STOA
Science and Technology Options Assessment

STOA Panel meeting
Thursday, 14 December 2017, 09:30 - 11:00
LOW N1.4, Strasbourg

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The meeting started at 09:41 with Paul RÜBIG, MEP and STOA First Vice-Chair, in the chair.

1. Adoption of the draft agenda

– The Chair <u>announced</u> that interpretation was available in the following languages: English, French, German and Spanish; and the meeting was being web-streamed.

– He then <u>announced</u> that, as there were no requests for changes or additions, the agenda was deemed adopted.

2. Approval of draft minutes - STOA Panel meeting of 16 November 2017

– The Chair <u>announced</u> that the draft minutes of the Panel meeting of 16 November 2017 were in the dossier and, as there were no requests for changes, they were deemed approved.

3.a. Presentation of the outcomes of the Technology Assessment study 'Challenges and opportunities of establishing a sovereign and trustworthy ICT[1] industry in the EU'

– The Chair <u>announced</u> that the study, now entitled 'Achieving a sovereign and trustworthy ICT industry in the EU' (with a slightly shortened title), had been completed and was available in draft form along with its draft Options Brief.

– He then <u>gave the floor</u> to Zsolt PATAKI, Head of Service responsible for the STOA Secretariat and administrator responsible for the project, who <u>stressed</u> the importance of the study for citizens, especially those wanting to know how a strong ICT industry could be developed in the European Union (EU), when much hardware and software development infrastructure was based outside of Europe. The study's aim was to analyse the challenges, risks and opportunities linked to the development of a sovereign, trustworthy and cyber-resilient European ICT industry. The study formulated policy options for the EU to achieve cyber-resilience, and to develop capabilities and industrial and technological resources for a trustworthy EU cyberspace, with a view also to promoting core values, such as online privacy protection. These policy options were supposed to be considered by EU Institutions and Member States, and used as background by European Parliament (EP) committees for their legislative and own-initiative reports.

– The Chair then <u>introduced</u> Rafael RIVERA, project leader from iClaves, a STOA framework contractor, who also <u>noted</u> the importance of this study, especially since STOA was in the course of establishing the European Science-Media Hub. He then <u>noted</u> the importance of constructing a healthy and reliable digital ecosystem in the EU, and of developing tools to properly tackle the increasing number of cyber-threats and guarantee the privacy and data protection necessary for building a sovereign and trustworthy EU ICT industry.

– The speaker <u>described</u> the main objectives of the study as being to:
  describe the cybersecurity and data protection ecosystem in Europe;
  understand the main challenges facing the European cybersecurity industry;
  assess current policies in the EU to gain insights about possible policy options; and
  assess the different options available to European policy-makers.
The study's four main sections were: cyber threats; analysis of the cybersecurity ecosystem, including supply and demand, market structure, comparison to other regions and the role of public bodies; data protection; current policies and challenges, and proposed policy options.

– Mr RIVERA <u>explained</u> that there were multiple threats to European security, such as cyber-terrorism, cyber-espionage, cybercrime and hacktivism. He <u>mentioned</u> the case of December 2015 in Ukraine, where 230,000 people were left without electricity for 1 to 6 hours. A high number of cyber-attacks originated from Russian IP addresses[2], targeting the United States (US) and the Netherlands in the second half of 2016 at the time of their respective elections.

– He <u>went on to discuss</u> two emerging technologies particularly affected by cyber-threats, the 'smart things' environment and the so-called Cyber-Physical Systems (CPS). He <u>noted</u> that a significant portion of critical infrastructures, such as nuclear power plants or water management systems, depended on CPS, which were prone to cyber-attacks. The percentage of industrial automation systems attacked was approaching 50% in many countries and Cybersecurity Ventures projected an estimated USD 6 trillion of damage in 2021 as a result of cyber-attacks.

– Mr RIVERA <u>stated</u> that more than 50% of European citizens felt 'not very well informed' or 'not informed at all' about the risks of cybercrime. In his view, one of the most relevant features of the European cybersecurity market was

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[1] Information and Communication Technology
[2] Internet Protocol address, an identifying number for a piece of network hardware

its fragmentation. The top 15 providers, most of them non-European, accounted for only one-third of the market, while a great number of smaller providers were responsible of the remaining two-thirds.

