

## Panel Discussion: Disarmament Verification - a Dialogue on Technical and Transparency Issues

Malte Götsche<sup>1</sup>, Götz Neuneck<sup>2</sup>

<sup>1</sup> Carl Friedrich von Weizsäcker-Centre for Science and Peace Research (ZNF), University of Hamburg, Beim Schlump 83, 20144 Hamburg, Germany, malte.goettsche@physik.uni-hamburg.de

<sup>2</sup> Institute for Peace Research and Security Policy (IFSH), Beim Schlump 83, 20144 Hamburg Germany

During the ESARDA Symposium 2013, a panel discussion on dismantlement verification took place, where technological and political issues were debated. As specified in this article, the major discussion points were the benefit of multinational, in particular European, technical engagement and correspondingly possible implications and future work that could be done in the context of ESARDA. The discussion was hosted by the ESARDA Novel Approaches / Novel Technologies and Verification Technologies and Methodologies Working Groups as well as the German Network for Nuclear Disarmament Verification (see [www.disarmament-verification.org](http://www.disarmament-verification.org))

The purpose of this discussion was to promote a European debate on dismantlement verification. It was found desirable to create a dialogue between the European arms control and technical communities. Given the diversity of national perspectives within Europe on these issues, the question was what could be jointly done. The panelists represented a heterogeneous group from those nations which are currently major stakeholders in this debate. Among the panelists were Mona Dreicer (US, Lawrence Livermore National Laboratory), David Keir (UK, VERTIC, formerly Atomic Weapons Establishment), Ole Reistad (Norway, Institute for Energy Technology), Annette Schaper (Germany, Peace Research Institute Frankfurt) and Sergey Zykov (Russia, IAEA). The panel was moderated by Götz Neuneck (Germany, Institute for Peace Research and Security Policy).

### Discussions on the Panel

The panelists stressed that international engagement between the potential actors should be promoted as the way to find solutions to verification development challenges. If methods and tools were developed unilaterally, how could the other party trust them? Joint research and development was proposed as a way to enable maximum trust in the functionality by all involved parties. The panelists found that one must strive for balances and compromises here. In particular, according to the Nonproliferation Treaty's Articles I and II, no proliferative information may be disclosed to non-nuclear weapon states. Further reasons such as national security and others further limit the amount of information the host party is willing to give. The inspecting party would therefore have incomplete knowledge about

the verification situation which makes the development of methods and tools more difficult. The inspecting state would therefore be interested in a maximum of (non-proliferative) information. This dilemma must be solved cooperatively for joint research and development to succeed. This might require a change of attitudes on both sides through understanding the other's needs: Nuclear weapon states could revisit if helpful non-proliferative information could possibly be declassified. Non-nuclear weapon states must accept that not all information can be given to them and that sometimes explaining why access to certain information is denied cannot be given.

The main question of the discussion was then how to trigger such engagement that would enable such joint activities – as a capacity - and confidence-building measure in its initial state. Keeping in mind the European focus, engagement was largely discussed in the context of nuclear weapon state – non-nuclear weapon state cooperation, though noting that initiatives among nuclear weapon states are also valuable, such as the Trilateral Initiative between the US, Russia and the IAEA. A strong European precedence for such cooperation is the UK-Norway-Initiative, which continues to look into relevant issues such as the development of an information barrier for warhead authentication as well as managed access of inspectors in a high security host facility. While Norway is a key player in this regard, some other non-nuclear weapon states appear to be silent, though this issue could be more relevant to them because of the Nonproliferation Treaty's Article XI calling for disarmament “under strict and international control”. One panelist asked that – given there are few such initiatives - how to convince non-nuclear weapon states that verification is “for them”. How can academia play a part? The role of the International Atomic Energy Agency was also discussed, finding that in particular in the past, the Agency was rather committed to this topic through the Trilateral Initiative and that there could be a future role. In regard to getting more states involved, it was stressed that inclusion requires careful discussions without mirror-imaging, i.e. assuming that the other states' interests would be the same.

Everybody agreed that a good start would be informal or formal cooperation at a scientific or technical level. Many verification issues are of hard scientific nature. It was

stressed that meaningful research can be conducted without access to classified information through working on principal issues of measurement technology or managed access. The benefit of technical collaboration would not only be the research results, but furthermore that the respective research communities are often linked to political decision-makers which could become convinced of the importance of this topic. Scientific engagement could have the form of international exercises and workshops; one participant advocated a “nuclear disarmament laboratory” including purpose-made research programs.

Besides scientific collaboration, the panelists agreed that political needs should be discussed and analyzed. One participant raised the question of what level of intrusive verification is expected and what political boundary conditions must be considered. How much verification is enough? Another participant argued that one should step back and analyze risk paths to find out where verification must be the strongest, somewhat like the Safeguards state-level approach discussed in the IAEA.

An overriding problem identified during the discussion was the lack of funding. Some panelists criticized that funding is often only made available when there is an immediate need for verification solutions, for example because of on-going treaty negotiations and that there are only few actors who currently perceive the need for immediate action. The panelists agreed though that research need for arms control verification is indeed immediate, given that problems have a sincere complexity both from a technical and an implementation point of view, therefore requiring much research and development. Efforts should therefore be strengthened now so that solutions would be available until politically desired.

Precedence of such an approach is the Group of Scientific Experts that researched monitoring technologies and data analysis methods relevant for the Comprehensive Test Ban Treaty verification long before treaty negotiations. Furthermore, one participant argued that the easiest way to hide warheads was now, so that dismantlement verification could become relevant much sooner than Global Zero. All in all, the participants saw a sincere lack of needed funding for such activities, especially in non-nuclear weapon states.

### **Potential Engagement for ESARDA**

According to the panelists, ESARDA would be an excellent forum for further deliberations on dismantlement verification. Firstly, ESARDA participants have the needed expertise, ranging from nuclear detection and Safeguards experts to researchers with an interdisciplinary orientation, emphasizing that much expertise from Safeguards are helpful to develop dismantlement verification methods and tools. Secondly, ESARDA provides a heterogeneous international (European) forum consisting of both nuclear weapon and non-nuclear weapon states. Therefore, it appears that ESARDA could be a good platform to broaden efforts and to encourage experts with relevant expertise to start thinking about this topic. Already now, the Novel Approaches / Novel Technologies and the Verification Technologies and Methodologies Working Groups have dismantlement verification on their agenda and plan to continue to work on that subject. Efforts like this could mark the beginning of a more comprehensive European engagement with dismantlement verification which should be supported given the wealth of technical expertise that already exists within Europe.