

**SCIENCE AND
TECHNOLOGY**

253 STC 06 E
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NATO Parliamentary Assembly

SUMMARY

Meeting of the Science and Technology Committee
Hall 2000 D, Québec City Convention Centre, Québec City, Canada

Wednesday 15 November 2006

ATTENDANCE LIST

Chairman	Michael Mates (United Kingdom)
Vice-Chairman	Lothar Ibrügger (Germany)
General Rapporteur	Pierre Claude Nolin (Canada)
President of the NATO PA	Pierre Lellouche (France)
Secretary General of the NATO PA	Simon Lunn (France)
Member delegations	
Belgium	Philippe Mahoux Luc Willems
Bulgaria	Mario Tagarinski
Canada	Leon Benoit Cheryl Gallant
Estonia	Margus Hanson
France	Hélène Luc
Germany	Robert Hochbaum
Greece	Sofia Kalantzakou Nikolaos Legkas
Hungary	Péter Karsai
Lithuania	Andrius Baranauskas
Luxembourg	Fred Sunnen
Netherlands	Theo Brinkel
Norway	Jan Arild Ellingsen
Poland	Ryszard Gorecki Jerzy Zawisza
Portugal	Joaquim Vasconcelos Da Ponte Luiz Fagundes Duarte
Romania	Cristian Valeriu Buzea
Slovenia	Anton Anderlic
Spain	Ramon Aleu Gabriel Elorriaga
Turkey	Emin Bilgiç Ramazan Toprak
United Kingdom	Peter Bottomley Jimmy Hood Lord Jopling John Sewel
Associate delegations	
Russian Federation	Rafael Gimalov Anatoly Semenchenko Bato-Zhargal Zhambalnimbuev
Switzerland	Edi Engelberger Theo Maissen
Ukraine	Lev Hnatenko Andriy Shkil

Parliamentary Observer

Japan

Masataka Suzuki

Speakers

Tony Haymet, Director, SCRIPPS Institution of Oceanography, United States
Major General Joe Hincke, Chief of Programs, Ministry of Defence, Canada
Wade L. Huntley, Director, The Simons Centre for Disarmament and Non-Proliferation Research, Liu Institute for Global Issues, University of British Columbia

Committee Secretary

Kevin Pittman (Canada)

International Secretariat

Andrius Avizius, Director
Reena Panchal, Coordinator
André Kahlmeyer, Advisor, Mediterranean Activities

1. **Michael Mates** (UK) started the meeting by welcoming the delegates and giving a few introductory remarks.

The draft Agenda [209 STC 06 E rev 1] and the Summary of the Committee meeting in Paris [141 STC 06 E] were adopted.

A. Presentation by Tony Haymet, Director, SCRIPPS, Institution of Oceanography, on *Climate Change and the Ocean Environment*

2. In the beginning of his presentation, **Tony Haymet** provided a historical overview of global warming studies. Discovery of global warming occurred some 50 years ago, when Charles David Keeling and his team realized the seriousness of the CO₂ increase. Dr Haymet presented CO₂ measurements from the past 420,000 years, indicating a dramatic increase in CO₂ levels in recent times. These figures, Dr Haymet stressed, are undisputed within the scientific community.

3. CO₂ dissolves in the oceans and acidifies them. Thus, the acidity of our oceans is rapidly increasing. In the next 30 years, the pH level of the oceans will be significantly lowered. A change of the pH value of the oceans will considerably affect marine species. Increased temperatures also cause sea levels to rise – and this may be accelerating.

4. As to practical measures to counter these processes, Dr. Haymet suggested the following:

- 1) Reduce CO₂ emissions worldwide, through the use of solar and other renewable energy sources;
- 2) Focus the world's best climate predictions on areas of greatest concern;
- 3) Deploy an efficient economical world ocean observing network;
- 4) Study possible extreme events;
- 5) Study clouds and aerosols.

5. **Cheryl Gallant** (CA) and **Theo Maissen** (CH) stated that the relationship between CO₂ and global warming is a matter of opinion and that not all scientists acknowledge this link. Dr Haymet disagreed with this assessment, asserting that 99 % of scientists believe this link exists. It is a matter of basic physics, Dr Haymet said.

6. **Philippe Mahoux** (BE) asked if the Kyoto agreement is efficient when it comes to ocean environment? Dr Haymet replied that the rate of CO₂ increase might be even faster than anticipated. Kyoto is a good start, but we are not doing enough. Some countries are close to meeting their Kyoto targets, others are not at all. However, from the outset, the Kyoto agreement was meant as just a start.

