

# One year into the newly established Working Group on the Strengthening of the BWC: Assessing progress

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## Introduction

In 2023, the Biological Weapons Convention (BWC) entered a pivotal phase with the initiation of a new substantive intersessional programme for the period 2023 to 2026. Recognizing the crucial need to strengthen the effectiveness and to improve the implementation of the Convention in all its aspects, at the Ninth Review Conference in 2022 States Parties adopted this programme, which has as its centrepiece the ‘Working Group on the Strengthening of the Convention’.

The Working Group aims to “*identify, examine and develop specific and effective measures, including possible legally-binding measures, and to make recommendations to strengthen and*

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*institutionalize the Convention in all its aspects [...]”* On the completion of its work, preferably before the end of 2025, the Working Group will adopt by consensus a report comprising conclusions and recommendations. In turn, States Parties will consider the report at the Tenth Review Conference in 2027 or at an earlier Special Conference and decide on any further action.

The Ninth Review Conference decided that the Working Group will address the following measures on: (a) international cooperation and assistance under article X; (b) scientific and technological developments relevant to the Convention; (c) confidence-building and transparency; (d) compliance and verification; (e) national implementation of the Convention; (f) assistance, response and preparedness under article VII; and (g) organizational, institutional and financial arrangements.

In 2023, the Working Group convened in Geneva for its organizational meeting and held two substantive sessions, thereby laying the groundwork for further in-depth discussions. Against challenging geo-strategic circumstances, States Parties engaged in a relatively constructive manner and presented their initial national positions on six out of seven topics allocated to the Working Group, including most notably on the issue of compliance and verification. In addition, discussions regarding measures on assistance, response and preparedness under article VII are scheduled for 2024, in accordance with the Indicative Schedule of activities.<sup>1</sup>

### **Finding agreement on organizational and procedural matters**

The first session of the Working Group was held from 15 to 16 March 2023 and focused on organizational matters. The meeting was opened by Ms. Carolyne Mélanie Regimbal, Chief of Service, United Nations Office for Disarmament Affairs, Geneva Branch and was chaired by Ambassador Camille Petit of France, one of the Working Group’s elected Vice-Chairpersons for the period 2023-24. A total of 257 delegates from 82 States Parties, along with two Signatory States and two States not party to the Convention participated in the meeting. Additionally, national delegations were joined by the United Nations, including the United Nations Office for Disarmament Affairs and the United Nations Institute for Disarmament Research. The European Union and the World Health Organization participated as observer agencies, and two non-governmental organisations attended the session.

Importantly, the organisational meeting took all necessary decisions, thereby facilitating a smooth start for the subsequent substantive meetings of the Working Group. States

Parties adopted a brief procedural report by consensus comprising the following key elements:

- Adoption of an agenda with eight distinct items covering the entirety of the Group’s future work;
- Agreement on an indicative schedule of activities with a total of sixty days distributed between 2023 and 2026;
- Election of the Working Group’s bureau for the period 2023–24 with Ambassador Flavio Soares Damico of Brazil assuming the role of Chair, and Ambassador Camille Petit of France and Mr Irakli Jgenti of Georgia as Vice-Chairs; and
- Confirmation of the Rules of Procedure.

### **The second session of the Working Group: international cooperation and assistance, and scientific and technological developments**

The first in-depth discussions focused on international cooperation and assistance as well as on scientific and technological developments, including their related mechanisms. More than 600 participants, including representatives from 122 States Parties, two Signatory States, and two States not party gathered for the second session of the Working Group from 7 to 18 August 2023 and introduced 27 working papers. Additionally, representatives from four United Nations organisations, nine specialized agencies and regional intergovernmental organisations, as well as twenty-one non-governmental organisations and research institutes participated in the meeting.

At its second session, the Working Group addressed three topics, namely international cooperation and assistance (ICA) under Article X, scientific and technological developments relevant to the Convention, and national implementation of the Convention. Additionally, States Parties devoted one day each to the mechanisms on international cooperation and assistance under Article X, and on the review of scientific and technological developments.

Upon request from several delegations, Ambassador Damico of Brazil introduced thematic panel sessions to set the stage and facilitate informed discussions by States Parties. Panellists from a wide range of entities provided valuable insights and added richness to the deliberations. Furthermore, in the run-up to the session the Chair had appointed several ‘Friends of the Chair’ from various regional groups to advance discussions and aid consultations on all topics.

Deliberations regarding international cooperation and assistance (ICA), including the establishment of a mechanism,

focused on its key elements, namely the overall purpose, mandate, structure, composition, funding and requisite resources for its implementation. All States Parties that took the floor considered strengthening the implementation of Article X and creating an ICA mechanism a shared priority.

At the same time, there were still considerable differences among delegations on several aspects. In order to converge positions, the facilitators proposed for consideration, inter alia, a hybrid approach consisting of an open-ended ICA Committee and a smaller ICA Steering Group for oversight of an ICA mechanism. While some States Parties supported the establishment of a results-oriented ICA Action Plan, others argued for a needs-driven ICA Programme. Suggestions were also made regarding strengthened Article X reporting guidelines and an improved Article X Database. With respect to financing, some States Parties supported the establishment of a voluntary fund, while others argued for either voluntary assessed contributions or an increase of assessed contributions distributed among all States Parties. As regards staffing, all States Parties that took the floor acknowledged the need for additional resources being given to the Implementation Support Unit (ISU). In order to advance discussions and converge positions, the Friends of the Chair issued a Conference Room Paper on [Proposed Considerations Related to the Development of an Article X Mechanism](#).

In the deliberations on ‘Measures on scientific and technological developments relevant to the Convention’, discussions focussed on the establishment of a review mechanism under the Convention. Numerous delegations noted the rapid pace of developments in science and technology, bringing both opportunities and risks, and stressed the urgency of putting in place such a mechanism to keep pace with these developments. Additionally, it was noted that such an instrument could provide benefits to States Parties also in a number of other areas, including national implementation and ICA. States Parties highlighted aspects such as inclusivity, independence, geographic representation, gender diversity, and youth inclusion as essential elements of the potential mechanism. Delegates expressed different views concerning the mechanism’s composition. Some were in favour of a smaller mechanism with limited membership, others supported an open-ended one or favoured a hybrid model with two bodies: one open to all States Parties and another one limited in size for reporting purposes. Additionally, a number of States Parties positively noted the [Tianjin Biosecurity Guidelines for](#)

[Codes of Conduct for Scientists](#) in the course of the discussions. The facilitators introduced a ‘Food for Thought’ Non-Paper, which garnered appreciation from many delegations as a solid foundation for subsequent discussions. Furthermore, delegations also acknowledged North Macedonia’s Working Paper from the Ninth Review Conference on [Draft Terms of Reference and Rules of Procedure toward the development of a BWC Science and Technology Advisory Process](#) as a sound basis for the continuation of the deliberations. While discussions on the establishment of a mechanism were predominant, they also encompassed other science and technology related issues. These included, inter alia, the implications of the lowered biotechnology costs overlap with the Organisation for the Prohibition of Chemical Weapons/Chemical Weapons Convention on toxins, the dual impact of lowered biotechnology costs which increase risks but also offer beneficial opportunities for compliance, enforcement, and public health security, as well as harnessing AI applications for disease monitoring genetic engineering and outbreak surveillance.

States Parties also addressed national implementation measures, and multiple delegations took the floor to inform about national efforts and progress towards the full and effective implementation of the Convention at the domestic level. Besides two panel sessions, the ISU also briefed on its initiatives to bolster national implementation in States Parties. At a side event to the second Working Group session, VERTIC and UNIDIR launched the new [BWC National Implementation Measures Database](#), which provides comprehensive insights into the various national implementation measures adopted by States Parties.

At the end of the meeting, the Chair, under his own responsibility, issued a compilation of existing proposals concerning a [Science and Technology mechanism](#) and an [Article X mechanism](#). In his closing remarks, and following the adoption of a brief [procedural report](#), the Chair made an overall positive assessment of the session. In his view, this was in part due to the preparatory work done by all the Friends of the Chair, the substantive level of engagement by all States Parties and the quality of the inputs that the meeting had received from the invited international organisations and other experts. Additionally, the Chair also acknowledged positively the diversity of participation in the discussions with 122 of the 185.<sup>2</sup> States Parties attending the Working Group session and delegations from around the world taking the floor on every topic. The Chair noted that “we have witnessed a paradigm

shift towards a much more practical and concrete mode of operation in which we are now working on draft proposals and text, particularly on the development of appropriate recommendations for the development of mechanisms for international cooperation and assistance and for the review of science and technology.”

### **The third session of the Working Group: Addressing compliance and verification for the first time in two decades**

The third session of the Working Group was held from 4 to 8 December 2023 with more than 640 participants from 117 States Parties, two signatory States, one State not party, two United Nations organisations, eight specialized agencies and regional intergovernmental organisations and twenty-eight non-governmental organisations and research institutes attending the meeting.

As at the August session, several expert panels were held to facilitate informed discussions. States Parties addressed the issue of compliance and verification for three days, marking the first formal discussion concerning this crucial topic within the BWC in over two decades. Additionally, one day each was allocated to confidence-building and transparency, and organisational, institutional and financial arrangements. Over the course of the week, States Parties submitted 18 working papers for consideration.

Discussions on confidence-building and transparency were kicked off by presentations from the [ISU](#) and [UNIDIR](#). In their interventions, numerous States Parties acknowledged the value of Confidence-Building Measures (CBMs) while at the same time clearly emphasizing they were neither a substitute for verification nor intended to assess compliance. Some contended that measures such as CBMs, though beneficial for transparency, were in themselves inadequate and urged the exploration of mechanisms to ensure universal compliance. A common sentiment among several nations was the advocacy of a move towards a robust, legally-binding instrument with comprehensive verification provisions. Different views were expressed by delegations concerning voluntary measures to enhance transparency. States Parties also raised some new suggestions, such as the integration of global health security metrics into the CBMs regime, making CBMs mandatory, introducing a periodic peer review process of CBM submissions, increasing assistance to non-submitting States Parties and having open hearings with the private sector, industry and

academia. In their interventions, many delegations welcomed the record number of [103 CBM submissions](#) and thanked the ISU and UNODA for the assistance provided.

