

**Comprehensive Nuclear-Test-Ban Treaty:
Possible measures to
bring the provisions of the Treaty into force
and strengthen the norm against nuclear testing**

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Executive Summary

A universal and effectively verifiable treaty prohibiting the conduct of nuclear tests represents a vital disarmament and non-proliferation measure and a major contribution to the achievement of a world without nuclear weapons. The adoption of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in 1996 was hailed as one of the most significant concrete and practical steps of nuclear disarmament. However, the CTBT has been afflicted with an exceptionally difficult entry into force formula, requiring ratification by all of the 44 States named in Annex 2 of the Treaty. Continuing uncertainty about when, or even whether, the CTBT can be brought into force has been pointed out as a serious weakness and challenge for the future of the Treaty.

While the CTBT is still not in force, considerable progress has been made on the operational aspects of the Treaty. The Treaty's International Monitoring System (IMS) is now 90 per cent complete and the International Data Centre (IDC) is analysing data sent from the IMS stations. In addition, the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (PrepCom) is working to develop procedures for on-site inspections (OSI), the capability of which has been demonstrated through field exercises.

Current legal status of the CTBT: Progress made in operational aspects of the CTBT has not been matched by progress in the Treaty's normative status. The CTBT has not yet entered into force, and the question whether the nuclear-test-ban has gained the status of customary international law or a de facto norm is disputable. While Article 18 of the Vienna Convention on the Law of Treaties provides that prior to a treaty's entry into force signatory States are obliged to refrain from acts which would defeat the object and purpose of the treaty – which in the case of the CTBT most consider would include the nuclear-test-ban – this is not universally accepted. In the absence of a solid legal basis for the normative standing of the CTBT, there is a need for action to strengthen this standing.

Renewed efforts to secure outstanding ratifications and signatures are essential. At the same time, as the ratification of the CTBT by the remaining eight Annex 2 States is not foreseeable in the near future, this in turn has prompted thinking on whether steps can be taken to strengthen the normative status of the Treaty before its entry into force. This paper examines possible measures as listed below.

Ideas to bring the provisions of the Treaty into force as a whole: There have been ideas about what could be done to bring the provisions of the CTBT as a whole, including its normative aspects, into legal effect without depending on all of the remaining Annex 2 ratifications. These include:

- (a) A new treaty – replicating the existing CTBT but with revised entry into force provisions.
- (b) Treaty amendment – amending the CTBT's entry into force conditions under Article XIV through adopting a subsequent agreement prior to the CTBT's entry into force.
- (c) Waiver of Annex 2 – agreeing on a protocol or a resolution by which the ratifying States declare the CTBT is in force.
- (d) Provisional application of the CTBT as a whole – establishing a legal obligation to apply the whole of the Treaty pending its entry into force.

If any of these options are realized, the provisions of the CTBT would have legal force as if the Treaty were entered into force. However, to proceed with these options, it would be politically necessary to have consensus among the ratifying States so as not to undermine the Treaty's

fundamental structure. Under current circumstances, it seems unlikely that such a condition will be met. From a practical point of view, the options for bringing the Treaty into force as a whole would not be realistic.

Strengthening the norm against nuclear testing: While bringing the CTBT as a whole into force appears as difficult as securing the ratifications of the remaining Annex 2 States, there are also ideas aimed particularly at strengthening the norm against nuclear testing:

- (e) A Security Council resolution under Chapter VII of the UN Charter proscribing all nuclear testing. This would have the advantage of universal application – it would apply to all States, including those that have not ratified or signed the CTBT. However, it is questionable whether the P5 would agree to support such a resolution. In view of the 2018 Nuclear Posture Review of the United States (US), it seems unlikely the current US administration would support such a resolution. This could also be an issue for other States.
- (f) Provisional application of CTBT Article I would establish a legally binding obligation to apply Article I – the basic obligations not to carry out any nuclear test and to refrain from encouraging or participating in such a test – among those States willing to do so. A growing number of States acting in association to voluntarily declare the provisional application of the nuclear-test-ban norm could explicitly demonstrate the progressive and tangible expansion of this norm. It also could add to the political pressure on States whose signatures and ratifications remain outstanding. A similar but less structured approach might be possible through unilateral declarations under some international framework.
- (g) Unilateral declarations can create legal obligations for a State if the State makes the declaration publicly and the declaration shows the intention to be legally bound. In the absence of the CTBT's entry into force, unilateral declarations could be an effective way for States to commit themselves through acts whereby they unilaterally undertake the obligation not to conduct nuclear tests. A group of States promoting this action could coordinate declarations under an international framework. A growing number of States committing themselves not to conduct nuclear testing could contribute to strengthening the normative aspects of the CTBT, as in the case of provisional application mentioned above.
- (h) Collective statements against nuclear testing using the existing international framework, similar to the Joint Ministerial Statement adopted in 2014 at the Seventh Ministerial Meeting of the Friends of the CTBT, which inter alia stated that the nuclear test moratorium has become a de facto international norm. Such action by a large group of States could be conducive for the formation of customary international law against nuclear testing. However, one issue with customary international law is how to reach a definitive conclusion that a norm is firmly established.

The options above vary in terms of normative strength and political feasibility. Generally speaking, normatively strong measures tend to entail more political obstacles, sometimes insurmountable difficulties, and vice versa. Furthermore, actions of States taken under a more structured framework are normatively stronger than each State acting individually, but greater international coordination is necessary. Therefore, policy-makers should consider what international framework is preferable and at the same time what domestic process is necessary to take steps in accordance with such an international framework; these factors might differ from State to State.

Other actions to strengthen the CTBT: The paper discusses a number of practical actions States can take which would strengthen the Treaty by enhancing operational preparedness for entry into force.

Essential to avoid division: Whichever actions are adopted, it is essential to avoid creating major divisions among the ratifying and signatory States which could undermine the Treaty's basic structure. Thus it is highly recommended that any action should be carried out through consensus or through voluntary measures by those States which are ready to take such action.

