

THE CHALLENGES OF NUCLEAR DISARMAMENT VERIFICATION: DEFINING A GROUP OF SCIENTIFIC EXPERTS FOR DISARMAMENT VERIFICATION

39th ESARDA Symposium on Safeguards and Nuclear Non-Proliferation, Meliá Düsseldorf, Düsseldorf, Germany, 16-18 May 2017

By Noel Stott, Senior Researcher

Thank you. It is indeed good to be here and to have the opportunity to interact with so many research organisations, safeguards authorities and nuclear plant operators and to exchange information on new aspects of international safeguards and non-proliferation.

My presentation is based on a recent VERTIC publication compiled by VERTIC staff and in particular its Executive Director, Mr Andreas Persbo: 'Defining a Group of Scientific Experts for Disarmament Verification', *VERTIC Brief 27*, May 2017.

Introduction

The importance of verification has repeatedly been emphasised in many international forums including recently in Resolution 71/67 adopted on 14 December 2016 by the United Nations General Assembly (UNGA). This resolution mandates the UN Secretary-General to establish a group of governmental experts (GGE) to consider the role of verification in advancing nuclear disarmament.

Effective nuclear disarmament verification is an essential precondition for achieving 'a world without nuclear weapons'. Without verification and the two fundamental principles of transparency and irreversibility, nuclear disarmament activities may not credibly provide the trust and confidence needed by all states in a world where all nuclear weapons have been abolished. Resolution 71/67 expresses the General Assembly's conviction that 'identifying and developing practical and effective measures of nuclear disarmament verification and monitoring' will 'foster confidence and facilitate efforts to achieve and maintain a world without nuclear weapons.' International co-operation in addressing the underlying scientific and technical questions on nuclear disarmament verification measures is thus of great importance.

While past and on-going initiatives in this field have carried out valuable research and explored useful approaches, this work needs to be not only captured and preserved but sustained, better co-ordinated and continuously renewed as technology advances. Thus, the creation of a multilateral Group of Scientific Experts on Nuclear Disarmament Verification (GSE-NDV) could, in the long-term, assist in the development of a truly shared and trusted understanding of the technical, procedural and policy challenges of nuclear disarmament verification (especially between nuclear and non-nuclear weapon armed states and between the nuclear armed states themselves). It could also generate sustained dialogue between scientific and technical experts, diplomats and policy-makers within and between the nuclear- and non-nuclear weapon states. A GSE-NDV could also consolidate efforts in the field to date, identify and co-ordinate

research needs and initiate ways and means to undertake such research within limited budgets and organisational capacity.

Background to the GSE-CTBT

The establishment of groups of qualified experts in the form of a Group of Governmental Experts (GGE) or a Group of Scientific Experts (GSE) is a relatively common approach within the United Nations system as well as in other intergovernmental organisations such as the European Union. These groups are often mandated to undertake in-depth studies on a particular topic and to make recommendations to the body that created them. Importantly, they are not mandated to negotiate, for example, a treaty or convention.

There are many examples of such bodies in the arms control, non-proliferation and disarmament fields as well as in other areas of international concern. Examples include the GGE tasked with making recommendations on possible aspects that could contribute to a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices. Another example is the GGE on lethal autonomous weapons systems.

The Intergovernmental Panel on Climate Change (IPCC), established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) is perhaps the most well-known expert group with a long-term mandate in a non-arms control field.

In the context of disarmament verification, a prime example is the Ad Hoc Group of Scientific Experts to Consider International Co-Operative Measures to Detect and Identify Seismic Events, commonly referred to as the ‘Group of Scientific Experts’ (GSE-CTBT).

This GSE comprised mostly of seismologists, was active for 20 years, from 1976 until 1996. The group was tasked to ‘specify the characteristics of an international monitoring system’ using seismological monitoring. During the cold war, it was the only ongoing multilateral dialogue on disarmament issues and while progress was slow, the work to design a global verification system allowed for the sharing of knowledge on how a seismic verification system could, in principle, be achieved.