− He explained that the main challenge for the European cybersecurity industry was the lack of funding, particularly for scaling up companies. Consequently, there were less European companies and these companies are usually smaller. Yearly average funding for EU cybersecurity-related projects ranged from €55 to 112.5 million in the period 2008-2020 (7th Seventh Framework Programme for Research and Technological Development and Horizon 2020); whereas funding for United Kingdom (UK) research and development (R&D) programmes was more than triple of this.

− Mr RIVERA explained that, personal data protection was one of the most important fundamental rights of European citizens. The European Commission had defined several strategies for providing an equal protection of personal data when they were transferred to non-EU countries. However, the effectiveness of the regulatory tools defined to protect the data transferred outside the EU, mainly the EU-US Privacy Shield, was being questioned.

− He noted that regulatory and institutional challenges arose from uncoordinated national strategies due to local interests and regulatory fragmentation. R&D challenges arose mainly due to misalignment between publicly funded R&D programmes and market needs. Industrial challenges arose from market fragmentation, the complexity of defining harmonised standards, and the insufficient scale of cybersecurity companies in Europe.

− Mr RIVERA presented four types of policy options for increasing EU cyber-resilience: institutional, market, industry and demand-side. Institutional policies should aim to reinforce the role of the EU and national bodies in cybersecurity issues and harmonise legislation against cybercrime. Market policies should unify public procurement requirements for cybersecurity solutions, creating trustworthy labels for European cybersecurity products, and harmonising standardisation and certification. Industry policies should foster market-driven research activities and the development of open-source cybersecurity products, support the creation of investment instruments for the sector, and increase the availability of workers in the sector. Demand-side policies should raise awareness of cyber-threats among final users.

− He concluded that the EU faced high risks when using cybersecurity technology developed elsewhere, as it could be used by foreign countries for cyber-espionage (political or economic). It was unclear whether the new legislation on data protection could successfully ensure related rights, as most digital services were provided by non-EU companies.

− The Chair noted that this study should be further used as a basis when developing the 9th R&D Framework Programme, as it could help identify the sectors that required more funding. He then opened the floor to questions and discussion.

− Christian EHLER, MEP and Panel member, pointed out that, two years earlier, the European Parliament and the European Commission had attempted to increase the budget of the Framework Programmes available for cybersecurity, but the Member States had consistently refused to provide the funding. He admitted that the European Cybercrime Centre was a great idea, but noted that it had a total budget of €5 million, with no provision for research. He then asked if standardisation with parallel certification would be useful for the sector. He also called for the private sector to spearhead the process and lead by example. He further questioned the lack of appetite for investments in Public-Private Partnerships, and enquired what factors would increase it. In his view, it was not a question of supply, since the cybersecurity industry did exist, but the problem came from the demand side. He emphasised the need to enhance demand by encouraging a better offering for cybersecurity, and not through legislation or market control. He cited the example of a 2011 communication identifying a liability link between cyber-incidents and company management boards, and even stakeholders. This forced companies to set up new rules, which led to a new wave of investments in cybersecurity. Lastly, he asked what type of direct or indirect measures could be taken in order to stimulate investment.

− Mady DELVAUX, MEP and Panel member, agreed with Mr EHLER that Member States were unwilling to contribute more funding and wondered how this could be changed. She questioned the study's funding figures comparing the EU to the UK and wondered if the study had taken into account the funding offered separately by Member States. She also asked if the technology available was up to standard in providing complete security.

− Danuta JAZŁOWIECKA, MEP and Panel member, asked what kind of cooperation existed in terms of cybersecurity between EU and US R&D companies, institutions, government bodies and private companies active in this sector.

− Addressing the issue of cooperation between Member States and EU bodies, Mr RIVERA argued that national governments were reluctant to give these competences to EU bodies, since cybersecurity was closely linked to national defence policies. He believed that the EU was moving in the right direction with the new Network and Information Systems (NIS) Directive, since it was the first directive which attempted to bring this issue to the EU level. This, however, would not be of value without reinforcing the role of the EU Agency for Network and Information Security (ENISA). He appealed for higher funding for ENISA, so that its supportive and coordinating role could be improved.

− Responding to Mr EHLER's question on standardisation, he acknowledged that it was an important topic, which was discussed with many experts in the course of the study. Some experts did see standardisation as a tool for defragmenting the market, whereas others saw it as an outdated solution. He suggested a voluntary soft standardisation mechanism as a solution. The study concluded that standardisation was a solution for the defragmentation of the European market.