1. Introduction

A universal and effectively verifiable treaty prohibiting the conduct of nuclear tests represents a vital disarmament and non-proliferation measure and a major contribution to the achievement of a world without nuclear weapons. The adoption of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in 1996 was hailed as one of the most significant concrete and practical steps of nuclear disarmament. However, more than 22 years after the Treaty was opened for signature, it has still not entered into force. This is due mainly to the failure to date of key States to ratify, but another major factor is the exceptionally difficult entry into force formula¹, which requires ratification by 44 specified States. A full list of States and their ratification or signature status is given in **Attachment 1** to this paper.

Entry into force formula: This was one of the most difficult issues in the negotiation of the CTBT. A simple numeric formula was rejected, as key States wanted to ensure the Treaty would not enter into force until it was ratified by all States capable of conducting a nuclear test – namely, the five nuclear-weapon States recognised by the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and the (then) three “threshold” States.² Several different proposals were advanced during the negotiations. The United States (US) proposed a requirement for ratification by all States with nuclear reactors, but with a waiver provision under which, after all the nuclear-weapon States had ratified, a majority of ratifiers could convene a conference to decide whether to waive the requirement for ratification by every remaining listed state. However, the United Kingdom (UK) did not support a waiver provision.

The outcome eventually agreed in the Treaty was to require ratification by all the States considered to have the capability to produce a nuclear weapon – essentially all States with power and/or research reactors – without a waiver provision. The list of 44 States in Annex 2 of the CTBT comprised all such States existing at that time. Ratification by all 44 of these States is an exceedingly difficult entry into force requirement. Without a waiver provision as the US had proposed, the main result of the Annex 2 list has been to delay entry into force for over 22 years, a length of time which no-one foresaw in 1996. With entry into force seemingly no closer today, it is clear that the entry into force formula is inimical to the wishes of the overwhelming majority of States to see the Treaty in place.

Although the CTBT is still not in force, there has been important progress on the operational aspects of the Treaty, particularly the International Monitoring System (IMS). The IMS is now 90 per cent complete and is providing practical benefits to the international community, notably the detection of the six nuclear tests conducted by the Democratic People’s Republic of Korea (DPRK). The Security Council has recognised that:

... even absent entry into force of the Treaty the monitoring and analytical elements of the verification regime ... contribute to regional stability as a significant confidence-building measure, and strengthen the nuclear non-proliferation and disarmament regime.³

Despite this progress, however, the fact that the Treaty has not yet entered into force is cited by critics as an example of the lack of progress on nuclear disarmament.

¹. CTBT Article XIV and Annex 2.

². The NPT nuclear-weapon States are China, France, Russia, the UK and the US. The “threshold” states at the time were India, Israel and Pakistan.

³. UNSC resolution 2310 (2016).

Further, as UN Secretary-General António Guterres has emphasised:

[While] we should all welcome the robust norm against nuclear testing that has developed since the end of the Cold War, including through the voluntary moratoria implemented by most States that possess nuclear weapons, ... the nuclear tests conducted by the [DPRK] have shown ... that no ad hoc measure can replace a global, legally binding ban on nuclear-testing.

The failure [of the CTBT to enter into force] prevents its full implementation and undermines its permanence in the international security architecture.⁴

Given that the remaining ratifications required for entry into force seem unlikely to be achieved in the near future, this paper looks at ideas to bring the Treaty's provisions into force as a whole without depending on the remaining Annex 2 ratifications. Then, the paper addresses the question whether there are measures the international community can adopt to strengthen the international norm against nuclear testing ahead of the Treaty's entry into force.

Renewed efforts to secure outstanding ratifications and signatures must be given high priority: This is especially the case for the US, which had a significant role in the Treaty's establishment and whose position is crucial to the future of the Treaty – discussed further in **Section 3**. Regarding the remaining Annex 2 States, non-signing or non-ratification by a particular State or States should not be used as an excuse for non-action by other Annex 2 States.

Efforts should be focused on the DPRK in the context of the ongoing denuclearisation negotiations. If the DPRK can be persuaded to sign the CTBT, or better still to ratify it, this would be a strong demonstration of the DPRK's good faith, very positively received by the international community. Also the DPRK could be asked to accept CTBT inspections of the nuclear test site which it says it has dismantled. Joining the CTBT and hosting CTBT inspections would have a positive effect on the standing of the Treaty and the CTBT Organisation (CTBTO).

Further, renewed efforts should be made to persuade India and Pakistan to sign – in addition to the benefit in terms of the CTBT itself, this would be an important confidence-building step between the two States. Efforts should also be made to persuade India to reinstate and proceed with planned IMS facilities which it withdrew from the Treaty.

While, understandably, most attention is on the remaining Annex 2 States, especially those with nuclear weapons, there are 11 other States that have signed but not yet ratified, and nine other States that have not signed – these States should not be overlooked.

An avenue to explore, as one way of encouraging States to sign or ratify the CTBT, is to add this to the conditions for nuclear supply under the Nuclear Suppliers Group Guidelines. This would be difficult, however, while the US and China have not ratified the Treaty.

2. The CTBT's current signature and ratification status

The CTBT was adopted by the UN General Assembly on 10 September 1996 and opened for signature on 24 September 1996. The Treaty is to enter into force 180 days after ratification by all the 44 States listed in Annex 2 to the Treaty. To date 168 States have signed and ratified the Treaty, and a further 16 States have signed but not yet ratified (an overall total of 184 States). Of the 44 Annex 2 States, 36 have ratified the Treaty, but the other eight required ratifications remain outstanding (see **Attachment 1**).

4. UN Secretary-General's speech at the observance of the International Day against Nuclear Tests, 6 September 2018 (see References).

The requirement for ratification by such a large and diverse group of States is exceedingly difficult, as shown by the Treaty still not being in force after 22 years. The great majority of these States (35 of the 44) are non-nuclear-weapon States parties to the NPT. Making the CTBT's entry into force dependent on ratification by these 35 States achieves little in terms of value-added since they are already prohibited from possessing nuclear weapons, and therefore from conducting nuclear tests, by the NPT.⁵ The States of greatest importance to the subject matter of the CTBT are those not subject to the NPT's prohibition on nuclear weapons, namely:

- (a) the five NPT nuclear-weapon States: China, France, Russia, the UK and the US; and
- (b) the four States that are not party to the NPT, and which have nuclear weapons⁶: India, Israel, Pakistan and the DPRK.⁷

All nine of these States are included in Annex 2 of the Treaty. Their status in terms of the CTBT is as follows:

- (a) three have ratified the Treaty: France, Russia and the UK;
- (b) three have signed but not ratified: China, Israel and the US; and
- (c) three have not signed: the DPRK, India and Pakistan.