Discussions on compliance and verification also were initiated by panels of experts, including presentations from the ISU, [CTBTO](#), [IAEA](#), [OPCW](#), [UNIDIR](#), [UNODA](#), [WHO](#) and experts in their individual capacities. Thereafter, delegations presented working papers on the topic and shared their national positions. While all recognized the importance of verification and compliance in strengthening the Convention, there were conceptual differences on the scope, objective and starting point. Some delegations, while recognizing the value of the work done by VEREX<sup>3</sup> and the Ad Hoc Group,<sup>4</sup> felt that it should not be the starting point, but rather a possible reference point for defining verification measures. Others considered that the VEREX report and the draft protocol produced by the Chair of the Ad Hoc Group should serve as a starting point, although it would need to be updated to take account of advances in science and technology. Furthermore, some noted that the scope of compliance and verification should encompass the entire Convention, whereas others stressed that measures should focus on Articles I, III and IV. Different views were also expressed on the scope of verification measures, particularly on the potential value of routine inspections in the framework of the BWC. To advance the discussion, several delegations recommended that the Working Group concentrate on establishing a roadmap for an in-depth examination of the issue with input from technical experts.

Additionally, the session also saw some discussions on organisational, institutional, and financial arrangements. Given the nature of this cross-cutting issue, progress is very much linked to the other six measures under consideration by the Working Group. At the same time, some preliminary views were shared to explore options for strengthening the Convention’s institutional framework and transforming the ISU into a permanent structure, such as a Secretariat, depending on the overall outcomes of the Working Group’s proceedings.

After five days of intense discussions, the third session of the Working Group concluded with the adoption of a [procedural report](#). However, reaching consensus on the procedural report proved to be challenging, as the Russian Federation insisted that the Working Group would need to grant specialised agencies and regional intergovernmental organisations explicit approval to submit their views in writing. Under the able leadership of Ambassador Damico of Brazil, States Parties were eventually able to resolve the issue.

## Assessment and conclusion

During 2023 work began under the newly established Working Group on the Strengthening of the Convention. Notwithstanding the very difficult geopolitical circumstances that also played out in the proceedings, exchanges among States Parties were largely constructive, with many delegations presenting concrete proposals and making substantive interventions on the six topics addressed at two substantive sessions. While States Parties' views still need to converge on multiple issues, and discussions on verification and compliance are at an early and conceptual stage, the substantive proposals presented by several States Parties give hope that tangible progress can be made.

The wide participation and active engagement from multiple delegations, including smaller ones that have traditionally been less engaged on BWC matters, represents another noticeable, positive development. This can also be attributed to, inter alia, the sponsorship programme, which enabled the participation of 69 experts from developing States in 2023. Five States Parties (Canada, France, South Korea, Spain and the United Kingdom), alongside the European Union and bilateral arrangements made by the United States contributed to the programme. At the same time, further efforts need to be undertaken to facilitate the equal participation of women in the Working Group sessions. Women constituted around forty per cent of delegates and delivered around one-third of all statements in 2023. Additionally, around thirty per cent of the delegations were led by women.

Nurturing a sense of shared responsibility among States Parties, converging positions on a set of concrete recommendations and developing a clear roadmap for the way ahead will be crucial in 2024. As emphasized by Ambassador Damico in his update to the 2023 Meeting of States Parties (MSP), it will be crucial that any proposals developed need to be “politically acceptable, technically feasible and financially cost-effective and sustainable”. The Working Group will hold its fourth session from 19 to 23 August 2024 and its fifth session from 2 to 13 December 2024. It is hoped that the multiple procedural issues faced at the MSP held immediately after the third session of the Working Group in December 2023 can be contained to the extent possible and will not impede progress at the upcoming sessions of the Working Group or hinder it from fulfilling its mandate and objectives.

## Endnotes

1. As per [the indicative schedule of activities between 2023 to 2026](#) a total of ten days have been allocated for compliance and verification, eight days each for international cooperation and assistance under Article X, and scientific and technological developments relevant to the Convention; seven days allocated for assistance, response, and preparedness under Article VII; five days each for confidence-building and transparency, and national implementation of the Convention; four days allocated for organisational, institutional, and financial arrangements; two days were set aside for the mechanisms on international cooperation and assistance, and on scientific and technological developments. The Working Group also agreed to allocate four days for the comprehensive consideration of all topics, including the two mechanisms. Lastly, five days have been dedicated to preparing a report, which is to be adopted by consensus.
2. South Sudan acceded to the BWC on 15 February 2023, becoming the 185th State party. As at 31 December 2023, four signatory States had not yet ratified the Convention, and eight States had neither signed nor ratified it.
3. VEREX: Ad Hoc Group of Governmental Experts established in 1991 by the BWC [Third Review Conference](#) to identify and examine potential verification measures from a scientific and technical standpoint. In September 1993, VEREX submitted its [report](#), which identified 21 potential verification measures. The report concluded that combinations of these verification measures “would contribute to strengthening the effectiveness and improve the implementation of the Convention” (see BWC/CONF.III/VEREX/8).
4. Ad Hoc Group: A Special Conference of the States Parties to the Convention in September 1994 decided to [establish an Ad Hoc Group](#), open to all states parties to consider a variety of measures to strengthen the Convention. A total of twenty-four sessions of the Ad Hoc Group were held between 1995 and 2001. In 2001, Ambassador Tibor Tóth of Hungary, chair of the Ad Hoc Group, proposed a compromise text to resolve evident differences in perspective among delegations (BWC/ADHOCGROUP/CRP.8). However, negotiations failed in 2001.

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The views expressed herein are those of the author and do not necessarily reflect the views of the United Nations.

## Verification Watch

### IAEA stops drawing safeguards conclusions for some Member States

Hugh Chalmers

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) requires non-nuclear-weapon states (NNWS) to conclude safeguards agreements with the International Atomic Energy Agency (IAEA), so that the IAEA can verify the fulfilment of their obligation not to acquire nuclear weapons. Some NNWS with very limited nuclear activities (such as using nuclear material only as shields for radioactive sources) have taken advantage of an old modifying protocol to suspend the majority of their agreements with the IAEA. This leaves the IAEA with few opportunities to draw any meaningful conclusions about the nature of the nuclear activities taking place in those states, and the state's continued eligibility for this modifying protocol.

After almost twenty years of encouraging these NNWS to upgrade and improve these protocols, the IAEA will no longer draw any safeguards conclusions at all for them. This puts some of these NNWS – particularly those such as Saudi Arabia that are seeking international collaboration to expand their nuclear activities – in an awkward position. They will no longer have the IAEA's 'stamp of approval' that their nuclear activities are purely peaceful.

#### How the IAEA draws safeguards conclusions about nuclear activities

Comprehensive Safeguards Agreements (CSAs) require NNWS to implement a system of accountancy and control for nuclear material, provide the IAEA with information regarding nuclear material and facilities, and to cooperate with the IAEA to facilitate the verification of this information. CSAs also require the IAEA to ensure that safeguards are applied on *all* nuclear material in *all* peaceful activities within the state. This enables the IAEA to provide credible assurance to the international community that states are not using nuclear material and technology to develop nuclear weapons.

States can help the IAEA in this endeavor by voluntarily augmenting their CSAs with Additional Protocols (AP). These expand the information and access they must provide to the IAEA beyond the accountancy of nuclear material and

associated facilities to include, for example, nuclear fuel cycle research and development activities not involving nuclear material. This provides the IAEA with further tools with which it can verify that NNWS have declared all their nuclear material. States with little or no nuclear material and no nuclear materials in a facility could also agree a Small Quantities Protocol (SQP), which suspend most reporting obligations on the state and all IAEA inspection provisions.

The IAEA Secretariat issues an annual Safeguards Implementation Report (SIR) to its Member States which sets out the conclusions it has drawn from its safeguards activities. The format and language of these reports has evolved over time as the IAEA comes to understand what it can and cannot achieve through the rights given to it in safeguards agreements. For NNWS with both a CSA and an AP in force, the IAEA may draw broader conclusions than it can for NNWS with only a CSA in force. For the former, where the IAEA finds no indications of diversion of declared nuclear material, undeclared nuclear activities at known facilities, and undeclared material or facilities, it may conclude that "*all* nuclear material remained in peaceful activities". For the latter (where the IAEA cannot call on broader declarations from the state to assure themselves that all nuclear material has been declared), it may only conclude that "*declared* nuclear material remained in peaceful activities". Where a NNWS has not brought a safeguard agreement into force as required by the NPT, the IAEA cannot draw any safeguards conclusions.

#### Shortcomings of the old Small Quantities Protocol

For NNWS with CSAs and original SQPs, the Secretariat's ability to draw a credible and soundly based annual safeguards conclusion is "significantly affected". As the 2022 SIR explains "this is due, inter alia, to the fact that the original standard text of the SQP holds in abeyance the requirement for these States to provide to the Agency an initial report on all nuclear material as well as the Agency's right to perform verification activities in these States". Without information from, or access to inspect, the state in question, the IAEA must rely on other sources of information (such as open sources) from which to draw conclusions about any nuclear material there, or indeed the state's eligibility for the SQP.

The IAEA Secretariat brought this shortcoming to the attention of IAEA Member States in the early 2000s. As a result, the Board of Governors decided in 2005 that SQPs should be modified to require the submission of initial reports on nuclear materials and early facility design information, and to allow IAEA inspections. The Board also restricted the eligibility for these modified Small Quantities Protocols (mSQP) to states that had not yet taken any decision to construct or authorise construction of a nuclear facility. The Secretariat was then authorized to update all SQPs via exchanges of letters with relevant states, and those states were called on to conclude these exchanges as soon as possible. The Secretariat also expanded its assistance offer to concerned states to help them amend or rescind their SQPs. In 2005, 75 states had SQPs in force, and at the end of 2023, 21 original SQPs remained in force. These were with Barbados, Bhutan, Bolivia, Dominica, Fiji, Grenada, Guyana, Kiribati, Kyrgyzstan, Mongolia, Myanmar, Nepal, Oman, Saint Vincent, Samoa, Saudi Arabia, Sierra Leone, Solomon Islands, Trinidad and Tobago, Yemen and Zambia.

### **The IAEA runs out of patience**

The IAEA has been flagging the challenges it faces in drawing credible safeguards conclusions for states with the old SQP for some time and is now making it clear that it “will no longer be able to continue to draw safeguards conclusions” for these states. It is not clear why this decision was not made sooner. Since flagging the challenges posed by outdated SQPs in 2005 the IAEA has been encouraging hold-out states to update their agreements, and almost 20 years later patience seems to have run out for those that have not. In the 2024 SIR, the IAEA will not be able to say anything about the diversion or lack thereof of nuclear materials in these states away from peaceful activities. Their safeguards agreements with the IAEA are not fit for purpose, and the IAEA can give no more assurance of the peaceful nature of their nuclear activities than it can for those with no safeguards agreements at all.

