NATO PARLIAMENTARY ASSEMBLY

SUMMARY

OF THE MEETING OF THE

SCIENCE AND TECHNOLOGY COMMITTEE (STC)

Thursday 17 September 2020

By videoconference

153 STC 20 E | Original: English | September 2020

ATTENDANCE LIST

OFFICERS OF THE SCIENCE AND TECHNOLOGY COMMITTEE

Vice-Chairpersons	Njall Trausti FRIDBERTSSON (Iceland)
	Sven KOOPMANS (Netherlands)
General Rapporteur	Susan DAVIS (United States)
Special Rapporteur	Leona ALLESLEV (Canada)

NATO PA BUREAU MEMBERS

Secretary General	Ruxandra POPA
Ex Officio Member	Gerald E. CONNOLLY (United States)

MEMBER DELEGATIONS

Belgium	Leo PIETERS
Estonia	Ants LAANEOTS
Hungary	Agnes VADAI
Italy	Fabrizio ORTIS
Portugal	Olga SILVESTRE
Spain	Begona NASARRE
	Maria Teresa RUIZ-SILLERO
Turkey	Hisyar OZSOY
	Kamil Okyay SINDIR
	(Vice-Chairperson of the Sub-Committee on Technology Trends and Security)
	Taner YILDIZ
United Kingdom	Stuart ANDERSON
	Alun CAIRNS
	Nusrat GHANI
United States	Rick LARSEN

ASSOCIATE DELEGATIONS

Armenia	Gevorg GORGISYAN
Georgia	Kakha KUCHAVA
Ukraine	Galyna MYKHAILIUK

INTERNATIONAL SECRETARIAT

Andrius AVIZIUS	Director, Political Committee
Steffen SACHS	Director, Science and Technology Committee
Ethan CORBIN	Director, Defence and Security Committee
Jailee RYCHEN	Coordinator, Defence and Security Committee
Karen WALKER-LOVE	Coordinator, Political Committee
Sofiia SHEVCHUK	Research Assistant

I. Opening remarks by Njall Trausti FRIDBERTSSON (Iceland), Vice-Chairperson

1. The Vice-Chair, Njall Trausti Fridbertsson (IS), welcomed the delegates and observers to the second virtual meeting of the Assembly's Science and Technology Committee (STC).

II. Adoption of the draft Agenda [134 STC 20 E]

2. The draft Agenda [134 STC 20 E] was adopted. Mr Trausti Fridbertsson invited Susan Davis (US) to present her draft General Report.

III. Consideration of the draft General Report on *Hypersonic Weapons* [039 STC 20 E] presented by Susan DAVIS (United States), General Rapporteur

3. In her initial remarks the Rapporteur explained that hypersonic missiles can travel more than five times the speed of sound. Unlike ballistic missiles, which can reach the same speed, hypersonic missiles are manoeuvrable and do not follow a predictable flight path. Their combination of speed and manoeuvrability poses a new challenge, as a hypersonic missile can bypass existing missile defences and greatly reduce the warning time for any targeted actor. There are two types of hypersonic missiles: hypersonic cruise missiles (HCMs) and hypersonic glide vehicles (HGVs). HCMs are basically cruise missiles that can fly at hypersonic speed while the latter are launched from rocket boosters and glide towards their target at hypersonic speed after the boost phase, the Rapporteur explained. Due to their capabilities hypersonic missiles constitute a new class of weapons, therefore NATO members need to be aware of the potential of hypersonic missiles and the likely implications of this technology on the security of NATO nations.

4. Russia and China have made great strides in their hypersonic weapons programmes. Russia is currently pursuing two hypersonic weapons programmes, "Avangard" and "Tsirkon", while China is developing both hypersonic glide vehicles and hypersonic cruise missiles, the Congresswoman noted. Russia claims that it has started deployment of the "Avangard" system. It is highly likely that operational hypersonic weapons will be deployed in mid-to-late 2020, she said. An additional concern is the spread of knowledge about this technology among other nations such as Iran and North Korea.

5. Several NATO Allies, with the United States in the lead, are also developing hypersonic technology, the General Rapporteur informed the delegates. US hypersonic activities are designed to produce operational prototypes that can be used for the subsequent development of advanced tactical hypersonic weapons. In contrast to Russia, the United States is not currently considering or developing hypersonic weapons for use with a nuclear warhead. For now, US hypersonic efforts prioritise the development of short and intermediate range conventional precision strike capabilities.