7. Answering to the question of **Rafael Gimalov** (RU) on alternative energy sources, the speaker emphasized that all forms of energy should be on the table. We have to find a replacement for burning CO₂ fuels. He urged legislators to assume a more pro-active role in explaining to populations the seriousness of the situation. This requires a strong political will, because we are talking about developments in 30 years, which is not a typical political timeframe.

B. Consideration of the draft General Report *Interoperability: the Need for Transatlantic Harmonisation*, [177 STC 06 E] presented by Pierre Claude Nolin (Canada), General Rapporteur

8. In his presentation, the **General Rapporteur** stressed that, in the Information Age, interoperability of Allied forces the challenge of "network-enabled" capabilities should be taken into

account. While it is crucial to continue to implement the Prague Capability Commitments and to procure strategic lift, air-to-air refuelling, force protection and precision strike assets, it is also vitally important that NATO nations develop network-centric C4ISTAR (command, control, communications, computers, intelligence, target acquisition and reconnaissance) capabilities as well as the overarching NATO-wide architecture with common protocols and interfaces, wherein all allies could 'plug-and-play' seamlessly and in real time. Without proper attention to network-centric programmes, Sen. Nolin asserted, the transatlantic capability gap is likely to increase.

9. The General Rapporteur called for more flexible transatlantic technology transfer and information sharing policies. Sen. Nolin also mentioned that the draft report was sent to the Defence Ministers of all 26 NATO nations as well as the NATO Secretary General, and a number of valuable comments was received. All respondents acknowledged the importance of the issues discussed in the general report and agreed that particular attention should be paid to the network-centric capabilities in order to avoid a capability gap in this field.

The draft General Report [177 STC 06 E] was adopted unanimously.

C. Presentation by Major General Joe Hincke, Chief of Programs, Canadian Ministry of Defence

10. In his presentation, **Major General Hincke** discussed the technological aspects of Canadian Forces transformation. Threats, foreign policies and technologies are changing and evolving all the time. Accordingly, the Canadian Forces are undergoing a transformation. He stressed that the interoperability of C4ISTAR systems is essential. He noted that is difficult to keep up with the changes in information technology that are very fast. Government procurement in this respect is too slow.

11. Canada is pursuing a network-centered approach to operations, that touches upon different subjects such as information flow and command structure. One barrier to a Robustly Enabled Force is that there are 5 different networks at security level in Afghanistan for information sharing, for example. According to the speaker, we should try to achieve better information and data sharing among NATO Allies, which is currently often hindered by national legislative obstacles.

12. **Theo Brinkel** (NL) was interested in the risks posed by network-centric warfare. Gen. Hincke admitted that we will always face risks, like with computer hackers who always try to be a little bit faster. However, the advantages of network-centric systems are greater than the problems. Nevertheless, further risk assessments studies are necessary. Pierre Claude Nolin noted that this issue of downside of net-centricity is also briefly considered in the General Report.

13. Mr. Gimalov suggested to investigate if the emergence of network-centric capabilities require changes in the existing international arms control regulations. Sen. Nolin agreed that this issue could be discussed in the next year's general report.

D. Presentation by Wade L. Huntley, Director, Simons Centre for Disarmament and Non-Proliferation Research, Liu Institute for Global Issues, University of British Columbia, on *Nuclear North Korea: Old Worries, New Challenges*

14. **Dr Huntley** provided an excellent overview and analysis of North Korea's nuclear endeavors. North Korea has been accumulating plutonium since 1986, utilizing principally its 5 megawatt-electric reactor at the Yongbyon nuclear site, and its nearby plutonium separation plant. The current stock of plutonium is probably sufficient to produce from 4 to 13 nuclear bombs.

15. With regard to the recent nuclear weapon test on 9 October 2006, Dr Huntley mentioned that the explosion might have been a technological failure, but it still exposes Pyongyang's true intentions. The test has not created new challenges or threats, but mainly highlighted the existing ones. Nuclear North Korea will have implications for the Northeast Asian regional security. More disturbing yet, North Korea's actions could trigger a nuclear acquisition "domino effect." Some worry particularly that North Korea might spur Japan to obtain nuclear weapons of its own. But Japan may be less prone to obtain nuclear weapons in the near future than it appears, and is unlikely to make such a decision so long as US security guarantees are credible. The same goes for South Korea & Taiwan. So the North Korean nuclear test is not necessarily going to topple other East Asian proliferation dominos.