This does not imply that states with an outdated SQP are diverting nuclear material away from peaceful purposes or violating their NPT obligations. Neither does it imply that the IAEA Board of Governors will formally censure these states or report them to the UN Security Council for failing to adequately facilitate the IAEA’s verification activities by amending or rescinding their SQPs. Some are least-developed countries or are low- or middle-income countries that have little infrastructure or capacity to update their SQPs. The IAEA’s decision

will not fix this, but it may encourage other Member States to help do so. Several Member States have rightly expressed concern about the Agency’s inability to draw safeguards conclusions for those with original SQPs, and some (including the United States, Japan and Australia) provide assistance to states looking to strengthen their implementation of safeguards. Some other Member States have welcomed the IAEA’s decision to stop drawing such conclusions, possibly considering it a necessary correction after almost 20 years of drawing conclusions on such shaky foundations.

### **The case of Saudi Arabia**

The IAEA’s decision may not be welcomed by Saudi Arabia. Saudi Arabia has an original SQP in force, despite actively pursuing an indigenous nuclear fuel cycle, receiving bids to construct a nuclear power reactor, and working to bring a research reactor (supplied by Argentina) online. Saudi Arabia is also looking to establish a nuclear cooperation agreement with the United States (or ‘[123 agreement](#)’) and is reportedly pressing for that agreement to include cooperation on uranium enrichment—a sensitive nuclear technology, the transfer of which is not normally allowed by 123 agreements. Any such agreement with Saudi Arabia would need to be agreed by the US Congress, which might object if the IAEA is unable to conclude that nuclear material in Saudi Arabia was not being diverted away from peaceful uses. This is exacerbated by Saudi Arabia’s refusal to bring an AP into force to augment its CSA.

Saudi Arabia announced in September 2023 that it would rescind its SQP entirely and take on all safeguards obligations under a CSA (given the construction of its research reactor, it is automatically ineligible for an mSQP). While efforts are underway to enhance Saudi Arabia’s regulatory infrastructure to take on all CSA obligations, the Saudi Government has described it as a “big challenge” to get ready. The United Kingdom, which has a significantly larger nuclear industry subject to IAEA safeguards, took roughly three years to overcome this challenge. Until Saudi Arabia overcomes this challenge, the IAEA has made it clear that it cannot currently draw any credible conclusions about the purely peaceful nature of nuclear activities in the country. While this is not as significant as the IAEA’s inability to provide assurance that Iran’s nuclear programme is exclusively peaceful, it should serve as a similar reality check for IAEA Member States: the IAEA cannot provide meaningful assurance of peaceful nuclear activities without effective legal arrangements with and within its Member States.

## Cooperative overhead monitoring in disputed territories

Grant Christopher and Alberto Muti

Territorial disputes are difficult to resolve and frequently result in armed conflict. Could an Open Skies Treaty-like formulation applied to these disputes help support a peaceful resolution or reduce tensions?

Territorial disputes—disagreements between two or more states about which state exercises sovereignty over a certain part of territory—can occur for many reasons: a state may seek to conquer a part of another state; a breakaway part of a state may seek self-determination; or former colonial states may have inherited historically unclear boundaries after independence.

Peaceful resolution of territorial disputes can arise through direct negotiation, such as the 1968 agreement between Iran and Saudi Arabia on the [Farsi and Al Arabiyah islands](#). Alternatively binding resolutions of an international body such as the International Court of Justice (ICJ) can be used to settle a dispute, as was the case in the [2013 ruling of the ICJ](#) between Burkina Faso and Niger where territory was exchanged.

However, such processes can take a significant amount of time to come to a resolution, and it is not uncommon for territorial disputes to remain ‘frozen’ for years or decades. Disputes escalating to armed conflict, or evolving into situations of continuous, low-level violence, can have very serious consequences for the populations of the contested areas, and set back attempts at finding a peaceful resolution.

Managing risks in territorial disputes includes finding approaches to reduce tensions, avoiding incidents caused by miscommunication, and building confidence among parties. Cooperative overhead monitoring arrangements could contribute to achieving these goals.

### The Open Skies model

The main point of reference for cooperative overhead monitoring is the [Open Skies Treaty](#) (OST), which has been in force since 2002. Under the auspices of the treaty, NATO and former Warsaw Pact states could operate observation flights over each other’s territories, using jointly crewed aircraft and treaty-limited and certified sensors. At its peak, the OST covered the whole area from ‘Vancouver to Vladivostok’, while today, even in the absence of Russia and the United States (which left the agreement in 2020 and 2021, respectively), the remaining member states continue to operate flights and develop and certify sensors.

The treaty – and the exacting specifications on the capabilities and limits of treaty-allowed sensors – is designed for State Parties to be able to identify and count military resources and equipment deployed. While not formally connected to the [Vienna Document](#) (a series of agreements on confidence and security-building measures between the states of Europe) and the [Conventional Forces in Europe Treaty](#) (which aimed at establishing a military balance between NATO and the Warsaw Pact, at a lower level of armaments), it offered a way to monitor compliance with these agreements, and was part of the broader architecture of conventional security and arms control in Europe.

The OST came into force in a period of good relations between NATO and Russia. However, increasing tensions between NATO and Russia in the last decade, initially led to short interruptions in ongoing OST flights and then US and Russian withdrawal. It should also be noted that the treaty was not specifically designed to work in the context of territorial disputes and prohibits overflights in the vicinity of non-State Parties. Hence, when disputes arose that saw OST State Parties disagree on territorial claims, it became impossible to operate OST flights over the disputed areas. This was the case with the disputed Georgian regions of South Ossetia and Abkhazia, and the Ukrainian territories of Donetsk and Luhansk, and also Crimea, post Russia’s de facto annexation.

Despite these difficulties, the OST solved a series of technical and political challenges concerning allocation of flights, image sharing, certification of technical systems and dispute resolution. It also demonstrated the value of cooperative aspects of monitoring which include a regular mechanism for senior members of opposing military forces to meet face-to-face.

### Challenges and opportunities for cooperative overhead monitoring in other regions

Cooperative overhead monitoring arrangements have been proposed for other regions, including the [Siachen Glacier](#) (disputed territory between China and India), to reduce tensions between [India and Pakistan](#), the [Sinai](#) and the [Korean Peninsula](#). Given that each dispute has its own specific challenges, this raises the question of what precise form the arrangement would take.

#### *The Guyana–Venezuela territorial dispute*

If exchange of territory is possible, then the dispute may be resolved peacefully. For disputes involving a one-sided claim for another state’s territory, however, such as the [Guyana–](#)



Venezuela territorial dispute over the Essequibo region, this may be more difficult. This dispute has reemerged with Venezuela's claim to the oil-rich province of Essequibo, which makes up approximately two thirds of Guyana's territory. Venezuela conducted a national referendum in 2023 affirming its claim to the region and rejecting previous international rulings, including the 1899 Paris Arbitral award, the 1966 Geneva agreement and former ICJ rulings. Venezuela and Guyana have since jointly committed, via the 2023 Argyle Declaration, not to resolve the dispute with the use of force. The claim is currently the subject of an ongoing ICJ process initiated by Guyana in 2018.

This case highlights the potential for cooperative monitoring to have different 'targets' depending on the context. Here, since natural resources play a prominent role in the dispute (largely in the form of oil reserves), a cooperative monitoring arrangement could be used not only to monitor military assets (as in the case of the OST), but also to detect unauthorised extraction and exploitation of natural resources.

The Essequibo dispute also poses the question of how cooperative monitoring arrangements could be integrated with other efforts to create stability, and, ultimately, achieve a peaceful resolution. While an ICJ ruling is pending, introducing a cooperative monitoring arrangement could ease tensions and build confidence. Even after an ICJ ruling is issued, cooperative monitoring could play a role in the region—although the value, goals and challenges of an overhead monitoring regime would likely be very different depending on how the parties to the dispute react to the ruling. In a scenario where both parties accept a ruling and start working together to implement it, cooperative monitoring can be a useful tool for voluntary transparency. In the less promising scenario where an ICJ ruling is rejected or contested by one or both parties, cooperative monitoring could still help bolster stability and forestall a violent escalation.

### *Western Sahara conflict*

The Western Sahara conflict—an ongoing conflict between the Sahrawi Arab Democratic Republic (SADR)/Polisario Front and Morocco—could also potentially benefit from cooperative monitoring. Since Moroccan occupation of Western Sahara following Spanish withdrawal in 1975, the Sahrawi have moved into refugee camps in Algeria by invitation from the Algerian Government. Morocco and Algeria have had a strained relationship since their 1963 'Sand War' following Algerian independence in 1962 and their border has been closed since

1994. The Sahrawi political organisation, the Polisario Front, are seeking to establish a state (SADR) in Western Sahara, which is roughly two thirds under Moroccan control and one third by the Sahrawi. The Berm, a militarized sand wall extending across the length of the territory, acts as a line of de-facto control between the two sides.

A 1975 ICJ ruling granted a right to self-determination for the Sahrawi and a United Nations Mission for a Referendum in Western Sahara (MUNURSO) was established in 1991 to prepare a referendum for this purpose. However, an ongoing dispute between the SADR and the Government of Morocco about who can participate has prevented the referendum from taking place. A 1991 ceasefire was broken in November 2020, one month prior to the then Trump administration acknowledging Moroccan claims to the Western Sahara. This was linked to Morocco normalising relations with Israel and the policy has not been altered by the Biden administration.

One issue raised by the Western Sahara case is how to implement cooperative monitoring among parties with little or no diplomatic relationships. Morocco does not recognise the SADR, and as such the two parties do not discuss or negotiate directly. As already noted, the relationship between Morocco and Algeria is also strained. Hence, establishing a direct bi- or multilateral initiative may be challenging.

The dispute over Western Sahara also highlights additional possible functions and challenges of a cooperative monitoring arrangement. The area around the Berm is heavily mined: cooperative overhead monitoring may play a role in assisting demining efforts by mapping and identifying landmines and minefields. A number of organisations have trialled novel techniques to support landmine mapping through overhead observation, including using uncrewed aerial vehicles (UAVs). Protecting the safety and neutrality of cooperative monitoring missions in an area where active military operations are taking place, including the use of aircraft and UAVs, is another challenge. If cooperative monitoring were to take place, clear deconfliction with aerial military operations—including intelligence, surveillance and reconnaissance (ISR) missions—would have to be defined, both to ensure the safety of crews and aircraft, and to avoid accusations that monitoring missions offer protection, advantages or opportunities to concurrent military operations.