6. The development and deployment of hypersonic weapon systems enhances Russia's strike capabilities considerably, according to Ms Davis. She reminded the Committee that the demise of the Intermediate-Range Nuclear Forces (INF) Treaty allows Russia to station new intermediate-range missiles on NATO's periphery. Deployment of such weapons on NATO's periphery would increase the risk for European NATO member countries because they shorten the reaction time for the defender significantly, the General Rapporteur stressed. For example, hypersonic weapons could be used to take out critical components of NATO's Integrated Air and Missile Defence (IAMD) architecture with little or no warning due to the shorter reaction time.

7. The Congresswoman then said that the impact of hypersonic weapons on strategic stability remains the issue of an ongoing debate. Some argue that hypersonic missiles have the potential to undermine strategic stability because their speed and manoeuvrability reduce decision windows and increase the risks of miscalculation and misperception. Moreover, these weapons are capable of penetrating all currently deployed missile defences. Others, however, disagree and argue that Russia already possess many nuclear-armed ICBMs and adding a hypersonic weapon does not

fundamentally change the strategic—or deterrence—calculus. Ms Davis said that the current version of her draft report suggests that the arrival of hypersonic weapons will have a more important impact on the tactical, and not so much on the strategic level.

8. The General Rapporteur then explained that hypersonic weapons also offer opportunities for NATO forces. For example, conventionally armed Allied hypersonic weapons could enable NATO forces to tackle road mobile and A2/AD assets of potential adversaries from afar in a conflict. This would signal reassurance and resolve to NATO Allies – and thereby strengthen deterrence. What is more, Allied hypersonic weapons could be used as leverage in pursuing arms control agreements beneficial to the security of NATO Allies. This could be analogous to the role that NATO's double track decision played in the negotiations that led to the INF Treaty.

9. Following this, Ms Davis said that some NATO Allies are working on counter-hypersonic weapons technology. The United States, for example, is currently developing a network of sensors in low-earth orbit that could track incoming hypersonic missiles. There is also an experimental "Glide Breaker" programme, which focuses on developing kinetic interceptors for hypersonic weapons, as well as programmes that explore the development of directed energy weapons - such as lasers or microwave weapons - that could neutralise incoming hypersonic missiles.

10. The Rapporteur concluded by stressing that NATO can ill afford to ignore the progress that Russia, China and other nations are making in the development of hypersonic weapons. Hypersonic weapons could, if unmatched, provide an adversary with the means to coerce NATO Allies and partners in times of crisis. Therefore, NATO as an organisation needs to evaluate and discuss the implications of hypersonic weapons for deterrence, capability adoption, interoperability, and arms control. NATO's Science and Technology Organisation (STO) can help advance research on hypersonic technology, she noted. Moreover, NATO members should engage in the exchange of intelligence, research, design, and encourage overall closer cooperation between the national research programmes. Finally, NATO should also address the issue of proliferation, for example, by looking to strengthen the Missile Technology Control Regime.

11. In the ensuing Q&A, **Gerald E. Connolly** (US) reminded the participants that Congresswoman Davis will leave the U.S. Congress at the end of the current term. He recognised Ms Davis' longstanding service in the U.S. Congress and her outstanding achievements in both Congress and the NATO Parliamentary Assembly. Congressman Connolly then inquired about the progress that China has made in the development of hypersonic technology. Susan Davis replied that China is investing massively in the research and development of these weapons. Because of the opacity of the Chinese system, it is unclear however, how far China has advanced in hypersonic missiles. The General Rapporteur iterated that the U.S. has stepped up its own research in this area because of Chinese and Russian efforts. That China has thus far conducted the most tests and published many articles on hypersonic technology was also noted.

12. **Galyna Mykhailiuk** (UA) informed the Committee of the threat Russian hypersonic weapons pose to Ukraine and NATO Allies. She agreed with Ms Davis that the security implications of hypersonic weapons require a comprehensive discussion among NATO Allies. The Ukrainian delegate warned that hypersonic weapons could give Moscow an opportunity to undermine solidarity and unity of the Alliance. Ms Mykhailiuk also encouraged improved cooperation on this technology among NATO Allies but also with partners such as Ukraine. Moreover, closer security cooperation between NATO and partner countries in the Black Sea region should be pursued. Finally, she suggested that hypersonic weapons should be included in future arms control agreements. The General Rapporteur thanked Ms Mykhailliuk for her contribution and said that she will take these comments into consideration.

13. **Sven Koopmans** (NL) referred to paragraph 72 and asked if it would be possible to intercept hypersonic weapons and how this could be done. He also inquired what kind of investment would be necessary to achieve this and whether this should be a national effort or a common NATO effort. Ms Davis answered that one of the reasons for this report is to debate these issues among NATO parliamentarians. She added that she is considering expanding this section of the draft report.