Although the CTBT has yet to enter into force, key elements of the Treaty's verification system are in provisional operation. The Treaty provides that its verification regime is to be capable of meeting the Treaty's verification requirements upon entry into force.⁸ To undertake the necessary preparations for this, the CTBT States signatories have established the Preparatory Commission for the CTBT Organisation (the **PrepCom**). These matters are discussed further below.

3. The need for action

The delay in bringing the CTBT into force is cited by critics as an example of the lack of progress in nuclear disarmament. This aspect is of particular concern in the context of the regular NPT Review Conferences, the next of which will be held in April-May 2020. It should be a priority to develop an initiative or initiatives that will contribute to a more positive discussion at the Review Conference. There could be advantage in an initiative in which the majority of States can participate, for example strengthening their commitment to the CTBT.

The issue is broader than the NPT Review Conference. There is some concern that, if the delay in entry into force continues indefinitely, some States which have signed the CTBT may consider using the delay as a pretext for renouncing the Treaty. The failure of the US to ratify the Treaty is of particular concern. This concern is exacerbated in view of the statement in the 2018 US Nuclear Posture Review (NPR) that the Trump administration will not seek Senate approval to ratify the CTBT.⁹

5. If a non-nuclear-weapon State party to the NPT were suspected of conducting a nuclear test, verification is not dependent on the CTBT. A nuclear test would amount to a violation of the State's NPT safeguards agreement, so could be investigated by the International Atomic Energy Agency.

6. Currently there is one other State not party to the NPT, the relatively new State of South Sudan, but it does not have nuclear weapons.

7. See, *SIPRI Yearbook 2018: Armaments, Disarmament and International Security*, Oxford University Press 2018. While these sources discuss the number of warheads possessed by the DPRK, there exists no evidence based on public information that the DPRK has developed and deployed nuclear warheads. The DPRK joined the NPT in 1985 but announced its withdrawal in 2003. The validity of the DPRK's withdrawal has not been determined.

8. CTBT Article IV.

9. US Nuclear Posture Review 2018, pages xiii and 40 (see References).

The US position is crucial to the future of the CTBT: Maintaining, indeed stepping up, efforts to secure US ratification is absolutely essential, considering that the US was the main driving force for the creation of the CTBT, and considering also the influence of the US position on other key States.

In the past the US has been unable to ratify the CTBT due to insufficient support in the US Senate. The position set out in the 2018 NPR (i.e., that the current administration will not seek Senate approval) is particularly concerning. Some might argue that in the case of a State whose ratification is essential for the CTBT's entry into force, taking a position against ratification cannot be considered consistent with the obligation of a treaty signatory to refrain from acts which would defeat the object and purpose of the treaty – discussed in **Section 4.1.(b)** of this paper.

Further, some argue that the US position of expecting to receive the benefit of data from the IMS indefinitely, while at the same time refusing to ratify the Treaty which is the basis for the IMS, is politically and legally unsustainable.

The 2018 NPR does not exclude the possibility of resuming nuclear testing “to ensure the safety and effectiveness of the U.S. nuclear arsenal.” Yet the US National Academy of Sciences concluded in 2012 that the US has the technical capabilities to maintain a safe, secure, and reliable stockpile of nuclear weapons into the foreseeable future without nuclear testing.¹⁰ Although this conclusion was reached during the previous administration, it is difficult to see such a scientific assessment changing with a change of administration. The National Academy pointed out that if a return to testing ever did become essential, the US could invoke the supreme national interest clause and withdraw from the Treaty.¹¹ Therefore, a position against ratification seems difficult to justify.

There is no doubt that US ratification would have a positive impact on other ratification holdouts, especially China. Conversely, if the US sought to renounce the CTBT this would be extremely damaging – and if the failure to ratify continues indefinitely this will also be damaging. There is some uncertainty whether a future US administration will be able to secure the two-thirds Senate majority required to ratify the Treaty. There is even some speculation that in view of the political difficulties in securing such a majority, a future administration might be inclined to prioritise other issues requiring Senate approval over the CTBT. This makes it essential to maintain the strongest possible efforts to secure the support of US policy- and law-makers for ratification of the CTBT.

Accelerating the ratification process: In recognition of the difficulties of the CTBT's entry into force requirements, the Treaty's negotiators included a provision for conferences to consider measures to “accelerate the ratification process”. This provision is discussed further in **Section 5** below. At various times CTBT supporters have discussed ideas for bringing the Treaty into force without waiting for the outstanding ratifications, or bringing the Treaty, or parts of it, into provisional application for those States willing to do so. There is considerable interest in proposals for strengthening the Treaty's legal standing, applying more pressure for ratification and at the same time making it harder to renounce the Treaty.

The need to avoid divisions: Some of the proposals discussed in this paper would not require consensus, and could be undertaken by individual States or groups of States. In either case, in considering such proposals, it is important to ensure there are no negative impacts, for example, that could create division on fundamental parts of the Treaty among the ratifying States and signatory States. It is especially important to avoid inadvertently detracting from the operational strengths that the Treaty has already. Thus, for this purpose, it is highly recommended that any action should be carried out through consensus or through voluntary measures by those States

¹⁰. National Academy of Sciences, *The Comprehensive Nuclear Test Ban Treaty—Technical Issues for the United States*, 2012.

¹¹. CTBT Article IX.

which are ready to take such action, similar to the “gift basket” approach used in the Nuclear Security Summits. In this regard, it is important to promote a greater appreciation of the Treaty’s existing strengths (while stressing that until the Treaty is brought into force it cannot be implemented fully and its permanence cannot be assured).