### *Maritime disputes*

Territorial disputes may also take place in maritime environments. Here, identifying and protecting borders is made more

complicated by how these are drawn under the international Law of the Sea. In addition to the national borders of territorial waters, the Law of the Sea identifies an Exclusive Economic Zone (EEZ) which governs fishing and undersea mining rights. Moreover, in certain areas, these overlap with national Air Defence Identification Zones (ADIZs)—a region of airspace in which a state tries to unilaterally identify, locate and control aircraft in the interest of national security. Fishing and undersea mining in areas that are claimed by another country as part of their EEZ are clearly activities that could be monitored under a cooperative agreement. Moreover, the construction of settlements or docks on previously unused islands can impact territorial claims, and as such may also be of interest.

Many of these issues are exemplified by the dispute surrounding the Senkaku/Diaoyu/Tiaoyutai Islands. Japan is in possession of the islands and does not recognise claims by China or Taiwan. Moreover, overlapping ADIZs are not routinely respected by the three parties, and have evolved into a distinct dimension of the territorial dispute. Cooperative monitoring may be challenging, as even conducting monitoring may be seen politically as an acknowledgement of the disputed claims. However, from an implementation standpoint, there are clear benefits. Flights could be conducted in international waters with lateral observation into the island region and military-to-military contact could be in of itself an important confidence building measure.

## Conclusion

In some territorial disputes, there are functioning processes that are working to achieve a peaceful, mutually agreeable resolution. These often take a long time to come to fruition and are susceptible to being derailed by escalating tensions or other incidents. In other cases, it is not uncommon for disputes to remain frozen to a certain *de facto* situation, with the prospect of a settlement either looking unrealistic, or only being credible in the very long term. In both cases, there is a tangible risk of the dispute degenerating into armed conflict, or settling into a pattern of regular low-level violence.

Each dispute and territory presents unique operational demands and political challenges, and any cooperative monitoring regime would be tailored around those. However, there is a wealth of knowledge in the international system that can be built upon. The Open Skies Treaty, in particular, solved complex technical challenges and lessons learned in that context could be useful for application elsewhere. Cooperative overhead monitoring alone does not offer a silver bullet for

conflict resolution. However, it can act as a key confidence building mechanism, reducing tensions at points that could otherwise induce escalation and preventing some pathways to crises.

## Keeping an eye on discharges from Fukushima Daiichi

Hugh Chalmers

On 11 March 2011, a massive earthquake off the coast of Japan triggered a tsunami which struck the Fukushima Daiichi Nuclear Power Plant. The subsequent loss of external electrical power and coolant systems caused the reactor cores in units 1-3 to overheat, melting the fuel inside and creating an explosive build-up of hydrogen. Since the explosions, ground water and rainwater has been flowing through the damaged reactors cores—cooling the damaged fuel but picking up significant radioactive contamination in the process.

### Filtering out radionuclides from contaminated water

The Tokyo Electric Power Company (TEPCO, which operates the site) is collecting this water, and is using an Advanced Liquid Processing System (ALPS) to filter most radionuclides out of the water. But ALPS is not perfect: it cannot remove Tritium, which is an isotope of hydrogen that bonds with Oxygen and becomes chemically indistinguishable from water. Significant quantities of Tritium-contaminated ALPS-treated water are now being stored at the site, where TEPCO has built over 1,000 tanks (each capable of storing a million litres of water) to contain it. While TEPCO has taken measures to minimise the contamination of ground and rainwater, almost 90 m<sup>3</sup> of contaminated water is produced each day (enough to fill an Olympic swimming pool each month). Storing it indefinitely is unsustainable: empty tanks have shown signs of corrosion and safely maintaining them becomes harder as they accumulate. Instead of risking an uncontrolled discharge of the water, Japan is now diluting batches of the water more than 100 times (to minimise the density of radioactivity as much as possible) before discharging the water into the Pacific Ocean. Japan started these discharges in August 2023 and has since diluted and discharged roughly 55,000 m<sup>3</sup> of treated water in seven batches.

Tritium releases beta radiation as it decays to Helium, and if Tritium is ingested in sufficient quantities this radiation is harmful. Tritium does occur naturally and is commonly present

in humans in trace quantities alongside other radioactive materials, including Potassium-40 and Polonium-210. Japan's policy towards diluting and discharging ALPS-treated water aims to constrain the additional radioactive dose a person would receive if they ingested that water every day for a year to 0.05 milli-Sieverts in that year. This is equivalent to the approximate dose received during a transatlantic flight and represents less than 1/7<sup>th</sup> the maximum amount of Tritium in water that the World Health Organisation considers safe to drink. To enforce this constraint, Japan measures the radioactive content of the water before its dilution and discharge and monitors Tritium levels in surrounding fishing grounds, beaches and other areas.

### Regional opposition

However, when Japan announced this approach in April 2021 its neighbours were not convinced. Pacific Island States [noted this decision at the time](#) “with deep concern”, urgently calling on Japan to hold off on the discharges until they were satisfied that the potential harm to the Pacific had been addressed. They pointed to the South Pacific Nuclear-Free Zone, established by the [Treaty of Rarotonga](#), which reflected on the harms inflicted on the region by historic nuclear testing and bans the dumping of any radioactive wastes in the Treaty zone. China described the decision as “[extremely irresponsible](#)” and banned the import of Japanese seafood in response. South Korea expressed “[grave concerns](#)” and stressed that Japan “should disclose information with transparency and make decisions through consultations with neighbouring countries”.

### Building confidence with IAEA monitoring

Japan has turned to the International Atomic Energy Agency (IAEA) to send a message of transparency and confidence to the international community and assure its neighbours that its discharges of ALPS-treated water meet stringent safety standards. The IAEA convened an independent Task Force that included experts from regional states, including China, South Korea and the Marshall Islands. The IAEA spent almost two years reviewing Japan's plans against internationally recognised safety principles, observing how the government, regulators, and TEPCO would work together to control the discharges. They reviewed how Japan's nuclear safety regulator was engaging with international stakeholders to inform their approach. They also assessed Japan's approach to modelling the transboundary impacts of ALPS-treated water discharges.

In all cases the Task Force concluded in its [July 2023 report](#) that Japan's discharge approach “is consistent with the relevant international safety standards”.

To ensure Japan is properly implementing this approach, the IAEA has been collecting and reviewing samples of ALPS-treated water at the point of dilution, and from the surrounding environment to corroborate and confirm Japan's own analysis of the discharges. Their [first full review](#) of the discharge process in October 2023 confirmed that the levels of Tritium released into the surrounding waters are well below the level at which Japan might have to investigate, and even further below the level at which Japan should cease discharges. Nevertheless, the Task Force reiterated that Japan must continue optimising the safety of this ongoing process, and pressed Japan for better access to its monitoring data to improve the assurances the IAEA can provide.

### Sustaining confidence into the future

Chinese statements to the IAEA General Conference and its Board of Governors suggest that Beijing (perhaps in contrast to the independent Chinese expert on the IAEA Task Force) is still not convinced that the discharges are safe. The Chinese Government has strongly urged Japan to stop the discharges, accused Tokyo of ignoring the concerns of its neighbours, and implied that in co-opting the IAEA in its plans they have seriously damaged the credibility of the Agency. However, other neighbouring states do not appear to feel the same way. Shortly after the first full review of the discharge process last year, the Pacific Islands Forum [recalled](#) their concerns about the safety of the discharges and cautiously “acknowledged” the dialogue with the IAEA and Japan. New Zealand, Malaysia and South Korea have all expressed appreciation of the IAEA's efforts in reviewing and monitoring the discharges, and reiterated their expectation that these efforts will continue as long as necessary to keep future discharges safe.

Doing so will be a long-term undertaking for the IAEA, which has established a field office at the site from which to monitor discharges that could well take three decades to complete. In this time, it is still possible that Japan's control of the discharges may weaken or that Tritium might gradually accumulate to more worrying levels. These risks should remind everyone—including China—of the value of keeping an independent eye on the discharges.

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## Allegations of the use of riot control agents in Ukraine

Hailey Wingo

There have been multiple allegations of the use of riot control agents (RCAs) in Ukraine, principally to flush troops out of defensive positions, and the number of such reports has increased considerably in recent months. Verifying these claims will be complicated, yet the stakes for the chemical weapons disarmament regime are high, especially if the alleged perpetrators escape consequences.

RCAs are a group of chemicals which are used by law enforcement authorities to disperse crowds. Most RCAs are ‘tear gas’, which is not an individual chemical but instead a whole class of lacrimator—literally ‘tear-inducing’—agents that includes chloroacetophenone and chlorobenzylidenemalononitrile (more commonly known as CN and CS). Article I of the Chemical Weapons Convention (CWC) prohibits the use of RCAs as a method of warfare. However, it does not prohibit their production and use for domestic law enforcement purposes. Under [Article II, paragraph 7 of the Convention](#), the use of any scheduled chemicals as a riot control agent is contrary to the CWC. That same paragraph defines RCAs as “any chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling effects which disappear within a short time following termination of exposure”. While controversial, this allowance for the use of RCAs by law enforcement is due to such agents’ ability to clear large groups of people from an area by inducing temporary incapacitation. There are [several contentious past cases](#) of the use of RCAs by multiple CWC States Parties in situations where the lines between law enforcement and warfare are blurred. However, if RCAs are deployed to flush troops out of defensive positions and paired with a lethal artillery barrage, [it meets the definition of use for warfare](#). When troops are properly prepared and equipped, this strategy is less effective, as they know to stay put and use personal protective equipment rather than fleeing and facing enemy fire. However, [RCAs can be deadly](#) in high concentrations and contained spaces.

[Over 1,400 incidents](#) involving the alleged use of RCAs on the front lines in Ukraine have been reported since February 2022. The majority of these reported the use of CN and CS, although some alleged chloropicrin attacks. Chloropicrin has only occasionally been used as an RCA. It was first introduced as a warfare agent during World War I and is listed as a Schedule 3 chemical, since it has legitimate use as a pesticide.

As chloropicrin is a scheduled chemical, it cannot be used as an RCA in accordance with the CWC.

On 1 May 2024, [the US Department of State officially sanctioned](#) three Russian government entities and four associated companies for the use of chloropicrin and RCAs for warfare in Ukraine. The following day, [Ukraine welcomed](#) this formal US recognition of the allegations. [Russia has denied the allegations](#) and accused Ukraine of both false flag and real attacks using RCAs and chloropicrin. [The OPCW stated on 7 May](#) that thus far, the information submitted to the organisation by both sides had been “insufficiently substantiated” and went on to reaffirm its commitment to providing technical assistance and support when requested.