It is a key example of how expert groups can be used to provide capabilities that facilitate agreement on difficult technical issues for the monitoring or verification of compliance with a treaty.

Its research agenda and the scientific progress that came out of it were unconnected to political negotiations. Its agenda was broad enough to enable continuous work through two decades, ultimately leading to the creation of a shared understanding of verification options. The GSE-CTBT also showed that scientists from across the political divide, working side-by-side over many years, can significantly assist diplomatic processes and ensure that later agreements can be implemented.

Key considerations when applying the concept to NDV

A key question is whether this concept can be exported to the institutional realities of 2017.

Presently, political conditions are challenging. Deep divisions between major nuclear powers, especially the United States (US) and Russia; uncertainty about the Trump Administration's future nuclear posture and its apparent disdain for arms control and disarmament; rising tensions on the Korean Peninsula; lack of

progress in the context of the NPT review process and no progress toward entry-into-force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), to list but a few.

Moreover, views on approaches to nuclear disarmament vary. However, all states remain committed to the long-term goal of irreversible disarmament. The unanimous support for Resolution 71/67 on nuclear disarmament verification demonstrates this commitment.

Clearly, the research scope for multilateral disarmament verification would have to be much broader than was the case for the GSE-CTBT. Defining a scope and set of research tasks would be more complex and would require that no political assumptions on what disarmament activities states should or will take are made. However, as was undoubtedly shown by the GSE-CTBT, it is possible to conduct preparatory scientific and technical analysis before political negotiations or indeed without a commitment to commence such negotiations, in other words, in world not conducive to global disarmament.

A GSE mandated to explore nuclear disarmament verification measures (like the GSE-CTBT) would need to be linked to a multilateral body such as the Conference on Disarmament or the UNGA in order to provide a formal framework allowing states, to not only commit experts to participate in meetings, but also to make considerable investments in research and outreach activities and for its efforts to be sustained, consistent, and focused.

Such a group would need to take into account previous and current initiatives on verification, such as the UK-Norway Initiative and its successor – the Quad Nuclear Verification Partnership – as well as the International Partnership for Nuclear Disarmament Verification (IPNDV), which is due to enter phase two of its programme of work in 2018. Other older processes would also need to be examined for applicability – including, for example, the Black Sea Experiments of the late 1980s and the Trilateral Initiative which was launched in 1996 by the US, Russia and the International Atomic Energy Agency (IAEA).

With this in mind, and to possibly feed into the GGE's deliberations in 2018 and 2019, VERTIC has designed a series of four regional consultations: in Africa, Asia, Europe and Latin America to be hosted in 2017. Importantly, VERTIC aimed not to prejudice or pre-empt any recommendation that may be made by the GGE established by UNGA/RES/71/67.

VERTIC Workshops

VERTIC has so far hosted two of the four workshops – one in Vienna for European states and organisations and one in South Africa for Africans – both in April 2017.

The two-day consultations involved 33 researchers, diplomats and policy makers, drawn from eleven countries and 16 organisations on the two continents. Half of the participants were drawn from governments. All individuals took part in their personal capacity although they were also able to articulate what they thought their government's or organisation's view might be. Each participant contributed subject to the Chatham House rule.

Each workshop was guided by a set of discussion papers designed to stimulate debate and produce practical suggestions, including two food-for-thought papers, one produced for each meeting. These served as a basis for discussion on how such a GGE-NDV could contribute to regional security and how involvement

by the relevant bodies, such as the European Union and the African Union (AU), could move the debate forward.

VERTIC will hold two further workshops in the latter half of 2017, one for South American and one for Asian stakeholders. It will deliver its final report during the UN First Committee in October or November 2017.