Ideas for consideration:

Section 6.2 looks at ideas to bring the provisions of the Treaty into force as a whole:

- (a) *A new treaty* – replicating the existing CTBT but with revised entry into force provisions;
- (b) *Treaty amendment* – amending the CTBT’s entry into force conditions under Article XIV through adopting a subsequent agreement prior to the CTBT’s entry into force;
- (c) *Waiver of Annex 2* – agreeing on a protocol or a resolution by which ratifying States declare the CTBT is in force;
- (d) *Provisional application of the CTBT as a whole* establishing a legal obligation to apply the whole of the Treaty pending its entry into force;
- (e) Pros/Cons and likely timeline.

Section 7 explores ideas to strengthen the norm against nuclear testing:

- (a) *UN Security Council resolution* – adopting a Security Council resolution under Chapter VII of the Charter proscribing all nuclear tests;
- (b) *Provisional application of CTBT Article I* – establishing a legally binding obligation to apply the basic obligations of the CTBT, not to carry out any nuclear test and to refrain from encouraging or participating in such a test;
- (c) *Unilateral declarations* – encouraging States to make legally binding declarations of their intention not to conduct any nuclear tests;
- (d) *Collective statements against nuclear testing* – co-ordinating statements in support of the nuclear test moratorium as a de facto international norm.

Section 8 looks at other actions that might be considered to strengthen the CTBT.

4. The CTBT’s current legal and operational status

4.1. Legal Status

(a) The norm against testing in customary international law

Customary international law is based mainly on the conduct of States but can also be evidenced from the treaties they adopt. Criteria evidencing the existence of a rule of customary international law include:

- (i) State practice – States generally act in a particular way over time;
- (ii) *Opinio juris* – States act this way because they consider themselves legally bound to do so (not simply because of tradition, courtesy or convenience).

In considering whether a ban on nuclear testing is now established as a rule of customary international law, some relevant factors are set out in the following discussion.

Consistency and duration of practice

National moratoria on nuclear testing have been maintained by most of the nuclear-armed States for some decades. Russia and the US have not conducted a nuclear test since 1990 and 1992 respectively. The UK has not tested since 1991. France and China have not tested since 1996. India and Pakistan have not tested since 1998.

Only one state, the DPRK, has conducted nuclear tests this century (six tests between 2006 and 2017). In April 2018, in the context of denuclearisation negotiations with the US, the DPRK announced it no longer needed to conduct nuclear tests and would dismantle its test site¹², though it is not known whether the DPRK's position is conditional on progress in the negotiations.

Opinio juris

General international support for a norm against nuclear testing is demonstrated by the CTBT itself. The CTBT has near-universal support, as shown by the overwhelming majority of States that have ratified it (168 States) or at least signed it (16 States) – a total of 184 States. In their 2016 Joint Statement on the CTBT¹³ the five NPT nuclear-weapon States said, with regard to their nuclear testing moratoria:

We take this opportunity to reaffirm our own moratoria on nuclear weapons test explosions or any other nuclear explosions pending the CTBT's entry into force, as such moratoria are an example of responsible international behaviour that contributes to international peace and stability, while stressing that such moratoria do not have the same permanent legally binding effect as entry into force. We call on other States to do likewise, recognizing that a nuclear weapon test explosion or any other nuclear explosion would defeat the object and purpose of the CTBT.

The clearest expression of the existence of a norm against nuclear testing is to be found in the 2014 Joint Ministerial Statement adopted at the Seventh Ministerial Meeting of the Friends of the CTBT¹⁴ which stated *inter alia* that (underlining added):

Although the Treaty is yet to enter into force, the nuclear test moratorium has become a de facto international norm. However, without the lasting and legally-binding effect of entry into force of the Treaty, such a norm remains fragile.

This statement, brought forward by the Foreign Ministers of Australia, Canada, Finland, Germany, Japan and the Netherlands, was endorsed by a total of 104 CTBT ratifying and signatory States, including the five NPT nuclear-weapon States.

These two statements support the possible existence of a norm against nuclear testing, but one could argue that these are not universally consensual statements and fall short of constituting evidence of customary international law.

¹². www.reuters.com/article/us-northkorea-china-visit/north-koreas-kim-discusses-expected-summit-with-trump-in-talks-in-china-yonhap-idUSKCN1P12A7; re-stated in Kim Jung Un's 2019 New Year address, http://rodong.rep.kp/en/index.php?strPageID=SF01_02_01&newsID=2019-01-01-0003.

¹³. See References.

¹⁴. See References.

Other treaties that refer to nuclear weapons, and/or their testing, include the NPT and the nuclear weapon-free zone treaties.¹⁵ However, on this issue, their relevance is limited.

NPT: The overwhelming majority of States, 185 in total, are non-nuclear-weapon States party to the NPT. As such they are legally committed not to acquire nuclear weapons, hence not to test such weapons. However, the NPT does not prohibit the NPT nuclear-weapon States from having and testing nuclear weapons, and of course the NPT does not apply to the four nuclear-armed States that are outside the Treaty – India, Israel, Pakistan and the DPRK.¹⁶ On the other hand, the obligation of the nuclear-weapon States under the NPT to pursue negotiations for cessation of the arms race and for nuclear disarmament¹⁷ has implications for nuclear testing. One can argue that nuclear testing, especially for the development of new types of weapons, cannot be considered consistent with this obligation.

Nuclear-weapon-free zone treaties: A great number of States have accepted a legal obligation specifically against nuclear testing through their participation in regional nuclear-weapon-free zone treaties – currently there are five such treaties with collectively 102 parties¹⁸, or a total of 103 States including Mongolia's unilateral nuclear weapon-free zone. However, there is limited participation in these treaties by the nuclear-weapon States, and no participation by the non-NPT States.

Other treaties: Other treaties proscribing nuclear tests in specific areas are the Antarctic Treaty 1959, the Partial Test-Ban Treaty 1963, the Outer Space Treaty 1967 and the Seabed Arms Control Treaty 1971. These have various degrees of participation by the nuclear-armed States.¹⁹

ICJ advisory opinion: Also potentially relevant is the 1996 advisory opinion of the International Court of Justice (ICJ) on the legality of the threat or use of nuclear weapons.²⁰ While the ICJ did not specifically rule on nuclear testing, the fact it considered that the use of nuclear weapons would generally be contrary to the rules of international law has some implications, albeit uncertain, for nuclear testing – since there are legal questions about the use of nuclear weapons, one can argue that there should also be questions about preparations for their use, such as nuclear testing.