### Verifying the allegations

So how might a verification body sufficiently substantiate or disprove these claims? A visit by inspectors from the Organisation for the Prohibition of Chemical Weapons (OPCW) Technical Secretariat is the most obvious route, although there are other bodies who could also field an investigation. The UN Secretary-General’s Mechanism (UNSGM) was used to deploy a team to Syria to investigate the use of chemical weapons in violation of the Geneva Convention before that country was party to the CWC. The UNSGM can be requested by any UN Member State, at which point it is up to the Secretary-General to decide whether to field an investigation based on the information provided. The Organization for Security and Co-operation in Europe deployed a special monitoring mission in Ukraine from 2014 until 2022 and tasked it with monitoring adherence to the Minsk Agreement, while the United Nations High Commissioner for Human Rights has fielded missions to monitor violations of human rights. While neither of these latter two have specialised experience with chemical weapons investigations, if the necessary bilateral agreements are in place between the requesting state and the respective organisation, they could second inspectors with relevant expertise from other organisations such as the OPCW.

Nonetheless, verification of these allegations by the OPCW remains the most likely and sensible route due to organisational mandate and capacity. Following a [June 2018 decision](#) by the OPCW Conference of States Parties, the [Director-General of the OPCW Technical Secretariat is authorised](#) to provide technical expertise to identify the perpetrators of chemical weapons use, if requested by the State Party on whose territory the chemical weapons use has occurred and if the alleged use of chemical weapons has been verified. This

2018 decision was used to establish the Identification and Investigation Team (IIT); it is highly controversial, having been decided by vote rather than consensus, and has been rejected by several Member States. The IIT has been *de facto* considered a Syria-specific investigatory mechanism since its funding is derived from Member States' voluntary contributions to the trust fund for Syria, so extending the IIT's mandate to Ukraine may encounter significant resistance from States Parties. Further, it is possible invoking this mandate may lead Russia to accuse the Director-General of making a political judgement on whether the territory belongs to Russia or Ukraine. Alternatively, the OPCW could provide a technical assistance visit under [Article VIII, paragraph 38](#) or field an investigation of alleged use under [Part XI of the Verification Annex](#).

### Challenges for a potential OPCW investigation

An OPCW technical assistance visit to Ukraine may take place soon. On 24 April, the Ukrainian parliament ratified an agreement which will facilitate Ukrainian cooperation with inspectors from the OPCW Technical Secretariat. These visits are unlikely to consist of a full field investigation, which would be complicated by the security situation in Ukraine. Instead, the OPCW may focus on contributions of detection equipment and training under Article X, and the analysis of samples collected from the front lines by Ukrainian troops. Thus, in scope it could resemble similar technical assistance visits [to the UK and Germany](#) after suspected use of Novichok nerve agents on both countries' territory—although these visits were not mandated to provide attribution, which hampered further action by the Executive Council on the basis of the visits' findings.

Most dispersed RCAs are difficult to rapidly identify in environmental samples. CN and most types of CS are [non-persistent](#), which means they will quickly degrade in the environment. This property is well-suited to their use as RCAs, since areas where they are deployed do not require decontamination afterwards. However, this property also complicates the collection and analysis of samples. It is much easier to collect samples from depleted canisters, and a variety of analytical techniques can be used for this purpose. However, if dispersal devices cannot be found, RCAs may also be rapidly identified on fabric samples for up to a few weeks after exposure, using a specialised mass spectrometry technique called [DART-MS](#). In order to identify sites for sample collection, OPCW inspectors may interview troops who display or report [symptoms consistent with RCA exposure](#) to collect

fabric samples or establish areas where the agents may have been dispersed.

Chloropicrin also has [relatively low environmental persistence](#). The former Soviet Union used RCAs to suppress protests in Tbilisi in 1989, but after victims presented with skin and mucosal blisters, bronchoconstriction, pulmonary oedema and vomiting, [inspectors from Physicians for Human Rights began to suspect the use of chloropicrin mixed with CN](#). In addition to the victims' symptoms and testimony, hand-held spray canisters were found at the protest scene. When their contents were analysed, mass spectrometry analysis supported the presence of chloropicrin; the symptoms alone would not have been sufficient, as victims exposed to high concentrations of CN or CS gas, [especially at high temperatures](#), might present similarly. A Georgian commission later identified two Soviet generals as criminally responsible.

### The complexity of attribution

However, even if sample analysis verifies the presence of RCAs in battlefield samples from Ukraine, it cannot attribute use. [Russia has identified a mixture of chloropicrin and CN in ammunition](#) dropped from UAVs in its own analysis conducted at the 27<sup>th</sup> Scientific Centre of the Russian Ministry of Defence, and claims Ukrainian troops are using RCAs in both false flag attacks and against Russian positions. If granted a mandate for attribution, an inspection team would need to extensively corroborate witness accounts from both sides of the alleged attacks. Doing so is immensely complicated by the nature of the conflict. Almost all witnesses are sure to be combatants; the only likely third-party observers would be the inspectors themselves, who would need to deploy to active combat areas and actively put themselves in harms way.

As the only attribution mechanism within the OPCW thus far, the IIT was able to attribute the use of chemical weapons in Syria many years after the incidents by analysing photos and measurements of the munitions, including their angle of impact. However, in that case, there was a clear difference in the capabilities of each side, and the munitions were much larger. For example, in one case it was assessed that the munition must have been dropped by a military combat aircraft (rather than launched from the ground) and only the Syrian military had such aircraft. In Ukraine however, many of the munitions are much smaller—canisters dropped from UAVs or delivered via grenade launcher—and both sides have access to or could develop these delivery systems.

Given the complexity of attribution, and the fact that the United States has already unilaterally attributed such attacks to Russia and imposed sanctions, verifying these alleged violations of the CWC may seem like an unproductive exercise. Some experts have suggested that extensive battlefield use of RCAs may be intended to trigger escalation to the use of Schedule 1 and 2 chemical weapons. Others add that it may be a test of how much the international community is willing to overlook, and thus political condemnation would be a sufficient response. Nonetheless, in an environment where compliance with international arms control treaties seems to be deteriorating daily, verifying use, identifying the perpetrators and imposing legal consequences are all high-stakes actions that could help to prevent further erosion of hard-fought international norms.

## The idea of a UN-led Verification Study Group gains momentum

Noel Stott

Following the 2023 First Committee statement by 39 UN Member States, who supported the idea of establishing a Group of Scientific and Technical Experts (GSTE) on nuclear disarmament verification (NDV), Brazil and Norway are set to spearhead a new resolution at the 2024 First Committee to take the idea forward. This also follows the in-depth discussions held during the two Group of Governmental Experts (GGE) established under UN General Assembly Resolution 71/67 of 5 December 2016 and Resolution 74/50 of December 2019.

Following consultation in Geneva and Vienna earlier this year, it is likely that the new resolution will call on the UN Secretary-General to elicit the views of Member States on the establishment of a GSTE within the United Nations, taking into account the reports of the GGEs referred to above. It will further call on the Secretary-General to consider the views of relevant intergovernmental organisations entrusted with the verification of other disarmament and non-proliferation treaties, such as the International Atomic Energy Agency, the Organisation for the Prohibition of Chemical Weapons and the Comprehensive Nuclear-Test-Ban Treaty Organization. A couple of in-person meetings with Member States at the UN's offices in New York and Geneva to debate the issue are also envisaged to be held prior to the 80th session of the General Assembly in September 2025.

The idea to establish a GSTE within the UN family is not new. As far back as 2017, VERTIC published a report of

a series of consultations it held with stakeholders in Africa, Asia, Europe and Latin America. These consultations aimed to explore if further measures could be taken to enhance international cooperation on NDV. The consultations discussed a hypothetical proposal, namely, the establishment of a multi-lateral Group of Scientific Experts to build on the embryonic network of international expertise on NDV that currently exists through a sustainable and inclusive programme of work. Participants in the VERTIC consultations concluded that such a group would:

- Increase the international knowledge base of verification options;
- Enable all states to actively collaborate in developing practical methods that would contribute to the verification of irreversible dismantlement of nuclear weapons, related (including fissile) material and associated facilities;
- Provide a platform for long-term sustainability, capacity-building and consolidation of expertise;
- Foster a sense of ownership and legitimacy, as all UN Member States would be provided with the opportunity to participate in ways that take advantage of their existing and potential national expertise and which could also take into account regional contexts;
- Be perceived as apolitical; and
- Support sustained dialogue between technical experts, diplomats and policymakers within and between the nuclear- and non-nuclear armed states in the quest for agreed verification measures.

It was felt that such a group could develop, in a more systematic manner, capabilities that would ultimately facilitate agreement on difficult technical issues before political negotiations on multilateral nuclear disarmament are undertaken, or indeed without a commitment to commence such negotiations. Multilateral work on the necessary tools needed for nuclear disarmament verification NDV can thus provide practical benefits in support of the long-term goal of nuclear disarmament. As stated in a recent Concept Note presented by Marcelo Câmara, Head of the Division of Disarmament and Sensitive Technologies at the Brazilian Ministry of Foreign Affairs, to an informal meeting in Geneva co-hosted by Norway and Brazil on the 4 June 2024, “future nuclear disarmament arrangements will need to be underpinned by effective verification to ensure its long-term sustainability, both in reaching and then maintaining a world free of nuclear weapons”.

Establishing a GSTE would not only build on the work of the GGEs referred to above, but also take forward the ideas expressed in various UN fora, including Review Conferences of the Non-Proliferation Treaty, the Final Document of the Tenth Special Session of the General Assembly in 1978, the Panel of Governmental Experts on verification in all its aspects, including the role of the United Nations in the field of verification (UN document A/45/372, 28 August 1990), and the work of the Disarmament Commission outlining the general principles of verification (verifiability, transparency and irreversibility).

According to Brazil ([NDV – GSTE statement](#), 16 October 2023), the mandate for a GSTE could be to:

- Appraise knowledge on NDV, derived from past and ongoing initiatives on NDV or related areas;
  - Consider technical challenges in NDV in terms of tools, techniques, processes and procedures;
  - Enable States to participate in technical NDV discussions on a voluntary basis; and
- Incorporate and preserve knowledge on NDV within the UN system and provide assurance to the international community that states are focused on this matter.