14. A written question delivered to the General Rapporteur by **Mounir SATOURI** (European Parliament) shortly before the online meeting raised the issue of whether developing offensive and defensive measures to counter Russian hypersonic weapons would risk an escalation of a dangerous and costly arms race. Acknowledging that there is a risk of a hypersonic arms race Ms Davis noted that the Assembly needs to continue the discussion about this danger and how it could be prevented.

IV. Consideration of the draft Special Report on *Defence Innovation* [041 STC 20 E] presented by Leona ALLESLEV (Canada), Special Rapporteur

15. The Rapporteur began her introduction by noting that the economic impact of the COVID-19 pandemic will increase the pressure on the defence expenditures of NATO member states as governments need to invest in other areas to support economic recovery. However, limiting, or even reducing defence investment would weaken the Alliance, she warned. NATO remains of critical importance to transatlantic security as the world becomes more instable. Moreover, the credibility and influence of multilateral institutions like the UN are being eroded while great powers are focussed on changing the global world order to expand their influence.

16. The challenges the Alliance faces are not limited to traditional direct military technology and actions, the Special Rapporteur explained. State and non-state actors are increasingly more agile as they leverage diverse approaches and inexpensive technology to an escalating disruptive effect. Attacks on government, banking, and critical infrastructure information networks have increased markedly. These asymmetric threats pose an even greater risk to citizens of Allied nations whereby their intellectual property and identities are stolen and bank accounts drained with limited ability to quantify the impact or to attribute the aggressor. This, combined with the rapid increase in influence operations designed to misinform and mislead the public, all serve to further the goals of NATO competitors. At the same time NATO's technological edge in the military realm is rapidly eroding, she warned.

17. The collective security and economic prosperity of our nations are inextricably linked, Ms Alleslev argued. The best response to defend not only the physical security of our citizens but also the economic prosperity as well as our health, intellectual, democratic, and financial assets and institutions is defence innovation, she underlined.

18. To achieve this, NATO must stay ahead of the accelerating pace of innovation and emerging and disruptive technologies. No nation can do it alone. Regaining NATO's technological edge is the only way to protect citizens, nations, the Alliance, and the values for which it stands.

19. Defence innovation matters, and every national recovery plan budget should include, as a minimum, the amount currently spent on defence, as well as a more comprehensive approach to defence innovation.

20. The Special Rapporteur then briefly outlined the technology innovation efforts of NATO's near-peer competitors, primarily Russia and China, and non-state actors such as terrorist groups. She explained that in the past it was mainly governments advancing technology, but today it was mostly the private sector. Therefore, NATO can no longer afford a "business as usual" approach to maintain its technological edge.

21. After this Ms Alleslev followed up with a summary of national initiatives to advance defence innovation. In this context she mentioned the promotion and development of high-risk/high pay-off projects, the building of networks of innovators and the creation of "innovation hubs" and laboratories that bring together think tanks, experts, start-ups and Small and Medium Enterprises (SMEs) to generate new technology in the defence field. She particularly stressed the need to find new, innovative ways to provide financial support for start-ups and SMEs.

22. Although the primary responsibility for defence innovation is the responsibility of NATO member nations, NATO as an organisation plays an important role in making progress in this field. The Special Rapporteur highlighted the role of the Science and Technology Organization (STO) as a key driver for defence innovation within NATO and the role of customers such as Allied Command Transformation (ACT). She noted, too, that NATO has increased the efficiency and effectiveness of its defence innovation efforts, by, among others, establishing the Innovation Board under the NATO Deputy Secretary General and the Innovation Unit within NATO HQ. Therefore, both on a national level and at NATO level significant strides have been made in making innovation efforts more effective, affordable, and coherent.

23. The Special Rapporteur then presented a few recommendations. First, the Allies need to develop a more strategic planning S&T approach to foster an agile, innovative, and risk-tolerant mindset. Second, NATO militaries need to improve how they scan, adopt, and measure innovation. Third, Allies need to better coordinate technology export controls, screening of investments, intellectual property theft, and restrictions against collaboration with military-linked or otherwise problematic institutions in China and Russia. More generally, to improve defence innovation NATO Allies should pursue a "blended" approach, one that leverages the strengths of our free societies - but with both national and alliance vision and strategic direction from the top.