However, none of the above are considered to provide a solid basis to argue that the prohibition of nuclear testing has become customary international law.

¹⁵. Reference may also be made to the Treaty on the Prohibition of Nuclear Weapons (TPNW), which is open for signature but is not yet in force. There are various views on this treaty, but one might argue that it can also be expected to contribute to strengthening the norm against nuclear testing. At the time of writing, the TPNW had 70 signatories, but only 22 of the 50 ratifications required for entry into force: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVI-9&chapter=26&clang=en, accessed 29 March 2019.

¹⁶. See, *SIPRI Yearbook 2018: Armaments, Disarmament and International Security*, Oxford University Press 2018.

¹⁷. NPT Article VI. In its 1996 advisory opinion on the legality of the threat or use of nuclear weapons, the ICJ held that the obligation to negotiate in good faith for nuclear disarmament meant an obligation to bring these negotiations to a (successful) conclusion.

¹⁸. See the Treaty of Tlatelolco (Latin America) 1967, Treaty of Rarotonga (South Pacific) 1985, Treaty of Pelindaba (Africa) 1996, Treaty of Bangkok (South East Asia) 1995, and the Treaty of Semipalatinsk (Central Asia) 2006.

¹⁹. Antarctic Treaty: all five NPT nuclear-weapon States plus India; Partial Test-Ban Treaty: Russia, the UK, the US, India, Israel, Pakistan; Outer Space Treaty: all nine nuclear-armed states; Seabed Treaty: China, Russia, the UK, the US, India.

²⁰. See References.

Recent developments: The 2018 US Nuclear Posture Review States that the Trump administration will not seek Senate ratification of the CTBT. The Review also States:

The United States will not resume nuclear explosive testing unless necessary to ensure the safety and effectiveness of the U.S. nuclear arsenal, and calls on all states possessing nuclear weapons to declare or maintain a moratorium on nuclear testing.²¹

... the United States must remain ready to resume nuclear testing if necessary to meet severe technological or geopolitical challenges.²²

While reservation of the possibility of resuming testing “if necessary” is a step back from previous Nuclear Posture Reviews and is very disappointing, it should be kept in mind that the CTBT itself provides a right of withdrawal where *extraordinary events* have jeopardised a party’s *supreme interests*.²³ When States come to consider what their supreme interests are, it is essential for them to recognise the benefits they gain from a global prohibition on nuclear testing.

It is also important to note that the 2018 Nuclear Posture Review says the US will continue to support the CTBTO PrepCom and the CTBT’s IMS and International Data Centre (IDC).²⁴

To sum up:

While a great number of States have, through treaties and statements, demonstrated support for a norm against nuclear testing, what is most authoritative is the behaviour of the States that are currently capable of conducting nuclear tests, namely, the nine nuclear-armed States.²⁵ As noted above, eight of these States have had testing moratoria in place for 20 years or more. However, we should be mindful of the difference between testing moratoria and a legally binding norm against testing. While testing moratoria are welcome, these are only policy-based and fall short of a legally binding commitment.

A two-thirds majority of nuclear-armed States, including all the NPT nuclear-weapon States, have at least signed the CTBT:

- France, Russia and the UK have ratified;
- China, Israel and the US have signed;
- Only the DPRK, India and Pakistan have not signed.

All five NPT nuclear-weapon States subscribed to the 2014 Joint Ministerial Statement against nuclear testing. The five collaborated on the 2016 Joint Statement in support of the CTBT, and on the Security Council’s 2016 resolution on the CTBT (see **Section 7.1.** following). While, in the case of the US, the 2016 statement and Security Council resolution date from the Obama administration, the Trump administration, in its 2018 Nuclear Posture Review, is generally in favour of maintaining its test moratorium.

Thus the general stance of the major nuclear weapon possessor States, demonstrated by practice and by statements, is against conducting nuclear testing (albeit with some qualification by the Trump administration).

²¹. US Nuclear Posture Review 2018, page xiii.

²². *Id.*, p. 40.

²³. CTBT Article IX.

²⁴. US Nuclear Posture Review 2018, page xiii.

²⁵. See, *SIPRI Yearbook 2018: Armaments, Disarmament and International Security*, Oxford University Press 2018.

It might be argued that the DPRK tests contradict this general stance of not conducting nuclear testing. The contrary argument is that violations of this general stance do not negate the existence of such a stance. The universal condemnation of the DPRK tests suggests a general stance against nuclear testing does exist. The Security Council resolutions on the DPRK tests demand that the DPRK cease nuclear tests, and describe these tests as a threat to international peace and security – and to date the DPRK is maintaining the unilateral cessation of testing announced in April 2018.

A reasonable conclusion from this discussion is that a general stance against nuclear testing does exist, but is probably not yet generally considered to be firmly established in customary international law. One issue with customary international law is how to reach a definitive conclusion that a norm is firmly established. A solution here might be, at an appropriate time, to seek an advisory opinion from the ICJ. However, if the ICJ reached a negative finding this would clearly be a setback. Before proceeding with an ICJ referral it would be preferable to have some indication that a favourable outcome is likely.

(b) VCLT Article 18

While the CTBT has not yet entered into force and its basic obligation against nuclear testing has not gained the status of a customary law, it can be argued that the CTBT already has substantial legal effect through the law of treaties, specifically the general obligation of treaty signatory and ratifying States not to defeat the object and purpose of a treaty prior to its entry into force.

Obligation not to defeat the treaty's object and purpose

The obligation of treaty signatory States and ratifying States not to defeat the object and purpose of a treaty prior to its entry into force is set out in Article 18 of the Vienna Convention on the Law of Treaties (VCLT). Article 18 provides that:

A State is obliged to refrain from acts which would defeat the object and purpose of a treaty when:

- (a) It has signed the treaty ... until it shall have made its intention clear not to become a party to the treaty; or
- (b) It has expressed its consent to be bound by the treaty, pending the entry into force of the treaty and provided that such entry into force is not unduly delayed.