However, there are at least three important issues for UN Member States to consider. The first is the group's modalities, that is, under whose mandate should it fall, how long should its lifespan be, and, whether its members should include all states—nuclear-weapon states, non-nuclear-weapon states and states not party to the NPT. Second, how might the work of the many NGOs, academic organisations and other scientific institutions that on a day to day basis grapple with both the conceptual and practical challenges of NDV, be incorporated into the group's activities. And thirdly, how might such a group support and grow disarmament verification relevant capabilities in all UN Member States to enable widespread participation in multilateral NDV when that times comes.

## Implementation Watch

### National measures to address the CBRN risks from Artificial Intelligence: developments in the United States and general outlook

Thomas Brown

Artificial Intelligence (AI) and other disruptive technologies are driving a Fourth Industrial Revolution. Despite the clear benefits to humankind, experts are increasingly raising concerns about the ways in which AI technologies could increase malicious use of Chemical, Biological, Radiological and Nuclear (CBRN) materials or weapons. In particular there are fears that AI tools could lower the barriers for nefarious actors to develop, acquire or use CBRN weapons, for example, through the use of such technologies for the design of new biochemical weapons.

The international legal regime controlling CBRN materials does not explicitly regulate AI technologies, raising questions as to its efficacy to respond to new tools. (See similar concerns in relation to developments in the chemical and life sciences, notably with regard to toxin and bioregulator research, in [Trust & Verify 172](#)). National legal measures play a key role in supporting states to implement CBRN interna-

tional legal instruments, such as the Non-Proliferation Treaty, Biological Weapons Convention, Chemical Weapons Convention and UN Security Council Resolution 1540, and to reduce national threats related to CBRN materials. In the absence of specific international legal regulation on AI, some national lawmakers are developing legal frameworks to counter the CBRN threats raised by AI technologies.

The United States has been at the forefront of efforts to mitigate the CBRN threats from AI. US President Joe Biden on 30 October 2023 signed [Executive Order \(E.O.\) 14110 on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence](#), a landmark document outlining measures to be taken across government to ensure AI safety and security. The Order includes a specific Section 4.4 on 'Reducing Risks at the Intersection of AI and CBRN Threats', which outlines measures, "to better understand and mitigate the risk of AI being misused to assist in the development or use of CBRN threats – with a particular focus on biological weapons". Since October 2023, US government agencies have undertaken a plethora of actions to implement the Executive Order, including the creation of the Department of Homeland Security [Artificial Intelligence Safety and Security Board](#), the development

of a [Framework on Nucleic Acid Synthesis Screening](#) and the release of an [AI CBRN Report](#) outlining trends and threats. Implementation of the Executive Order and related initiatives is ongoing and will help to shape the AI governance landscape in the United States.

In recent years US lawmakers have also attempted to create specific laws limiting the involvement of AI in nuclear weapons systems. For example, a bill was introduced in 2023 to create a [Block Nuclear Launch by Autonomous Artificial Intelligence Act 2023](#), to guard against the use of AI in nuclear weapons decision making. This bipartisan bill aimed to codify the policy, outlined in the US Department of Defence's 2022 [Nuclear Posture Review](#), that a human should be in the loop for all actions critical to informing and executing decisions by the President to initiate and terminate nuclear weapon use. To do so, it proposed a prohibition on the use of federal funds for any launch of any nuclear weapon by an automated system without meaningful human control. While the proposed bill did not become law, in 2024 the policy on AI in nuclear decision systems outlined in the 2022 Nuclear Posture Review was explicitly incorporated into Section 1627 of the [Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025](#). This Act was passed by the US House of Representatives on 14 June 2024 and is due to be considered by the US Senate later in the year. Should it become law, it will legally enshrine the policy that a human must be in the loop for all nuclear weapon launch decisions.

Finally, it is important to highlight legislative action in this area at the US state level. In California, the State Senate passed the [Safe and Secure Innovation for Frontier Artificial Intelligence Models Act](#) in May 2024. The Act, due to be voted on at the California State Assembly later in the year, provides that the creators of AI models are to be held accountable for providing reasonable assurances that their models do not have hazardous capabilities or that such capabilities are sufficiently mitigated against. The definition in the Act of a 'Hazardous Capability' includes the "creation or use of a chemical, biological, radiological, or nuclear weapon in a manner that results in mass casualties". Due to the prominence of the State of California in global AI model development, the proposed Act could have a significant impact on the governance of AI to mitigate CBRN risks.

Despite the regulatory efforts of US national and state level lawmakers, it is evident that significant work remains to be done to ensure that AI technology does not contribute

to new CBRN threats. Notably, the Department of Homeland Security AI CBRN Report 2024 highlighted that:

*Known limitations in existing U.S. biological and chemical security regulations and enforcement, when combined with the increased use of AI tools, could increase the likelihood of both intentional and unintentional dangerous research outcomes that pose a risk to public health, economic security, or national security.*

Against this background, it is likely that the US and other states will continue or consider taking steps to ensure that their national legal framework implementing international CBRN instruments is sufficient to respond to the challenges raised by AI models. To guide states in these efforts, formal expert assessments of the impact of such technologies on the respective treaties are required, including the implications for related national implementation measures. States may also wish to analyse existing legal measures relevant for the control of CBRN materials when considering governance frameworks for AI tools.

## Yakuza leader indicted for alleged smuggling of nuclear materials, including weaponizable plutonium

Alix Renaudin

### Background

On 21 February 2024, the Southern District Court of New York (United States), released a [superseding indictment](#) involving Takeshi Ebisawa, a leader of the *Yakuza*, the transnational Japanese criminal network, for eight criminal counts, including "Conspiracy to Commit International Trafficking of Nuclear Materials".

The 60-year-old Japanese national is accused of conspiring to sell weaponizable nuclear materials from a territory controlled by Burmese insurgents in Myanmar. In essence, Ebisawa was ready to sell more than 2 tons of Thorium-232 and more than 100 kilograms of Uranium Oxide (U<sub>3</sub>O<sub>8</sub>) (commonly known as yellowcake).

The nuclear samples presented to a US undercover Drug Enforcement Administration officer were seized by the law enforcement authorities of Thailand and transferred to the United States. The defendant faces a penalty of between 25 years to life imprisonment.



Since 1993, the International Atomic Energy Agency (IAEA) has [reported](#) 4,243 confirmed incidents involving nuclear and other radioactive material out of regulatory control, including 350 incidents that are, or are likely connected with trafficking or malicious use, some of which involve high-enriched uranium, plutonium and plutonium-beryllium neutron sources. Although the global trend of reported incidents indicates a decline in such incidents, the IAEA Incident and Trafficking Database (ITDB) Report noted an increase of reported incidents in 2023 involving the theft of materials.

### **The international framework for nuclear security and nuclear non-proliferation**

Various international instruments provide for the security of nuclear and other radioactive materials and prohibit malicious acts involving such materials. The Convention on the Physical Protection of Nuclear Material (CPPNM) adopted in 1979, as amended in 2005, specifically addresses illicit trafficking of nuclear materials, by prohibiting the “carrying, sending, or moving of nuclear material into or out of a State without lawful authority” (Article 7(1)(d)). In turn, the 2005 International Convention for the Suppression of Acts of Nuclear Terrorism is also relevant, with Article 2.1 prohibiting the possession of radioactive materials with the intent to cause death, serious bodily injury, substantial damage to property or the environment.

In addition, the Beijing 2010 Convention on the Suppression of Unlawful Acts Relating to International Aviation and the 1998 Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation and its 2005 Protocol prohibit certain acts involving nuclear material. Furthermore, IAEA guidance provides recommendations for the security of nuclear and other radioactive material and associated facilities.

As the cornerstone of nuclear non-proliferation efforts, the Treaty on the Non-Proliferation of Nuclear Weapons establishes related obligations and provides for the conclusion of safeguards agreements with the IAEA to verify that nuclear material is not diverted from peaceful uses to nuclear weapons.

Addressing both nuclear security and non-proliferation, UN Security Council Resolution 1540 (2004), adopted under Chapter VII of the UN Charter, prescribes several measures to prevent and tackle the illicit trafficking of nuclear materials (along with biological and chemical materials). Those measures include adopting national laws to prohibit non-state actors

from manufacturing, acquiring, possessing, developing, transporting, transferring or using nuclear weapons as well as establishing domestic controls over such materials (including control lists).

The various nuclear security and non-proliferation instruments are complementary: they all contribute to tackling the proliferation of nuclear weapons and to protecting nuclear materials that may be used for the development of such weapons by non-state actors. The indictment of Ebisawa shows the importance and continued relevance of these global efforts against nuclear trafficking and proliferation. However, these efforts need to be supported by effective and efficient national implementation of the international framework.

### **National implementation implications**

Three key aspects need to be considered when looking at national implementation measures for nuclear security instruments: measures to prohibit malicious acts involving nuclear material so that offenders may be swiftly prosecuted; measures to protect the material in the first place, to avoid it being stolen or otherwise acquired by malevolent actors; and measures to enable international cooperation, so that trafficked materials may be detected and secured and investigations may be conducted across borders.

The Ebisawa case illustrates the importance of these measures. First, the legal basis of Ebisawa’s nuclear smuggling indictment is Section 831 of Title 18 of the United States Code which punishes the intentional carriage, moving, and sending of nuclear material into or out of a country without lawful authority, a provision created by a law of 1982 implementing the CPPNM, as amended in 2015. Second, gaps or failings in national physical protection measures likely led to the defendant gaining access to the material. Third, given that the case involved a leader of a transnational crime organisation, international cooperation with law enforcement agencies of other countries is paramount for the investigation.

The establishment of an adequate national nuclear security framework implementing international obligations is therefore fundamental to limit and suppress the occurrence of incidents such as the trafficking of nuclear material.

## Amendments to the International Health Regulations: building momentum to enhance national implementation

Eliza Walsh

On 1 June 2024, after two years of lengthy deliberations and negotiations, States Parties at the 77<sup>th</sup> session of the World Health Assembly agreed to several amendments to the International Health Regulations (IHR).

The IHR, an international legal instrument binding on all World Health Organisation (WHO) member states, seek to prevent, protect against, control and provide a public health response to the international spread of disease. After the WHO was founded in 1948 member states put in place the 1951 International Sanitary Regulations to regulate and control infectious diseases, which subsequently became known as the IHR. After a series of revisions in subsequent years to bring the regulations into line with modern realities of infectious diseases, WHO member states agreed on the present structure and content of the IHR at the 58<sup>th</sup> session of the World Health Assembly in 2005.

