunhofer, Germany took over moderation and introduced the first speaker, Dr. Jordi Molas-Gallart of SPRU, UK.

Mr. Molas Gallart gave an introduction talk about innovation and defence R&D and the role of procurement. He pointed out that outcomes of military R&D projects are often thought to be easily transferred to the civil society. According Mr. Molas Gallart, this is however not the case. He presented several hurdles that interfere with this technology transfer the European Commission is trying to stimulate. To name one, in military R&D projects, scientists and engineers often use more stringent specifications, which make it hard to transfer products and knowledge to the civil society. In order to achieve easier transfer of technology and a European defence market, he stressed the need for significant institutional and policy reform.

During the following discussion, Mr. Molas Gallart pointed out that one should strive for a better balance between commercial and military research and that it is not simply a question of more government investment in defence research. Also, the problem is not that European defence companies do not collaborate enough; it is a matter of European procurement that has not materialized yet. Nations still often procure on their own and military research is often carried out in a national context. The last part of discussion was about the potential conflict of interest that arises when defence departments procure commercial products instead of products tailored through a funded research project. Governments face intellectual property rights that influence collaboration. Also the need for life cycle maintenance contracts develops.

After the first speaker professor Kuhlman added that European defence procurement is a difficult business, with many conflicting interests on national and European level. The

developments in the field, however, offer new chances for companies to get involved. Also, he noted that the theme of security is much broader than that of defence. On this, more was discussed later.

The second speaker was Dr. Charles W. Wessner, director of Technology and Innovation at The National Academies, USA. He started his presentation with a question to the audience: is the European political discussion on increasing defence related research “trade policy, a myth on innovation, a subsidy rational or an innovation strategy?” With his critical presentation he addressed the several myths and realities on the innovation system of the United States. Although US spending on military R&D is high, its focus is on development (not more fundamental research) and spin-off is limited. As for the myths, Mr. Wessner made clear that the U.S. Innovation System is not a well-oiled, centrally controlled innovation machine. In reality, it proves very difficult to get ideas into real products: the Cash Cow Valley of Death. In addition, only very few military technologies proceed effortlessly to commercial application due to secrecy, military specifications and long lead times. In short, according to Mr. Wessner, U.S. Military R&D is inefficient, overcommitted, aimed for a large part at testing and certifying and only occasionally has major impacts such as GPS and Internet. He sees his case strengthened by the fact that NATO allies did not follow the U.S. in increasing defence expenditures. As an alternative he proposed public private partnership. He brought forward as an example the American Small Business Innovation Research (SBIR) Program, which provides a bridge for small companies across the Cash Cow Valley of Death and couples universities to the marketplace.

During the following discussion, it became clear that increasing U.S. defence budgets will result in less fundamental research in favour of more applied research (for “security”). Mr. Polt warned that Europe should not follow the U.S. on this route as he fears the weakening of Europe’s fundamental sciences. Another question brought Mr. Wessner to state that European framework conditions such as bankruptcy laws differ considerable from the U.S. situation. He does, however, believe that the SBIR Program could be more or less “cut and pasted” in the UK, Sweden, France and Germany. “If the rules don’t work, change the rules”.

What followed was an interesting discussion on the European subsidies to Airbus. In that respect, Mr. Wessner brought into memory what he called the “systematic desinvestments” on European troops and equipment, opposed to large subsidies to several industries. He concluded with the formulation of the common challenge for the U.S. as well as Europe: a better return on research investments. Finally he questioned whether the U.S. should be regarded as Europe’s economical opponent, or China.

Then, it was time for lunch. While enjoying the great food and drinks of “Espace Moselle”, the participants continued their discussions at table.

After lunch, the first speaker was Pieter De Smet from the European Commission, DG Research. He presented the initiatives of the European Commission to work towards a European Security Research Programme (ESRP). He pointed out that a Preparatory Action for Security Research has been initiated. Seven projects and five supporting activities have been selected for this three year program of €65 million. Its priority areas are (1) Optimising protection of networked systems, (2) Protecting against terrorism, (3) Enhancing crisis management, (4) Achieving interoperability, and (5) Integrated systems and improving situation awareness. DG Research also aims to install a European

Security Research Advisory Board (ESRAB) to advise on European Security Research. Also, working relations will be established with the European Defence Agency (EDA). In spring 2005 a draft ESRP can be expected. When in place, it will become a specific program within FP7. For the program, the DG aims at an appropriate level of funding, additional to existing funding.

After Mr. De Smet, Prof. Damien McDonnell from the Defence Diversification Agency (DDA) took the stand. In his presentation he explained the efforts of his U.K. based agency to transfer military technological knowledge to small and medium enterprises operating in the civilian market. In its five years of existence, the DDA developed a strong network of "Knowledge Integrators" offering technology brokerage services. Also, it built strong ties with various research institutes and universities. It reaches SME's through the Regional Development Agencies and tries to match problems and opportunities at the companies with experts from the DDA's network. Recently, the DDA expanded its network to the Innovation Relay Centres, South Africa, and Korea.

During the following discussion, Mr. Wessner interestingly bounced back an earlier question of Mr. McDonnell himself on funding: should we channel our research funding to defence institutes or rather to civilian ones? Mr. McDonnell was of the opinion that defence research is less curiosity driven and therefore better at focusing. He believed his agency found a very effective way to "sweat out" the knowledge gained and multiply it in multiple sectors.

Dr Eva Lindencrona then presented the approach Vinnova takes to increase Sweden's security research. She informed the audience that Vinnova, the Swedish Agency for Innovation Systems, treats the challenge as a need for a "new" sectoral innovation system. Therefore, the agency takes a functional approach and involves industry, policymakers and research institutions. Presently, a study of the present innovation system is ongoing. It will be followed by an international study and hearings with stakeholders. Then, the agency will perform a functional analysis and will propose a strategy on the formation of a new innovation system based on functional needs.

Sweden was well represented with yet another speaker: Stefan Törnqvist of the Swedish Defence Research Agency. He informed the audience of the conditions for European collaboration in defence related research and development. He mentioned several European collaboration initiatives, such as the Western European Armament Group (WEAG) and the European Defence Agency. Also, he characterised present European collaborations as primarily bilateral, though increasingly multilateral. When he was asked whether the European Defence Agency coincides with NATO, Mr. Törnqvist responded that this is the case, but that the EDA is a European organization, which NATO is not.

The workshop's last speaker was Dr. Renelle Guichard of Dauphine University, France. She explained how French governmental funding of defence research has been restructured in 1997, which resulted in a strong dependence on the civil sector. Recently, initiatives have been undertaken such as a protocol between the Ministry of Defence and the Ministry of Research, participation of the Ministry of Defence in civilian innovation and research networks, and SME supporting activities. However, Ms. Guichard characterized this "second wind of dual use initiatives" as a set of rather fragmented initiatives. She also noticed that defence R&D is totally omitted on the present debate on research in France.

The workshop was wrapped up by Professor Stefan Kuhlmann. First, he noted that he now better understood the difference between defence R&D and security R&D, with the latter being “pressed on top of defence” and being a much broader field of research. Secondly, he presented his insight in the evolving policy instruments available to enhance synergies between military research and civilian innovation: traditional procurement, competitive procurement, and more dynamic instruments like SBIR. After some finalising remarks of people attending, Mr. Zeeuwts asked himself what the civil world can learn from the way the military is organized (e.g. procurement). Finally, Mr. Kuhlmann asked the audience whether everybody was content with the workshop as it had been. Reactions were very positive and several attendees spoke in favour of deepening the same theme again in a future discussion.