

# The Summary of the *Security Research Conference*, 1-2 June 2016, The Hague

## Opening session



*"It is important to work with practitioners to transform political priorities into concrete projects", said Belinda Pyke, director of Migration and Mobility, DG HOME.*

"Practitioner participation is of higher importance for us than for many other research areas," Belinda Pyke, director of Migration and Mobility, DG HOME said in her opening remarks to SRE2016. "The input of practitioners is therefore essential to maximise the impact of our projects on the security of the EU. The objective of this conference is to explore what the European Commission can do to support the design and development of concrete projects."

Approximately EUR 1.7 billion is set aside for security-related projects in the EU's wider Horizon 2020 research budget for 2014-2020.

The Commission's 2016-2017 security research work programme, for example, now requires that each research proposal – if it is to qualify for funding – must include the participation of practitioners. "Proposals which do not fulfil this criterion will not even be evaluated," observed Ms Pyke.

The Commission will also place far more emphasis on creating practitioner networks to monitor research and innovation projects and frame common requirements for research and innovation, she added.

Other speakers at the event supported the shift as well.

"Law enforcement agencies need to free resources to coordinate with stakeholders and to build capacity and to stimulate research in the right direction to deliver the capabilities we need," said Patrick Padding, a Dutch police official with the European Network of Law Enforcement Technology Services. "But there is still a lot to do to boost the role of

practitioners. And we need to ensure that we can integrate the technology that research will provide us."

### **The keynote speech of Professor Bauer**



*When it comes to counter-terrorism analysis, security research should not overlook human factors as it develops new technologies.*

As the risk of terrorism in Europe grows, a cultural change is needed within Europe's intelligence services – from one based mainly on spying to one of wider counter-terrorism analysis. This holds important implications for the direction of EU-funded security research if it is to provide Europe's intelligence and law enforcement agencies (LEAs) with the counter-terrorism tools and capacities they need, according to SRE2016 keynote speaker Alain Bauer.

"Using only technology is not the solution. All terrorist events since 9/11 show that investing only in hardware cannot solve the terrorist challenge we face. Collecting data is not the problem: we have plenty of that. Analysing it is the challenge," said Bauer, professor of criminology at Paris-based CNAM (Conservatoire National des Arts et Métiers).

"It's not about structures, tools or personnel. We need to improve the quality of security research into counter-terrorism by taking into account all relevant aspects of analysis: from criminology to ethnology and culture," he told his SRE2016 audience.

Mere data-collection and automatic analysis by computers will not do the trick in terms of pinpointing or forecasting radicalisation or terrorist trends, according to Bauer.

“Computers will not answer the essential questions. ‘Inspector Google’ cannot do this. It cannot follow what is chaotic, what is new, what is different or even what is stable because terrorism is a pluralistic issue. Computers can’t detect this. We have to invest in human resources and in generating exploitable, sensible information out of big data, if we want the right indications and answers,” he said.

As Bauer and others a SRE2016 observed, getting Europe’s research community and industry properly lined up with LEAs and other practitioners who use the results of R&D is a perennial challenge for the EU’s Security Research programme.

“Researchers have a very difficult time working together when they don’t share the same ‘theology’ about the causes of terrorism,” observed Bauer.

In his view, a first objective should be to get the academic world networking in a better way and looking at future actions. The second would be to get Europe’s research communities more connected to Europe’s intelligence services, of which the latter “need to open up and share more with researchers in order for the two sides to jointly produce more useful counter-intelligence analysis,” he said.

The EU’s current 2014-2020 Security Research budget funds many projects geared to learning from the analysis of the causes of radicalisation to developing the counter-terrorism tools that LEAs and other practitioners in Europe need.

### **Panel discussion on capacity building in security research with a focus on illicit firearms trafficking and cybercrime**



*Can data-matching between countries really take place? It is possible.*

Organised criminal groups are using the internet’s “dark side” – its secretive, highly encrypted and anonymous transactions – more than ever to carry out their illegal activities, said national security and law enforcement officials at the Commission’s Security Research Event 2016.