The VCLT is taken to reflect customary international law: A number of authorities suggest that the VCLT's principles on this and other matters are generally considered to reflect customary international law, hence to apply to all States, not only those that are party to the Convention.

Currently a number of States are not party to the VCLT – the Convention has 116 parties.²⁶ Significant non-parties include France, Israel and the US (the US has signed but not ratified).²⁷ This does not mean, however, that non-parties do not accept the VCLT's provisions. One leading expert suggests the reason for many States not joining the VCLT is that, since the Convention

²⁶. https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXIII-1&chapter=23&Temp=mtdsg3&clang=en, retrieved 19 March 2019.

²⁷. Other states not party to the VCLT include the DPRK, India and Pakistan. However, until these states sign the CTBT, the principles expressed in VCLT Articles 18 and 25 do not apply to them.

largely reflects customary law, they see no need to join it.²⁸ The official position of the US on the VCLT is expressed on the State Department website as follows:

The U.S. Senate has not given its advice and consent to the treaty. The United States considers many of the provisions of the Vienna Convention on the Law of Treaties to constitute customary international law on the law of treaties.²⁹

Acts which could defeat the object and purpose of the CTBT have not been formally defined, but would obviously include conducting a nuclear test. The NPT nuclear-weapon States, in their 2016 Joint Statement, state that “a nuclear-weapon test explosion or any other nuclear explosion would defeat the object and purpose of the CTBT”.

This is an interpretation as of 2016 by the States that collectively hold over 95 per cent of the world’s nuclear weapons. It can be argued that assisting in the conduct of a nuclear test would also be considered an action that would defeat the object and purpose of the Treaty.

With this, one can assert that pending entry into force of the CTBT, the **basic obligations** set out in Article I of the CTBT – not to carry out any nuclear test, to prohibit and prevent any such test in the state’s jurisdiction, and not to encourage or participate in any nuclear test – are, for those States that have ratified or signed the CTBT, given effect by the legal principle reflected in VCLT Article 18.

Undue delay in entry into force

As to the possibility of not proceeding with a treaty, or renouncing it, Article 18 distinguishes between two situations:

- (i) A State that has signed but not yet ratified a treaty is obliged not to defeat the object and purpose of the treaty unless it makes clear an intention not to proceed with ratification. *Prima facie* a signatory State may decide at any time not to proceed with the treaty, but this would depend on the specific circumstances. As will be discussed, it could be argued that a CTBT signatory that participates in the PrepCom becomes subject to obligations that affect its freedom of action with respect to renouncing the CTBT.

Currently there are 16 States that have signed but not yet ratified the CTBT, including five Annex 2 States – three with nuclear weapons (China, Israel and the US) and two others (Egypt and Iran) (see full list at **Attachment 1**);

- (ii) A State that has ratified a treaty is obliged not to defeat the object and purpose of the treaty, provided entry into force is not **unduly delayed**. The VCLT gives no guidance on interpreting *undue delay*. In the case of the CTBT, here too participation in the PrepCom establishes obligations that bear on the question whether a State can renounce the CTBT because of delay in entry into force.

Currently 168 States have ratified the CTBT, including three Annex 2 States with nuclear weapons (France, Russia and the UK) and 33 other Annex 2 States.

Whether delay is undue depends on the circumstances

Prima facie VCLT Article 18 allows renunciation of a treaty if entry into force is unduly delayed. Though it has been over 22 years since the CTBT was opened for signature, however, passage of time in itself does not constitute *undue delay*. There is little guidance on this question. In the

²⁸. An illustrative statement on this is Anthony Aust, “When questions of treaty law arise during negotiations or litigation ... the rules set forth in the VCLT are invariably relied upon by the States concerned, or the international or national court or tribunal, even when the States concerned are not parties to the VCLT”. (See Aust, VCLT, in the References).

²⁹. US State Department, www.state.gov/s/l/treaty/faqs/70139.htm, retrieved 21 March 2019.

author's opinion, whether delay in entry into force is sufficient to justify renunciation of a treaty depends on factors such as whether the delay is frustrating the object and purpose of the treaty, or whether the relevance of the treaty has diminished.

Looking at the circumstances of the CTBT:

- (i) although the Treaty is not yet in force, there exist a general stance of not conducting nuclear testing;
- (ii) the Treaty's object and purpose are also being advanced through the establishment and provisional operation of the IMS and associated activities. As noted earlier, the Security Council has recognised that even absent entry into force the monitoring and analytical elements of the CTBT's verification regime contribute to regional stability and strengthen the non-proliferation and disarmament regime.³⁰ One could argue that any renunciation of the Treaty would violate the principle of *pacta sunt servanda* with regard to the IMS and the PrepCom arrangements;
- (iii) the ratifying and signatory States remain committed to achieving the CTBT's entry into force, as demonstrated by the regular Article XIV conferences.³¹

Opposing Views

However, this line of argument based on Article 18 of the VCLT as discussed in this section can be contested from opposing views, particularly for the US.

First, it is disputable whether the US accepts the principle expressed in Article 18 of the VCLT. A former high-ranking US official explained at the Senate Committee on Foreign Relations in 2016 that one of the reasons the Senate never agreed to the VCLT was because "that is a diminution of the role and the authority of the Senate to approve or disapprove the imposition of legal obligations"³², if a treaty binds the US through Article 18 of the VCLT prior to its ratification. Further, the abovementioned official position of the US on the VCLT is not specific on which provisions of the VCLT constitute customary international law on the law of the treaties.

Second, the 2016 P5 Statement³³ that "a nuclear-weapon test explosion or any other nuclear explosion would defeat the object and purpose of the CTBT", which constitutes the core of this argument, represents a policy statement during the Obama administration, and the stance of the Trump administration might not be the same as this. We should be reminded that there existed strong opposition in the Republican side against the attempt by the Obama administration to solidify the legal effect of the CTBT by steps taken by the administration.

Thus, there is uncertainty whether this argument based on Article 18 of the VCLT really holds, particularly for the US.

4.2. Operational status

(a) CTBTO Preparatory Commission

The CTBT is unusual among treaties in that key elements of the Treaty have been brought into operation ahead of the Treaty's entry into force. This is because Article IV requires the Treaty's

³⁰. UNSC resolution 2310 (2016).