16. Consequences for the Nuclear Non-proliferation Treaty are also important. If North Korea remains outside the NPT and suffers no serious consequences, the precedent will erode current NPT compliance norms. But making a "special deal" to gain North Korea's re-accession to the NPT would also set a precedent inducing other NPT parties to bend the rules. Hence, there are no good options to mitigate the impact of North Korea's NPT withdrawal. The NPT did not prevent North Korea (and several other countries) from developing nuclear weapons, but it remains one of our strongest tools to contain these ambitions. Dismissing this vital ongoing role will only make matters worse.

17. The past US approaches towards North Korea moved between engagement and confrontation, between interaction and neglect. While Clinton was more engaging, the Bush administration somewhat moved from neglect-confrontation, to a more 'interactive' approach. The Bush Administration is right to see a link between North Korea's nuclear ambitions and the character of Pyongyang's regime. But this linkage does not automatically make seeking (or passively hoping for) regime change a basis for policy. Liberalization within states is rarely achieved through means that widen the divides between states. Neither a peaceful non-proliferation solution in Korea nor peaceful liberalization of the Pyongyang regime can be promoted through confrontation, Dr Huntley underlined. Progress requires not only sustained "interaction" with North Korea itself, but also engagement in the complex political, economic and social tensions coursing throughout Northeast Asia, and the systemic dynamics of global nuclear proliferation of the post-Cold War world.

18. **Jerzy Zawisza** (PL) asked whether North Korea has enough missiles to transport the nuclear weapons. Dr Huntley said that, indeed, an additional technological challenge is to make the nuclear bomb small enough to put it into a missile. The progress of North Korea in this respect is unknown. However, the country probably does not have long-range missiles yet.

19. **Emin Bilgiç** (TR) criticized the presentation for being too biased. He asserted that the US approach towards countries like India, Pakistan or Israel is entirely different. International agreements seem to be applied unfairly, Mr. Bilgiç said. Dr Huntley replied that the best approach to North Korea, as to any other country, has to be tailor-made as cases are different.

20. **Jan Arild Ellingsen** (NO) and **Peter Bottomley** (UK) maintained that China is the key player when it comes to dealing with the current nuclear crisis in the Korean Peninsula. Dr Huntley agreed that China is willing to accept Pyongyang's actions to a certain limit. However, regime collapse in North Korea would be the worst option for China. He also stressed that if the United States could cooperate more closely with China in this respect, the North Korean authorities would have less room to manoeuvre and play on the existing differences between the two powers.

E. Consideration of the draft Report of the Sub-Committee on the Proliferation of Military Technology *Nuclear Policy of Iran*, [178 STCMT 06 E] presented by Cristian Valeriu Buzea (Romania), Acting Rapporteur

21. **Cristian Valeriu Buzea** (RO) pointed out that the main objective of the Report was to provide overview of different components of Iran's nuclear programme and to try to assess risks stemming from this programme. The sound understanding of the technical side of the issue should provide a basis for decisions aiming to solve the existing crisis over Iran's nuclear programme. The decision-makers should know exactly what capabilities Iran is developing, what are the chances of converting these capabilities to produce nuclear weapons, how much time it would take, etc. The Report concluded that Iran is evidently trying to develop every single element of the nuclear fuel cycle. Most experts agree that from a technological standpoint, Iran will reach nuclear weapons production capability within the next several years.

22. In the discussions period, Mr. Bilgiç took the floor to state that the discriminating attitude against Iran is ongoing. He urged to respect decisions of sovereign states to develop their own technologies. Ms Gallant asked if Iran's certain nuclear capabilities are indeed designed to produce mere medical isotopes, as Tehran claims, Mr Buzea referred to the paragraph 30 of the report, which states that "40MW heavy water moderated research reactor [...] is larger than would be needed for research purposes. If operating to full capacity, this reactor has the potential to produce up to 14kg of plutonium annually (enough to construct 2 nuclear bombs)."

23. **Bato-Zhargal Zhambalnimbuev** (RU) reminded the participants that Russia has its own view on the situation in Iran, which is somewhat less coercive than the Western approach. The Russian view is expressed in a draft resolution presented to the members of the UN Security Council. This draft is an alternative to the draft resolution introduced and advocated by the EU-3. Sen. Nolin reacted to this statement by suggesting to use every possible leverage to influence the Iranian authorities, including close ties between Tehran and Moscow.

The draft Sub-Committee report [178 STCMT 06 E] was adopted with one objection.