“The extent of the problem regarding the dark net is huge,” said Albrecht Broemme, vice-chair of the Protection and Security Advisory Group, which helps the Commission frame the priorities for its Security Research programme. “This demands tailored research and innovation to confront it,” he told in the conference.

Broemme’s fellow panelists such as Egidija Veršinskienė (director of Lithuania’s Cybercrime Centre for Excellence in training), Thomas Doerner cybercrime must involve research, law enforcement agencies and industry to overcome the sector’s fragmentation and fill in the gaps in capacity-building.

For example, Jose Romero Morgan of Spain’s Guardia Civil said there are many areas where security research can support law enforcement agencies such as for investigative training and awareness vis-à-vis the dark net.

“We are currently training our staff on the use of the dark net for investigative purposes such as how to use TOR and Bitcoins,” he said, referring to the software that enables users to navigate the dark net and to the digitally encrypted currency that facilitates criminal transactions over the internet. “We are in the first phase of doing this.”

Speaker Leen van Duijn, director of TNO, the Dutch national research institute, added, however, that “while the dark net is certainly a source of intelligence about its arms trafficking activity, for example, we also need to gain more generic knowledge about how its anonymity works.”

Ensuring that the EU’s Security Research projects deliver concrete results to practitioners is paramount, said Marcin Golizda-Blizinski, head of the Polish National Police’s cybercrime unit.

“We need short small projects that lead to a practical outcome. If there is a one or two year software project, we need the tool it develops to chase after the criminals. Criminals turn to Bitcoin to convert their profits into money. We need the tools to trace these transactions. These are the problems we face right now,” said Golizda-Blizinski.

### **Panel discussion on Integrated Border Management**



*Single research interface in border management is feasible.*

Europe is ringed by security problems, many of which point to the integrity of its external frontiers, where the achievement of integrated border management (IBM) raises many technical challenges.

“We’re talking about the whole chain of tasks required to manage the EU’s external borders. This raises any number of issues, not the least being coordination among the Member States and with international organisations,” said Beatrice Comby, director of Frontex’s capability-building division, who chaired the debate on IBM during the Security Research Event 2016 (SRE2016).

“IBM needs a wide scope of capabilities and a process-approach, which begs the question: is it possible to develop integrated solutions purely through research?” she asked her panellists.

For Krum Garkov, executive director of the agency, eu-LISA, which manages the EU’s large-scale IT systems, the answer is yes.

“You need a hub at IBM sites that can interface with the Member States’ legacy systems. Thus, there is a lot of room for research to help us. Technology today can deliver almost everything we need, so I have no doubts that we’ll get there eventually,” said Garkov. “IBM is moving from the physical [checks at borders] to the virtual, and thus is heavily dependent on innovation.”

Fellow panellist Stelios Thomopoulos, Director at Demokritos, Greece’s National Centre for Scientific Research, also argued for a process-approach to IBM.

“If we want to build a security continuum in Europe, then border management and security must be seen as an integrated service versus any focus on a geographic point and its specific provision of service; otherwise no one will take up the service,” he said.

That demands closer consultation between researchers and practitioners, as panellist Nathalie Paez, technology innovation officer at Spain’s Guardia Civil, reminded her audience. “There has to be more user involvement in designing the work programmes of security research. Perhaps a permanent end-user committee or a PPP [public-private partnership] would be the answer.”

Jean-Yves Guidon, director of business units, at French security technology company Morpho, supported that idea, but pointed to other aspects of security research that need attention as well.

“I see the security research programme on one side and smart-border capacity-building on the other, but the link between the two is not always clear,” observed Guidon. “A roadmap on how the research programme links to capacity building would be useful.”

For Guidon, there should also be more flexibility within the EU’s security research programme “to do short or quick turn-around research on a hot topic such as PNR [passenger name records]. And I think we need some kind of facility for testing the projects’ outcome.

This is very important because today's security projects are developed in separate silos. A common platform for testing would reveal whether everything is interoperable or not at a project's end," he added.

One thing is certain: Europe will need to make substantial investments in IBM research and capabilities if it is to effectively secure its borders while ensuring privacy and facilitating travel at the same time.