³¹. MacLean (References).

³². Hearing before the Committee on Foreign Relations United States Senate, One Hundred Fourteenth Congress Second Sessions, (September 7, 2016) see, https://www.foreign.senate.gov/imo/media/doc/o90716_Transcript_The%20Administration's%20Proposal%20for%20a%20UN%20Resolution.pdf, retrieved 28 March 2019.

³³. See References.

verification regime to be capable of meeting the Treaty's verification requirements upon entry into force. Pursuant to Article IV, on 19 November 1996 the Treaty signatory States adopted a resolution³⁴ to establish the CTBTO PrepCom to undertake the necessary preparations. The PrepCom is given the standing of an international organisation, with legal authority to negotiate and enter into agreements.³⁵ Detailed provisions on the operation of the PrepCom are set out in the Text annexed to this resolution. All CTBT ratifying and signatory States are Members of the PrepCom.³⁶

The technical facilities involved (the IMS and the IDC) are described as being in *provisional operation*.³⁷ Also applying ahead of entry into force are the provisions of the Treaty dealing with the convening of conferences on accelerating the Treaty's entry into force (Article XIV). Article XIV conferences are discussed in **Section 5**.

Provisional operation

Over the last 22 years, as outlined in the description of the Treaty's operational status below, the PrepCom, in cooperation with its Member States (that is, the CTBT ratifying and signatory States), has established some 90 per cent of the CTBT's IMS and the IDC.³⁸ These activities can be construed as provisional operation of the Treaty based on the 1996 resolution, pending the entry into force of the Treaty. Almost half the Member States (see **Attachment 1**) are hosting IMS facilities under agreements concluded with the PrepCom. The system is not yet fully operational, but is now very close to this technically. These technical assets are already effectively monitoring the globe for nuclear explosions.

The CTBT signatory States contribute to the PrepCom's budget in accordance with the UN scale of assessments. The PrepCom budget is substantial, being used for the establishment, operation and maintenance of IMS stations as well as other PrepCom activities. The PrepCom's annual budget for 2018 was \$132 million.

To sum up:

- The basis for provisional operation of the CTBT's IMS and associated activities in preparation for entry into force is provided for by the Treaty itself.
- The ratifying and signatory States, through the PrepCom resolution, have agreed on specific measures to meet the CTBT's requirements, and have been funding the establishment and operation of the IMS for over 20 years.
- The PrepCom Member States have committed to the provisional operation of the CTBT's IMS and related activities until the Treaty's entry into force is achieved.

These facts clearly demonstrate an intention by the PrepCom Member States to establish binding obligations with respect to the preparations for the CTBT's entry into force.

³⁴. The PrepCom resolution and Text are at https://www.ctbto.org/fileadmin/user_upload/legal/CTBT-MSS-RES-1-e_01.pdf. The Text contains the detailed provisions for the establishment and operation of the PrepCom. While the Text is a separate document annexed to the resolution, the usual practice, in referring to these provisions, is to refer to "the resolution".

³⁵. PrepCom resolution paragraph 7.

³⁶. PrepCom resolution paragraph 4.

³⁷. PrepCom resolution paragraph 14.

³⁸. The IDC collects, processes and analyses monitoring data from the IMS stations and reports to the Member States.

(b) Verification regime

As previously noted, the CTBT requires the Treaty's verification regime to be capable of meeting the Treaty's verification requirements at entry into force.³⁹ The verification regime comprises the following elements:

- (i) the IMS;
- (ii) consultation and clarification;
- (iii) on-site inspections (OSI); and
- (iv) confidence-building measures.

The Treaty requires each party, through its National Authority, to cooperate with the CTBT Organisation and the other parties to facilitate verification of compliance by, *inter alia*:

- (i) establishing the necessary facilities and communication;
- (ii) providing data from national stations that are part of the IMS;
- (iii) participating in consultation and clarification;
- (iv) permitting OSI; and
- (v) participating in confidence-building measures.

The PrepCom resolution requires the PrepCom to undertake all necessary preparations to ensure the operationalisation of the verification regime at entry into force, and to develop appropriate procedures for its operation.⁴⁰ The resolution tasks the PrepCom to supervise and coordinate the development, preparation, testing and provisional operation of the IMS, the IDC, and supporting laboratories and means of communication.⁴¹ The resolution also requires other preparatory work including operating manuals and guidelines and training programs.

The PrepCom, in cooperation with the Member States, has now established the IDC and some 90 per cent of the IMS stations. The Treaty specifies 337 IMS stations and laboratories: of these, currently 297 have been certified, nine have been installed and are awaiting certification, six are under construction, and 25 are planned.⁴² Many Member States have established National Data Centres (NDCs), enabling them to benefit from IMS data and IDC products – the value of this was demonstrated during the international community's response to the DPRK's nuclear tests.

Substantial progress has also been made with regard to preparation of OSI capability (about 70 per cent complete), guidelines for confidence-building measures and procedures for consultation and clarification are already drafted, and OSI exercises and training courses have been conducted.

What is not in place under the PrepCom arrangements is the CTBT's legal and institutional framework for verification and review of compliance, which will not apply until entry into force. A table comparing Treaty provisions and the PrepCom resolution, and summarising the current status of these, is at **Attachment 2** of this paper.

Some Member States have queried what the scope of operation of the IMS should be prior to the Treaty's entry into force – specifically, whether *provisional operation* for the purpose of ensuring “preparedness” should include routine sharing of data from IMS stations with the IDC and Member States. It would be an unduly narrow perception of “preparedness” to exclude data

³⁹. CTBT Article IV.

⁴⁰. PrepCom resolution paragraph 13.

⁴¹. PrepCom resolution paragraph 14.

⁴². <https://www.ctbto.org>, accessed 29 March 2019.

sharing – in order to ensure that the IMS and IDC, and associated systems and practices (including communications and timely analysis by national authorities), are in full operational order at entry into force, it is essential to gain experience with a range of events, both natural and anthropogenic, and from as large a number of IMS stations as possible.