In the context of disarmament and non-proliferation, the IHR are especially relevant with regards to the Biological Weapons Convention (BWC). While the IHR seeks to prevent, protect against, control and respond to the international spread of disease, the BWC aims to effectively prohibit the development, production, acquisition, transfer, stockpiling and use of biological and toxin weapons, that is, weapons disseminating disease-causing organisms or toxins. National implementation of the IHR is key to addressing the risks posed by disease outbreaks, whether of natural, accidental or deliberate origin, including those arising from potential bioterrorist activity. Accordingly, there are synergies and complementarities between IHR and BWC implementation.

Implementation of the IHR calls for countries to develop and strengthen specific national public health capacities; identify priority areas for action; develop national IHR implementation plans; and maintain these capacities and continue to build and strengthen them as needed over time. However, many member states have been slow to implement these requirements. Although the IHR obliges States Parties to develop core capacities to prepare for health emergencies, in 2019 it was noted, based on self-assessments by states and additional information from the WHO, that approximately two-thirds of them had failed to implement relevant measures and therefore only had low or moderate levels of national preparedness. Hence,

during the Covid-19 pandemic, IHR implementation proved to be inadequate. Indeed, the Report of the Review Committee on the Functioning of the International Health Regulations (2005) during the Covid-19 response concluded that none of the elements of the IHR proved sufficient. The Committee concluded that “national capacity to prevent, detect and respond to public health risks is weak”.

The Covid-19 pandemic exposed the weaknesses associated with the lack of implementation of the IHR, and thus, in an attempt to ensure that there are comprehensive and robust systems in place to protect the health and safety of all people everywhere from the risk of future pandemics, States Parties set out to negotiate and agree a set of amendments to the IHR. This goal was achieved on the final day of the 77<sup>th</sup> session of the World Health Assembly, when several amendments were agreed. States Parties have 10 months to opt out of these amendments, should they choose to do so. The amendments included: the introduction of a definition of a pandemic emergency; a commitment to solidarity and equity including establishing a Coordinating Financial Mechanism to support activities required to “equitably address the needs and priorities of developing countries” and other pandemic emergency prevention, preparedness and response-related capacities; establishment of the States Parties Committee to facilitate the effective implementation of the amended IHR; and the creation of national IHR authorities. The last two amendments are particularly relevant to national implementation, and States Parties will need to harness the full potential of both mechanisms in support of effective national systems to prevent, prepare for and respond to any potential future pandemics or public health emergencies.

The adoption of these amendments, as well as the ongoing discussions about a potential pandemic treaty, clearly indicate a desire on the part of the international community to improve the current systems in place. With the health and economic consequences of the Covid-19 pandemic still fresh in the minds of everyone affected, the time seems right for states to take action to enhance implementation of the IHR and build upon the momentum achieved with the adoption of these amendments. The WHO and other assistance providers will also need to double efforts to support states in these endeavours. As noted by Dr Tedros Adhanom Ghebreyesus, WHO Director-General, this is a “historic opportunity to protect future generations from the impact of epidemics and pandemics, with a commitment to equity and solidarity”.

## Compliance Watch

### The expiration of the UN Security Council 1718 Committee Panel of Experts: implications for maritime sanctions monitoring, implementation and enforcement

Roel Walravens

On 28 March 2024, the United Nations Security Council (UNSC) failed to extend the mandate of the 1718 Committee Panel of Experts following a Russian veto of the resolution seeking its renewal. The Panel of Experts was first established in 2009 and was authorised by successive UNSC resolutions to gather, examine and analyse information from states, relevant UN bodies and other interested parties on the implementation of UNSC [sanctions](#) measures relating to North Korea. The Panel of Experts was also tasked with providing recommendations on actions that the UNSC, the 1718 Committee or UN member states may have considered adopting to improve implementation of the sanctions measures. These were published on a biannual basis in a midterm and final report to the 1718 Committee and UNSC. These reports provided valuable information detailing the sanctions evasion activities undertaken by North Korea and its network of facilitators, including in the maritime domain, to which each Panel of Experts report usually dedicated a section.

Each report shed further light on the increasingly complex nature of maritime evasion tactics, from the simple disguise and reconfiguration of vessels to highly sophisticated automatic identification system manipulation, location tampering and vessel laundering and flag-hopping schemes. In their final [report published on 7 March 2024](#), the Panel of Experts comprehensively summarised the primary maritime sanctions evasion methods they had identified and analysed over the years.

The Panel of Experts played an equally important role in the identification and investigation of specific vessels involved in evading the sanctions measures, as well as their (often opaque) ownership and management structures, registration histories, and supporting networks. The investigations of the Panel of Experts assisted the 1718 Committee in deciding which [vessels](#) to designate until the last such designation was made

in 2018. When the 1718 Committee itself became deadlocked after 2018, the Panel of Experts reports became an indispensable tool for publishing credible information on ships suspected of being engaged in sanctions-evading activity despite the lack of new designations.

The UNSC's failure to renew the mandate of the Panel of Experts and the corresponding lack of newly published reports will also have significant implications for implementation and enforcement of maritime sanctions provisions at the national level. The Panel of Experts provided authoritative guidance to legislatures and national maritime agencies, both in their reports and at the specific request of interested states. This guidance helped to inform the development of national laws, regulations and standard operating procedures on such issues as the identification of maritime sanctions evasion and the enforcement of maritime sanctions. The Panel of Experts reports also provided a credible source of information to national law enforcement agencies for the opening of formal investigations into sanctions evasion activities and their prosecution, both in the maritime domain and [beyond](#).

The demise of the 1718 Committee Panel of Experts ends nearly 15 years of work supporting the monitoring, implementation and enforcement of the sanctions regime imposed against North Korea by the UNSC. While the sanctions measures themselves remain in place, the lack of an authoritative and independent body capable of gathering, examining and analysing information relating to their implementation leaves the measures themselves in a more precarious position.

### Further confidence-building measures warranted for submarine cable security

Roel Walravens

Submarine fibre optic cables form the foundation of international digital connectivity and communication. The individual cables, which make up a wider network of more than [400 cables worldwide](#), are laid on the ocean floor and can span thousands of kilometres in length, reaching depths of up to 8,000 metres. These cables vary in diameter from one centimetre to about 20 centimetres depending on their depth. Cables closer to shore and activities such as fishing and shipping are

thicker, and sometimes buried one to two metres under the seabed. Submarine cables can carry more data, at a faster rate and at significantly lower cost, than alternative technologies such as satellites, which are often misconceived as being the primary means of transmitting data around the world. Cables such as the Transatlantic [MAREA cable](#) can carry up to 200 terabits of data per second. Each submarine cable will also have at least two “landing stations” which, [among other functions](#), terminate an international cable, provide power to the cable, and provide a location for domestic or international interconnection.

The classification of submarine fibre optic cables as critical infrastructure cannot be understated. The 2015 Oceans and Law of the Sea [Report](#) of the United Nations Secretary-General highlighted that over 98 per cent of international internet, data and telephone traffic is routed via submarine cables, including the many daily financial transactions which drive the global economy, as well as inter-state diplomatic communications. The same report notes that submarine cables are “a fundamental component of the critical global infrastructure and play a direct role in sustainable industrialization; indirectly they contribute to all other areas recognized as important for sustainable development”. Beyond their civilian use, submarine cables are used by states in the coordination of military operations and intelligence gathering and can therefore also be classified as dual-use objects.

The importance of submarine cables has led to concerns about their resilience and security. Submarine cables can be damaged or ruptured by natural causes (such as seismic activity, corrosion or weather-related currents), unintentional human causes (commercial maritime activity including shipping and fishing, which make up most yearly incidents) and intentional sabotage (in ‘grey zone’ or hybrid warfare and terrorist attacks). Concerns over grey zone and hybrid warfare against submarine cables were compounded following the suspected sabotage of the Nord Stream and Balticconnector gas pipelines in 2022 and 2023, respectively.

Whenever submarine cables are damaged, regardless of the cause of the damage, a two-stage restoration process takes place. In the first stage, data traffic is reinstated by the automatic and near-instantaneous re-routing of data from the damaged cable to other cables. In the second, the physical repair of the damaged cable is undertaken, which is a complex and costly process taking place over days or weeks by one or more of the [60 specialised vessels](#) worldwide capable of laying and repairing such cables. While accidental damage is almost

exclusively caused to the cables themselves, intentional damage and attacks can be undertaken against both the cables, as well as the overarching infrastructure essential to their operation and repair, including cable landing stations and repair vessels. Intentional damage to submarine cables and their infrastructure can be inflicted physically, but also digitally through cyberattacks.

### Improving resilience and security

Concerns over intentional attacks have led certain states to explore possibilities to increase and improve the resilience and security of submarine cables and their supporting infrastructure. Such efforts have primarily consisted of unilateral action undertaken by states and blocs of states (the European Union and the North Atlantic Treaty Organisation, NATO). In 2021, for instance, the United States established a [Cable Security Fleet](#) consisting of two active, commercially viable vessels capable of installing, maintaining and repairing submarine cables. The cable vessels, for which the US Government concluded an operating agreement, are [privately owned](#) and US-documented, and are intended to increase resilience by providing submarine cable laying and repair services to support US national security. France is also taking unilateral action to increase submarine cable security by incorporating the protection of underwater infrastructure (including submarine communication cables) in its 2022 [Seabed Warfare Strategy](#) and by [investing](#) in technologies like uncrewed underwater vehicles to monitor and protect such infrastructure.

Further action has also taken place collectively through the UK-led Joint Expeditionary Force ([JEF](#)) and NATO. Following the Balticconnector gas pipeline incident, in November 2023, the ten states of the JEF [undertook](#) joint deterrent and surveillance patrols in areas with vulnerable submarine critical infrastructure. NATO in particular has expressed [concern](#) over intentional attacks and sabotage against submarine cables, leading to the [creation](#) in February 2023 of an alliance-wide Critical Undersea Infrastructure Coordination Cell to facilitate engagement with industry, share best practices, enhance information sharing and leverage innovative technologies. In September 2023, NATO states also [established](#) the Maritime Centre for Security of Critical Undersea Infrastructure within the Allied Maritime Command (MARCOM) to further strengthen collaboration around the safeguarding and resilience of critical submarine infrastructure, including submarine cables.

## Addressing the multilateral gap

While there has been a significant proliferation in recent years of new unilateral and alliance-specific efforts to increase and improve submarine cable security and resilience, especially from intentional attacks and sabotage, there has been a distinct lack of new measures to this effect in multilateral settings. The lack of new multilateral initiatives relating to submarine cable security and resilience may have a compounding effect, leading to further mistrust on this issue between rival states. While unilateral action in ensuring submarine cable security and resilience is essential, it is also worth exploring complementary multilateral avenues.