Interim conclusions

The purpose of these workshops was neither to reach consensus nor to draw definitive conclusions regarding the feasibility or desirability of a GSE-NDV. Nevertheless, participants in both Vienna and Pretoria concurred that:

1. Nuclear disarmament verification is probably one thing that all states can agree or commit themselves to — although they may disagree on exactly what it means and on the measures needed to achieve it;
2. Many lessons could be derived from the GSE-CTBT. Above all, it demonstrated that it is possible and useful to conduct preparatory scientific and technical analysis and develop capabilities that could facilitate agreement on difficult technical issues for the monitoring or verification of compliance with a treaty;
3. The establishment of a GSE-NDV as an apolitical body would constitute an important means to conduct joint research into verification technologies and data-analysis methodologies, while the political environment is not conducive and while political processes are maturing;
4. One would, however, need to define 'nuclear disarmament verification'. In particular what stage of the disarmament process it refers to - such as dismantlement, material disposition or accounting.
5. A GSE-NDV's mandate should be set by the United Nations General Assembly (UNGA), as this would give ownership to all stakeholders, irrespective of geographical location or legal status under the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT). It would also give the group credibility and legitimacy. Finally, it could potentially provide a source of long-term funding (possibly supplemented by a mechanism such as a Voluntary Trust Fund).
6. A GSE-NDV's scope of work, even if broad and open-ended, would have to have clear scientific and technical parameters;
7. Further to that, a GSE-NDV's scope of work could be derived from UNGA/RES/71/67. In particular, participants highlighted the third operative paragraph, which calls for all States to work together to 'identify and develop practical and effective disarmament verification measures' through developing 'tools, solutions and methods and capacity-building.' Participants also noted the fourth operative paragraph, that calls for the 'development and strengthening of practical and effective nuclear disarmament verification measures.'
8. Scientists and technical experts should form the core of a GSE-NDV. However, provision should be made for policy-makers and legal experts to interact with it periodically;

9. Scientific and technical experts forming a GSE-NDV should be drawn from both nuclear- and non-nuclear armed states;
10. An important aspect of the work of a GSE-NDV should involve medium to long-term capacity-building processes and programmes on verification techniques and mechanisms;
11. States would need room to interpret the mandate to suit their foreign policy goals - NPT member states should be able to justify their work under Article VI. Non-NPT states should be able to justify their participation by their UN membership.
12. The mandate should also be broad enough to accommodate the policy positions of both 'immediate abolitionists' and 'step-by-step advocates'.
13. The GSE-NDV would need to strike a balance between what is politically desirable to achieve and what is practically feasible given the national security constraints of the work;
14. The GSE should aim to overcome issues relating to duplication, overlap and 'reinventing the wheel,' but should not necessarily be the sole vessel of international co-operation on disarmament verification.
15. In that sense, a GSE-NDV would need to develop a mandate and working methodology that a) takes into account existing initiatives; b) makes use of their work in this area; and c) benefits from the technical expertise in these groupings.
16. Following on from the GGE's work in 2018 and 2019, such a GSE-NDV could feasibly commence its work in the early 2020s and with a mandated but open agenda.

Conclusion

The complete elimination of nuclear weapons everywhere is in the long-term security interest of all states. However, both government representatives and various non-governmental experts point out that obstacles to nuclear disarmament include both the lack of favourable political and security conditions, and the challenges associated with verifying the dismantlement of nuclear weapons.

As part of efforts to implement Resolution 71/67, it may be prudent therefore for states to co-operate in establishing a group of scientific experts that would address technical challenges to, and advance the development of solutions for, nuclear disarmament verification in the longer term.

As I have noted, the inspiration for such a group being established is the example of the group of scientific experts (GSE) that was created in 1976 to study monitoring and verification approaches for a nuclear test ban.

The creation a multilateral Group of Scientific Experts on Nuclear Disarmament Verification, to complement existing initiatives and partnerships can only increase the international knowledge-base of verification options, enable all states to actively collaborate in developing practical methods that could

contribute to the verification of irreversible dismantlement of nuclear weapons and provide a platform for long-term sustainability, capacity-building and consolidation.

It was scientists that brought nuclear weapons into being and it will be scientists and technical experts who will have as much a role in their abolition as they had in their creation.

Thank you!