24. Ms Alleslev concluded her presentation by acknowledging that substantive efforts have been made towards improving defence innovation. However, further progress is needed and critical to regain NATO's technological edge and prevent losing focus and resources. The simultaneous effects of COVID-19 on the economy and the collective security of NATO nations have been profound, but now is not the time to cut defence spending. Finally, the Special Rapporteur expressed the hope that NATO Parliamentarians will use this report to make the argument to their governments that as we seek to achieve economic recovery in a post COVID-19 world - we must not cut defence spending.

25. In the Q&A session with delegates, Sven Koopmans thanked the Special Rapporteur for having produced a very important and timely draft report. He suggested differentiating between threats emanating from states and those emerging from non-state actors as the threats posed by them are different. The Dutch delegate then proposed to distinguish between the military means that Allies need for offensive and defensive purposes. Mr Koopmans also wondered whether it is possible to expand the part of the report which focuses on regulation. He said that, in addition to international regulation such as arms control treaties, it might be necessary to regulate the private sector more than at present. For example, a company should not be allowed to produce drones which are not identifiable as drones and could be used to attack our infrastructure. Finally, noting that he has introduced a resolution in the Dutch Parliament which calls upon Parliamentarians to take initiative on regulation, he offered his assistance to work on the update of the draft report.

26. In response, Ms Alleslev reminded the participants that "Defence Innovation" is a very big topic and that it is crucially important to identify, and communicate amongst ourselves, which areas should be a priority. A key element of the draft report is the distinction between different threats and assessing how Allies can best defend against these threats. The need to examine ways to regulate, including arms control agreements, is highlighted in the draft report and is part of a discussion that NATO Allies need to have on standardising policies. The advantage of working together is that Allies can leverage each other's strengths and capabilities. She agreed that the private sector plays an important role in defence innovation but noted that private companies have a different view of security, and of how their products could be used in unsavoury ways, which differs from that of governments. Governments need to encourage private companies to make security a priority, she explained. Ms Alleslev added that this will require a complex conversation as companies tend to regard government regulation as limiting their competitiveness. The issue of regulation could be a topic for a future report by the Committee, she said.

27. **Ethan CORBIN** (NATO PA) asked how NATO nations and their societies can regain a common threat perception that existed during the Cold War and an understanding of how to move forward to defend their countries and their interests. He remarked that NATO's enemies appear to avoid direct conflict and try to use cyber-attacks and disinformation to disrupt, dislocate and confuse, which can

weaken democracies on all levels. Areas such as cyber, space, and sub-sea therefore appear to become more relevant for our security. He asked which technologies governments should focus on to safeguard the security of NATO member states and citizens in the future, and which technologies should be the key strategic priorities that would allow NATO to regain the innovation lead. The Special Rapporteur replied that a democracy is only as good as the information that its citizens have to make decisions and influence the future of their nation. Spreading information about threats and challenges is crucial. Currently, citizens are not aware of the manifold ways through which critical foundations of our societies are being undermined. The threats NATO Allies are facing today are much more subtle than during the Cold War. For example, cyber threats cross borders easily and can often not be attributed and are thus hard to identify. There is no mechanism to gather the information pertaining to these threats. If there is no common threat perception there is also no common resolve on how to address these threats. We therefore need to change our mindset in terms of what we are trying to protect, Ms Alleslev stressed. She added that sovereignty and security is about our own societies being able to choose our future and not have it decided by someone else. The technologies needed to secure our societies will take care of themselves because if we have a common perception of what the challenges are, we will see commercial industry taking a greater role in safeguarding our information system, our banking system etc.

28. **Agnes VADAI** (HU) inquired whether a communication plan is needed to explain to citizens why it is important to spend money on defence, particularly as the COVID-19 pandemic has caused an economic crisis that needs to be overcome. She also asked if, and how, Allied governments can attract people who are experts in digital, cyber, and other areas that are relevant for our security. Leona Alleslev answered that parliamentarians can affect change only if they communicate to citizens effectively. She said she hoped that this draft report is a first step towards explaining to the public that threats emanating from cyber space or disinformation are as dangerous to our countries as traditional threats. Defining the challenges and communicating them clearly to the public are the starting point. She advocated that parliamentarians should do their best to prevent cuts in defence spending. Attracting new skill sets to our military organisations and retaining them is important, she noted. The Special Rapporteur was optimistic that this will be possible if governments and parliaments explain what the new challenges are.

V. Any other business

29. No other business was raised by the members.

VI. Date and place of next meeting

30. Mr Fridbertsson reminded the members that the next meeting of the Committee is normally scheduled to take place at the Assembly's Autumn Session, on 22 November in Athens, Greece. The NATO PA Secretariat will inform members if there are any changes.

VII. Closing remarks

31. The Vice-Chair thanked everyone for their hard work and constructive participation in these difficult times.