## Panel discussion on forensics



*"There is principle of sovereignty and everyone has their system, but we need to move ahead. We cannot afford each to develop our own system in isolation. The criminals will take advantage of that", said Arie IJzerman, the chair of the COSI.*

The panelists looked over how to create the forensics that Europe needs to stay abreast of organised criminal groups and other threats to Europe's security. It was stated that the challenges are not just scientific, but also administrative and legal.

"What are our challenges?" asked the session's chair Michele Socco of DG HOME. "We need to provide services to investigators and magistrates, and to do it more quickly than in the past. But we have to be realistic: we need cost-effective solutions at same time – and that's where we look to research, to industry and academia to deliver solutions", Dominique Saint-Dizier, division head of France's Forensic Institute, told the event.

The EU's 2014-2020 security research work programme supports many projects that are focused on forensic science. However, the scale and speed of today's organised criminal groups demand an even greater effort to develop the capacities that law enforcement agencies need, as pointed out by Jan De Kinder, the chair of ENFSI and Peter M. Schneider, a coordinator of EUROFORGEN project.

"The exchange of forensic information is of growing importance," said Arie IJzerman, chair of the Council's standing committee on operational cooperation on internal security. "But it is not borderless today – to put it mildly."

Mr Ijzerman noted that the EU justice and home affairs ministers are expected to approve in June the creation of a European Forensic Science Area where forensic services across Europe will be better coordinated. This is priority of the EU's current Dutch Presidency.

“Prosecutors and judges are too often reluctant to accept forensic evidence from other Member States. We need to change this mind-set: cross-border crime should be prosecuted at the same level as for national crimes,” he told the SRE2016 audience.

The way forward is to promote faster forensic techniques and more cross-border sharing of data between the Member State.

### **Panel discussion on "Space and Security"**



*More dialogue is needed between security practitioners and providers for space-based services.*

The participants in the panel discussion pointed out that as Europe's networks of space-based assets grow, the technologies are destined to play a greater role in security research and in supporting the EU's policy goals.

“We know that space systems can bring added-value to the field of security,” said Michel Bosco, deputy head of unit, DG HOME. “We want to look at how much value-added these space systems and technologies can now bring to security.”

Indeed, space applications for security will increase as the EU rolls out its Galileo and related services. A good example is drones.



“The combination of satellite data with imagery from drones can be used for a wide range of customers, from law enforcement agencies to border and coast guards,” said panellist Rita Rinaldo, head of policies department at the European Space Agency. “We have financed more than 20 services based on these two assets and we see that the sustainability of this kind of research is now coming into play.”

Asked how her agency interfaces with civil security practitioners, she said “end-users are at the very heart of our programmes. Without them we can’t bring our R&D efforts to a sustainable outcome, and we have a strict requirement for their participation, from pre-study analysis all the way to the evaluation of technology demonstrations, etc. They have to be fully involved.”

Bringing the fruits of research to the market is not all about financing, however. It also requires a willingness on the part of practitioners to accept change.

“This is exactly what we have found: end-users are resistant to change,” said panellist Mark Dumville, general manager of satellite-positioning technology company Nottingham Scientific Ltd. “Also, the applications we see are very niche. We need user-communities to come together and express a common set of requirements: that is the only way that cost-effective solution will be developed.”

It runs the other way too, however, with practitioners still looking for solutions from industry and Europe’s research community.

“When it comes to space-based detection, we have requirements that are still not solved,” said Dirk Vande Ryse, head of unit, Frontex. “There are many examples such as detection of human beings on terrestrial areas, detection of heat-spots such as a vessel’s running engine or the ability to detect tunnel-building. Border guards have seen instances of tunnels being built between countries: could these be identified from space?”

### **Panel discussion on EU’s counter-radicalisation research efforts**



*Let's orient research towards concrete actions and solutions for practitioners.*

The effects of EU-funded security research projects to understand and counter the causes of radicalisation are starting to take root at local level. Among the main priorities are to create a sound evaluation scheme for anti-radicalisation policies adopted at national and local levels, and to reinforce the feed-back security research results into the loop of policy-setting, operations and future research.