− Responding to Ms DELVAUX, Mr RIVERA acknowledged that the numbers in the study reflected solely the European Commission budget for funding cybersecurity and did not include the funding allocated by Member States.

– To the question of Ms JAZŁOWIECKA, Mr RIVERA <u>responded</u> noting that the EU and the US disagreed on certain cybersecurity issues and experts advocated more negotiation to achieve future cooperation. He then <u>addressed</u> Ms DELVAUX's second question, noting that the study did not cover the scope of the technologies, but rather focused on the industry and the main challenges of the EU.

– Mr RÜBIG <u>thanked</u> the speaker and <u>announced</u> that, as there were no objections, the study would be published after the meeting. At this point he <u>welcomed</u> STOA Chair Eva KAILI, MEP, to whom he passed the chairing of the meeting.

3.b. Presentation by the European Commission on 'Mission-oriented research and innovation policy'

– The Chair <u>informed</u> the Panel that this presentation offered an opportunity to better understand the first ideas of the European Commission on a mission-oriented approach in EU research and innovation policies, in view of adopting such an approach for the next Framework Programme for Research and Innovation (R&I).

– She <u>stated</u> that the main idea behind the presentation was that the EU should not spread too widely its investments in research and innovation. Instead, it should prioritise investing in areas where the EU added value was greatest. The post-2020 EU R&I Framework Programme should thus translate global societal challenges (social, economic, environmental) into a limited number of large-scale research and innovation 'missions'.

– She then <u>gave the floor</u> to Mr EHLER, Lead Panel Member for this activity, who <u>said</u> that he expected the presentation to address the extent to which the missions approach related to Horizon 2020's societal challenges and built on the experience gained through various research funding instruments. He also <u>highlighted</u> the STOA workshop 'EU mission-oriented research and innovation policy – Reflections towards the next Framework Programme' scheduled to take place on 24 January 2018.

– The Chair <u>introduced</u> Kurt VANDENBERGHE, Director for Policy Development and Coordination at the European Commission's Directorate-General for Research & Innovation. She <u>highlighted</u> his extensive experience, including working with several Commissioners, and then <u>gave the floor</u> to the speaker.

– Mr VANDENBERGHE <u>thanked</u> STOA for taking the time to hear a presentation on the subject of missions, a concept which was rousing a lot of enthusiasm amongst stakeholders and those in political circles, but was still 'work in progress'. He <u>described</u> missions as distinct from research areas, as missions consisted of a defined goal with a specific outcome, such as "we want to use the first quantum computer in Europe by 2020 to understand climate change". He <u>identified</u> two main open questions: what was the right scale for missions, and what was the right approach for designing them (and involving other stakeholders beyond the Commission).

– He <u>argued</u> that the EU should build on the lessons of Horizon 2020 by better demonstrating projects' impact. He <u>noted</u> that there could be a mismatch between general societal challenges and specific proposals, and that the Commission wanted to make Framework Programmes more relevant to society at large. Missions would allow the EU to deliver on Commissioner Moedas' core principles for the 9th Framework Programme - "excellence, openness and impact". He <u>added</u> that a mission-oriented, impact-focused approach to address global challenges was also a recommendation from the High Level Group chaired by Pascal Lamy on maximising the impact of EU R&I programmes.

– The <u>speaker went on to enumerate</u> the recommended characteristics of EU-level R&I missions, including: clear, understandable goals, appealing to the public, cross-sector, open to all R&I actors, with accomplishments that can be measured and communicated. He <u>stated</u> that the Europe saw missions as a credible, realistic way of helping to achieve the United Nations (UN) Sustainable Development Goals, if the missions met the 'MATURE' criteria: Measurable, Achievable, Transformative, Understandable, R&I, Engaging.

– He finally <u>described</u> the proposed two types of missions: 'accelerators', where the solution was already known, and required a focussing of efforts and resources, and 'transformers', where many solutions had to be considered, and which would involve many actors, experimentation and a cross-sector approach.

– The Chair <u>thanked</u> Mr VANDENBERGHE for his presentation and opened the floor for comments and questions.