A starting point could involve encouraging more states and commercial actors to join the existing [International](#)

[Cable Protection Committee \(ICPC\)](#), which was founded in 1958. The ICPC's membership comprises not only the relevant government administrations, but also commercial companies, including those that manufacture, own or operate submarine cables and systems, as well as cable ship operators. Increasing membership and representation at the ICPC may improve trust between rival states by providing more avenues for discussion of issues related to submarine cable security and resilience. Moreover, the scope of the ICPC, which currently focuses on the security and resilience of submarine cables from damage by natural causes and unintentional human activity, could be broadened to include discussions on intentional damage and sabotage, given the organisation's natural primary role in facilitating such discussions.

## Centre News

### National Implementation Measures

Yasemin Balci, Fanny Tonos, Thomas Brown, Eliza Walsh and Alix Renaudin

Since the last edition of *Trust & Verify*, the National Implementation Measures (NIM) team has continued to work across several projects to support the national implementation of international instruments focusing on chemical, biological, nuclear and radiological (CBRN) weapons and the security of related materials.

#### Activities

##### *BWC National Implementation Measures Database*

Together with the United Nations Institute for Disarmament Research (UNIDIR), the team has continued working on the Biological Weapons Convention (BWC) National Implementation Measures Database launched on 15 August 2023 under a project funded by the US Department of State. Work continues to complete country profiles for all 185 States Parties to the BWC.

##### *Pilot Project on BWC Legislative Drafting Training*

In February 2024, NIM and partner CRDF Global started implementing a pilot project for the development and conduct of a training workshop on legislative drafting for BWC implementation. The project is funded by the US Department of State through the Office of the Nonproliferation and

disarmament Fund (NDF), in coordination with the Office of the Biological Policy Staff (ISN/BPS). The training workshop is planned to take place in Bangkok, Thailand, in October 2024.

##### *Supporting the legislative implementation and universalisation of the BWC, CWC and related international instruments*

In March 2024, the team completed the implementation of a project funded by the Counter Proliferation and Arms Control Centre of the UK Foreign, Commonwealth and Development Office (FCDO). This project had several components, including awareness raising, legislative analysis, legislative drafting and universalisation support. The team also finalized updates to the webpage which addresses misconceptions related to the BWC and Chemical Weapons Convention (CWC).

##### *EU CBRN Centres of Excellence (CoE) Project 81*

The team has continued to implement EU CBRN CoE Project 81 on 'Enhanced Biosecurity in South East Asia'. We worked on reviewing partner countries' biosecurity legislation and developing related guidance under Work Package 2 of the project. The team also took part in preparations for a Regional Conference under the project to be conducted in Bangkok, Thailand, on 2–5 July 2024.



Workshop on Strengthening Export and Border Controls in Botswana in Compliance with Resolution 1540, UNODA.

### *National Workshop on Export and Border Controls in Botswana*

Following an invitation from the UN Office of Disarmament Affairs (UNODA), Senior Legal Officer Thomas Brown participated in a National Workshop on Border and Export Controls held in Gaborone, Botswana on 21–23 May 2024. The event was coordinated by UNODA, Stimson Centre and the Chemical, Biological, Nuclear and Radiological Weapons Management Authority of Botswana (CBNRWMA). During the workshop, VERTIC delivered a presentation on legal and regulatory aspects of UN Security Council Resolution 1540 implementation and contributed to related discussions.

### **Other NIM news**

Senior Legal Officer Thomas Brown represented VERTIC at the 1<sup>st</sup> meeting of the Global Partnership against the Spread of Weapons and Materials of Mass Destruction under the Italian Presidency, which was held in Rome on 7–9 February 2024. Co-Programme Director Fanny Tonos participated in the Conference ‘Humanity at the Crossroads: Autonomous Weapons Systems and the Challenge of Regulation’ held on 29–30 April 2024 in Vienna, Austria. The event, hosted by the Austrian Ministry of Foreign Affairs, gathered more than 1,000 participants, including from 144 states.

The NIM team is pleased to welcome two new members: Eliza Walsh, Legal Officer, and Alix Renaudin, Associate Legal Officer.

## **Verification and Monitoring**

Alberto Muti, Grant Christopher, Hugh Chalmers, Noel Stott, Hailey Wingo and Caroline Higgins

### **Activities**

In December 2023, Programme Co-Director Dr Grant Christopher, with assistance from Researcher Hailey Wingo, completed a project assessing quantum technologies and arms control for the US Department of State.

In January 2024, Grant Christopher chaired a meeting of the European Safeguards Association (ESARDA) Verification Technologies and Methodologies (VTM) working group. Hugh Chalmers contributed to a safeguards capacity-building workshop in the Laos where he demonstrated different approaches to strengthening domestic safeguards legislation. The workshop was delivered by the US Department of State International Nuclear Safeguards Engagement Programme.

In February, Grant Christopher, Hugh Chalmers and Hailey Wingo held a workshop in Vienna on North Korean Nuclear Futures. The workshop was held in cooperation with One Earth Future Open Nuclear Network Programme and the Vienna Centre for Disarmament and Non-Proliferation (VCDNP). The workshop used a forecasting methodology, facilitated by the Swift Centre, to assess how the North Korean nuclear programme may develop in the next decade.

In March, the programme completed projects on irreversibility of nuclear disarmament and safeguards assistance

for the UK Government. Executive Director Larry MacFaul, Programme Co-Director Alberto Muti and Hailey Wingo hosted a [workshop](#) on pre-deployment orientation for the UN Secretary-General's Mechanism (UNSGM) in partnership with the Office for Disarmament Affairs (UNODA) at UN Headquarters in New York. The workshop's objective was to identify needs and priorities for pre-deployment orientation for a UNSGM mission, with a specific focus on investigations of alleged use of biological weapons. The UNSGM is not a standing mechanism, but will be activated only upon requests from any UN Member States. UNODA maintains a roster of nationally nominated 'qualified experts' who may be drawn upon for the mission team if the UNSGM is activated. To ensure readiness, qualified experts undergo additional [training](#) following their nomination. In this context, pre-deployment orientation is meant to brief team members on the details and goals of the mission, provide refreshers on field operations and equipment, convey certain skills needed in the investigation and ensure that the experts are able to operate together as part of a UN mission team.

In April, Hailey Wingo participated in a workshop conducted by the Royal United Services Institute (RUSI): *Project Anthracite: Assessing the Chemical Weapons Capability of the DPRK*. Alberto Muti attended a workshop organised by the research consortium VeSPoTec (Verification in a Complex and Unpredictable World: Social, Political and Technical Processes) and VCDNP on the potential role of the International Atomic Energy Agency (IAEA) in verifying the irreversible reduction and elimination of military nuclear stockpiles.

In May, Grant Christopher participated in a workshop organised by Zurich ETH on *Inspection and Inference: Theories and Tools of Nuclear Arms Control Verification*. The VM team hosted a workshop on the use of Uncrewed Aerial Vehicles in cooperative overhead monitoring. Grant Christopher and Hailey Wingo travelled to Washington DC to provide briefings on our North Korean WMD Capabilities project, which finished at the end of May. Hugh Chalmers facilitated virtually a meeting of the ESARDA VTM working group, on the sidelines of the ESARDA meeting in Luxembourg. VERTIC published a [report](#) that explores an under-examined part of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) verification regime: its consultation and clarification mechanism.

In June, Larry MacFaul, Grant Christopher and Noel Stott attended the 3<sup>rd</sup> annual Alva Myrdal Centre Conference in Uppsala, Sweden. Grant jointly presented a paper on the North

Korean Experimental Light Water Reactor with researchers from the University of Uppsala and Noel Stott presented work on the Scientific Advisory Group of the Treaty on the Prohibition of Nuclear Weapons. In addition, Noel co-authored a paper written by participants in the African and Latin American research and innovation Hubs for nuclear disarmament verification on "What would constitute 'credible or sufficient assurance' that a nuclear weapons programme has been irreversibly dismantled? Insights from Africa and Latin America". Emiliano J. Buis from our partner NPSGlobal presented the paper to the Conference.

### Staff updates

In January, Alberto Muti and Grant Christopher were confirmed as Co-Programme Directors for the VM Programme and Hailey Wingo was promoted to Researcher. In April Caroline Higgins joined the team as Senior Project Officer.

## Compliance Mechanisms and Measures

Angela Woodward and Roel Walravens

### Activities

#### North Korean maritime sanctions

The Compliance Mechanisms and Measures (CMM) Programme's work on implementing UN Security Council sanctions on North Korea continued into the first and second quarters of 2024. The team is conducting training activities with states and other relevant maritime stakeholders involved in implementing the sanctions. Operating as part of a consortium together with the James Martin Center for Nonproliferation Studies (CNS) the CMM team continued to develop training courses on sanctions implementation pertaining to due diligence in sanctions implementation, ship registry operations, and sanctions enforcement. CMM's project mandate focuses primarily on research of UN Security Council maritime sanctions-related issues, particularly on matters related to their legal implementation, but also includes identifying new trends in sanctions evasion tactics, examining case studies of enforcement and compiling best practices of effective national implementation.

#### BWC Universalisation in the Pacific

Angela Woodward, based in New Zealand, participated in the 'Regional Workshop on Achieving the Universalization of the

Biological Weapons Convention in the Pacific' from 23 to 25 January 2024 in Brisbane, Australia. This workshop was organised by the United Nations Office for Disarmament Affairs with the support of the European Union and the Department of Foreign Affairs and Trade of Australia.



building trust through verification

#### **Mission statement**

VERTIC is an independent, not-for-profit, nongovernmental organisation. Our mission is to support the development, implementation and effectiveness of international agreements and related regional and national initiatives, with particular attention to issues of monitoring, review, legislation and verification. We conduct research, analysis and provide expert advice and information to governments and other stakeholders. We also provide support for capacity building, training, legislative assistance and cooperation.

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Mr Larry MacFaul, Executive Director (United Kingdom);  
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 Ms Yasemin Balci, Co-Programme Director (the Netherlands);  
 Dr Grant Christopher, Co-Programme Director (USA);  
 Mr Alberto Muti, Co-Programme Director (Italy);  
 Mr Noel Stott, Senior Researcher (South Africa);  
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 Mr. Roel Walravens, Researcher (United Kingdom);  
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