“We are at the point where a lot of things are being implemented to confront radicalisation, but the crucial stage is now evaluation and to choose the right methodologies,” Alastair Reed, research coordinator at the International Centre for Counter-Terrorism, told the SRE2016 audience. “The next two or three years will be crucial for that, especially at the local level.”

Fellow speaker Magnus Ranstorp agreed. Quality manager for the EU-sponsored Radicalisation Awareness Network (RAN), he said academics and other researchers have done solid research, but that local authorities need to create the framework where practitioners and researchers work together on best practices and to identify research priorities for the future.

“There are some incredible research results out there, and at RAN we are trying to connect research to practice by consolidating the lessons learnt. This is being done slowly but carefully, based on the evidence. A lot of work has already been done here, but there is lots of room for improvement too,” said Ranstorp. “We’re working closely with municipal authorities across the EU to help them exchange experiences and define their strategies.”

After years of effort, EU-funded projects are now honing in on the indicators of radicalisation, as panellist Tony van Vliet, representative of TNO – the Dutch national research institute which coordinated the EU-funded SAFIRE project – told the event.

“It is easier to agree on which kinds of behaviour are extreme, and that then reduces the problem space. Within SAFIRE we identified the behaviour associated with radicalisation – particularly that linked to extreme behaviour – and the factors required to prohibit it. We did this by making use of modern technologies and concepts grounded in empirical science. The art was to link the two,” said van Vliet.

“In the end, you don’t necessarily have to identify the individual, but if you pinpoint how his networking changes, that is a very good indicator,” he added.

However, the 28 Member States are still far from a common conceptual approach to the radicalisation problem that Europe faces, as Reed reminded his audience.

“We still need common definitions. The fact of radicalisation is not new, and we shouldn’t think of it only in terms of foreign fights and jihadists. What is different today is the speed with which it is unfolding,” he said.

Asked if social media can cause radicalisation, and whether removing extreme content on the internet would have any counter-effect, Reed said “we see this all the time. People get sucked into it, particularly women: they don’t actively seek to be radicalised but they get pulled into the propaganda, which is a massive enabler and is used in multiple ways. There are five stages to radicalisation, and you need a targeted message for each stage.”

## Closing session



*Matthias Ruete, Director General of DG HOME, Alberto de Benedictis, the chair of PASAG and Joris den Bruinen, Deputy Director of The Hague Security Delta (in clockwise from the left)*

Ringed by instability along much of its external border, Europe's security challenges increasingly require a collective response at EU-level – and this has implications for the evolution of the EU's Security Research programme, told in the closing session.

“Security has been moving to the top of the EU's agenda,” Matthias Ruete, Director General of DG HOME, told SRE2016 as it came to a close on 2 June.

“We are in the maelstrom of a series of terrorist attacks across the EU, and the political class is more and more prepared to think the unthinkable: moving from a national to a European perspective on security. In the coming months you will see many more elements of the Security Union emerging,” he said.

To support that, Ruete said there must be much stronger and more effective networking within Europe's research community so that it delivers the right solutions to civil security practitioners.

“We should not make the innovation and then find the application: it has to be the other way around,” he observed, adding that “we have to make sure, at the same time, that LEAs [law enforcement authorities] take up the challenge of presenting interesting projects.”

The Commission has been conferring with practitioners, industry and the research community in recent months with precisely that goal in mind.

“Future calls [for proposals] should feature even closer exposure to user communities by requiring the greater involvement of practitioners in research and innovation actions,” speaker Alberto de Benedictis told the SRE2016 audience.

Chair of the Protection and Security and Advisory Group which helps the Commission shape the topics in its security research calls, he pointed to other forthcoming changes as well. These include a balanced but mandatory dissemination of the output of all future security research projects, new funding for urgent actions, and the need to reach out to other research areas such as transport or energy for closer coordination as regards security research.

“More of this flexibility will be needed in the future because it is clear that the security picture is adjusting and morphing at ever-increasing speed,” said de Benedictis.