– Mr RÜBIG <u>noted</u> that, based on his experience in the Budgets Committee, it was extremely difficult to increase funding for research and innovation. He also <u>highlighted</u> the need for more science and research for regional development.

– Mr EHLER also <u>called</u> for an increased budget for research, and <u>asked</u> what were Mr VANDENBERGHE's expectations regarding using funding of other parts of the EU budget to support research.

– Ms MOODY, MEP, <u>noted</u> that co-design would take a considerable amount of up-front expenditure, and that, while wider engagement was important, it would be difficult to allocate parts of the budget to project elements that were not directly delivering mission outcomes.

– Mr VANDENBERGHE <u>expressed</u> his gratitude for the Parliament's support of R&I at European level. He <u>said</u> that there was significant enthusiasm for missions, even within Member States, as missions gave a public face to European R&I. He <u>highlighted</u> the cooperation with the Commission's Directorate-General for Regional and Urban Policy (DG REGIO) using missions to enable smart specialisation, and <u>proposed</u> that each mission should have the buy-in of at least three Directorates-General or Agencies, to ensure a cross-sector and cross-policy approach.

4. Ongoing and new STOA projects

− The Chair <u>announced</u> that all ongoing STOA projects were running to schedule.

5. STOA workshops and joint activities with external organisations

5.1. Forthcoming events

5.2. STOA workshop 'EU mission-oriented research and innovation policy', 24 January 2018, EP, Brussels

5.3. Proposal for a STOA workshop on 'Innovative solutions for research in healthcare', 7 March 2018, EP, Brussels

5.4. Proposal for a STOA-ERC[3] event, 30-31 May 2018, EP, Strasbourg

− The Chair <u>referred</u> Members to the table of forthcoming events listed in the dossier, and <u>announced</u> that, as there were no objections, preparations for these events would proceed as described.

6. Visits/external activities

6.1. STOA delegation to INNOVEIT[4], 16-17 October 2017, Budapest - Feedback

6.2. EPTA[5] Council meeting and Conference, 7-8 November 2017, Lucerne - Feedback

6.3. World Science Forum, 7-11 November 2017, Amman - Feedback

6.4. Internet Governance Forum (IGF), 18-21 December 2017, Geneva

− The Chair <u>announced</u> that, given time constraints, feedback from the visits to INNOVEIT, the EPTA Council meeting and Conference and the World Science Forum would be postponed for the next meeting.

− The Chair <u>informed</u> Members that some places remained available on the EP delegation to the IGF, subject to the agreement among the political groups on the distribution of places; interested Members should contact the Secretariat.

7. Any other business

− The Chair <u>informed</u> Members that the latest edition of the STOA Newsletter (December 2017) had been distributed with the dossier. It had been widely disseminated to Members and STOA contacts within and beyond the EP.

8. Date and place of next meeting

− The Chair <u>announced</u> that the next Panel meeting was scheduled for Thursday, 18 January 2018, at 09:30 in the same room (LOW N1.4), and would include the presentation of the results of the study 'How to overcome the innovation gap in Europe: structural shortcomings in the EU-13 and recommendations for a better performance in Horizon 2020'.

The meeting ended at 11.09.

ANNEX
List of participants

STOA Panel members

Ms Kaili, Mr Rübig, Ms Delvaux, Mr Ehler, Ms Jazłowiecka, Ms Schmidt, Ms Van Bossuyt.

Other Members

Ms Moody

Scientific Foresight Unit (STOA)

Mr Karapiperis, Mr Pataki, Mr Kurrer, Mr Quaglio, Mr Plese.

Other participants

Mr Hiller (DG EPRS), Mr Vandenberghe (EC, DG RTD), Mr Tindemans (EuroScience), Ms Karanjac (Council of Europe), Mr Moysiadis (Assistant to Ms Kaili), Ms Ecker (Assistant to Mr Rübig), Ms Faber (Assistant to Ms Delvaux), Ms Winckel (Trainee to Ms Delvaux), Ms van Ellen (Assistant to Mr Ehler), Ms Krizmanic (Trainee to Ms Petir), Mr Schichl (Assistant to Ms Schmidt), Ms Griffith Otway (Assistant to Ms Moody), Ms Rizzi (S&D Secretariat).

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[3] European Research Council

[4] EIT's Innovation Forum; EIT: European Institute of Innovation & Technology

[5] European Parliamentary Technology Assessment network