F. Presentation on *Improvement of international law for outer space policy* by Rafael Gimalov (Russia)

24. In his presentation, Rafael Gimalov underscored that that international space legislation does not correspond to the realities of our time. Created from 1963 to 1993, the package of 8 international agreements can not regulate new situations relating to space now. More than 40 countries domesticated space not only for peaceful purposes but for military ones too. New subjects of international law, namely private companies, are engaged in this activity. Lack of proper legal regulation of space exploration results in many negative consequences. First of all, the quantity of space debris increases because of the weak control over the launching states' activities. This may paralyse space exploration in the near 20-30 years. Uncontrolled tests of warfare means in space lead to obstruction of orbits used by commercial satellites. This considerably increases risks of unintentional destruction and insurance value of space objects and decreases cost effectiveness of space programmes. Development of a new international legal regime of outer space must outrun the development of warfare means, Mr. Gimalov concluded. He promised to discuss this issue more thoroughly in 2007, preparing a special report for the Science and Technology Committee.

G. Consideration of the draft Resolution on *The Nuclear Weapon Test by the Democratic People's Republic of Korea*, [203 STC 06 E] presented by Michael Mates (United Kingdom), Chairman

25. Mr. Mates presented the draft Resolution. He noted that the behaviour of North Korea clearly demonstrates existing loopholes in the global non-proliferation regime. The draft Resolution underscores several important point. First of all, it is important to express our support to the United Nations Security Council and its resolution which, among other things, calls for specific measures to prevent import and export of sensitive technologies and materials to and from North Korea. Secondly, the resolution suggests that the question of security guarantees for both Koreas should be considered together. Thirdly, Mr. Mates stressed that it might be too late to prevent North Korea from making nuclear weapons, but it is not too late to work out verifiable agreements to prevent any proliferation. Therefore, it is vitally important to strengthen such international mechanisms as Proliferation Security Initiative, the Nuclear Suppliers Group and the Australia Group. The North Korean nuclear test also reaffirms the need to formalise the existing universal nuclear test moratorium.

26. The German and Russian delegations suggested several amendments, most of which were accepted by the Chairman.

The draft Resolution on *The Nuclear Weapon Test by the Democratic People's Republic of Korea* [203 STC 06 E], thus amended, was adopted unanimously.

H. Consideration of the draft Resolution on *Interoperability in network-enabled operations*, [202 STC 06 E] presented by Pierre Claude Nolin (Canada), General Rapporteur

27. When presenting his draft Resolution, Sen. Nolin pointed out that Network-Enabled Capabilities are slowly becoming a reality. However, even at this initial stage of the development of these new capabilities, there are indications that uneven progress in this area might result it a new capability gap between the United States and some of its Allies. Both the United States and the Allies need to redouble their efforts to make sure that a) allied nations develop appropriate networks and C4ISTAR systems, and b) they can effectively plug into each other's networks and share information during joint missions. Otherwise, multinational ventures such as the NRF could become a failure.

28. Therefore, the draft Resolution calls to endorse adequate funding of national network-centric programmes and to ease relevant technology transfer and information sharing policies foster between the United States, as the key country in this respect, and its Allies. NATO should also play a more prolific role as a coordination body, because the net-centricity, in fact, is all about coordination of information.

No amendments were tabled. The draft Resolution [202 STC 06 E] on *Interoperability in network-enabled operations* was adopted unanimously.

I. Election of Committee and Sub-Committee Officers

Science and Technology Committee

Vice-Chairman

Mario Tagarinski (BG)

Sub-Committee on Proliferation of Military Technology

Vice-Chairman	Jan Arild Ellingsen (NO)
Vice-Chairman	Vernon J. Ehlers (US)
Rapporteur	Cristian Valeriu Buzea (RO)

All re-eligible Committee and Sub-Committee Officers were re-elected.

J. Committee activities in 2007

29. The Chairman presented the Committee activities in 2007. He announced that the General Rapporteur would continue working on the issue of the network-centric capabilities. He will also prepare a special report on climate change, focusing more on new developments and approaches in this area beyond Kyoto. The Sub-Committee will draft a report on the highly important issue of proliferation of missiles and missile technologies. Mr. Gimalov volunteered to draft a report on the need to reinforce the existing international space law in order to address the latest developments and the emergence of new actors in the realm of space.

30. As far as the Committee and Sub-Committee visits are concerned, the Chairman announced the plans to visit 1) the United Kingdom, 2) Norway and 3) to hold a special seminar on Arctic environment in Canada. Together with the NATO PA Economics and Security Committee, members of the STC will be invited to participate in the Seminar on Environmental and Energy Security in November in Hungary.