As already mentioned, the value of the IMS to the international community was demonstrated by the detection of the DPRK's nuclear tests. The Security Council, in resolution 2310 of 2016, encouraged all States hosting IMS facilities to transmit data to the IDC on a testing and provisional basis, and recognised the contribution of the monitoring and analytical elements of the verification regime to regional security and strengthening the nuclear non-proliferation and disarmament regime.

5. Article XIV Conferences

In recognition of the likely difficulty of securing all 44 ratifications required for entry into force, Article XIV.2 of the CTBT provides for the convening of conferences to:

... consider and decide by consensus what measures consistent with international law may be undertaken to accelerate the ratification process in order to facilitate the early entry into force of this Treaty.

After the first conference, which was held in 1999, further conferences are to be held yearly (on the anniversary of the Treaty's opening for signature, namely, 24 September) or as otherwise decided. The ratifying States have decided to hold these conferences biennially. To date 10 such conferences have been convened. The next is due this year (2019). While in the Treaty decision-making authority at these conferences is vested in the ratifying States, in practice, signatory States yet to ratify the Treaty participate in these conferences along with ratifying States.

The meaning of *measures consistent with international law ... to accelerate the ratification process* has not been determined. This language lends itself to various interpretations. To date the conferences have focused on ways of encouraging States to ratify. However, accelerating the ratification process suggests something more than simply encouraging States to speed up the *rate* of ratifications. This reference to *process*, together with the reference to *measures consistent with international law*, indicates the possibility of actions more proactive than encouragement.

It is unlikely the language of Article XIV.2 could encompass an amendment to Annex 2 to change the list of named States. The Treaty has an amendment provision (Article VII) which, consistent with usual treaty practice, is expressed not to take effect until after entry into force: this would preclude amendment prior to entry into force.

Waiver of Annex 2: There is room for argument whether Article XIV.2 could encompass a decision by the ratifying States to *waive* the strict application of Annex 2. In the CTBT negotiations, the negotiating States considered whether to include a specific provision for a waiver conference but ultimately decided against it.⁴³ That was over 22 years ago. It is open to the ratifying States today to reach a different interpretation of the scope of Article XIV.2.

If there is consensus by the ratifying States to consider waiver at an Article XIV conference, then there seems no reason why the conference cannot so decide. If there is an objection, a separate meeting could be convened for the purpose – though an objection would suggest lack of consensus, in which case waiver would not work in any event. Waiver is discussed further in **Section 6.2.(c)**.

⁴³. Anastassov, p. 84; Johnson 2003 (References).

6. Ideas to bring the provisions of the CTBT into force as a whole

6.1 Issues regarding entry into force

Article XIV provides that the CTBT cannot enter into force until ratified by all States listed in Annex 2 of the Treaty. Currently entry into force is delayed by the need for eight outstanding ratifications by Annex 2 States, namely: China, the DPRK, Egypt, India, Iran, Israel, Pakistan and the US. The DPRK, India and Pakistan have not signed; the other five have signed but not ratified.

There has been discussion at various times about what could be done to prevent entry into force being held hostage by just one state, for example the DPRK, if this were the only outstanding ratification. It seems generally agreed that something should be done to avoid this situation, but it is not agreed what this “something” would be. It is worthwhile to broaden this discussion, to consider whether the ratifying States would be prepared to proceed without some of the other outstanding ratifications.

Ratification by Egypt and Iran, for instance, while highly desirable, could be considered to add limited value because these two States, as non-nuclear-weapon States party to the NPT, are already prohibited from having nuclear weapons, and therefore from testing nuclear weapons. But what about the US? Would the ratifying States be willing to proceed to entry into force without the US? This seems highly unlikely, and it is difficult to imagine how it would even be possible politically or practically, given the key position of the US to the objectives of the CTBT and in the funding of the IMS and related activities. Or if India and Pakistan were the only outstanding ratifications, would the ratifying States be prepared to proceed with entry into force without these States?

A key consideration here is whether entry into force without particular States would *increase* the pressure on those States to ratify, or could have the opposite effect, *reducing* the pressure to ratify.

As discussed in **Section 5**, Article XIV.2 of the Treaty provides for regular conferences to consider how to accelerate the Treaty’s entry into force. Also as discussed, the references to *process* and *measures consistent with international law* indicate the possibility of actions more proactive than simply “encouraging” ratifications. A fundamental issue for the ratifying States to consider is whether they are prepared to take more proactive measures to bring forward the Treaty’s entry into force. The possible measures discussed below are: a new treaty; amending the Treaty; waiver of Annex 2; and provisional application of the Treaty as a whole.

Whichever approach is taken, consensus among the ratifying States is essential. This is because we should avoid the situation where the CTBT is divided into two mechanisms, rather than one single undertaking. If an approach is decided at an Article XIV conference, consensus is required by Article XIV.2 itself. However, it would be essential to ensure that action aimed at early entry into force has the support of all ratifying States, not only those participating in the conference. If any ratifying States do not attend the conference, it would be essential to ensure they do not oppose the proposed action.

If actions to bring forward entry into force are considered in a different forum, the same considerations apply: it would be essential to have consensus amongst all ratifying States whether or not they participate in the meeting.

Status of the IMS on entry into force: Whichever way the CTBT is brought into force, one aspect to be addressed is the status of IMS stations and related facilities. Following the Treaty’s

entry into force the PrepCom's rights and functions would all transfer to the CTBTO.⁴⁴ However, *provisional* arrangements would need to be continued for States that have signed the CTBT but not ratified it at entry into force. This would certainly be required where such States host IMS stations, to ensure their continued operation. Currently there are nine States that have signed but not ratified the Treaty and are hosting IMS stations, or have stations planned.⁴⁵ These stations would have to continue under provisional arrangements until the States concerned ratify the Treaty. Presumably provisional arrangements would also be required for signatories to contribute funding to the CTBTO in lieu of the PrepCom.

6.2. Ideas for consideration

(a) New treaty

Concluding a new treaty, with revised entry into force provisions, that would achieve the objectives stipulated in the CTBT

There are various ideas for a new treaty to overcome the delay in the CTBT's in entry into force. One proposal is for a new treaty that would replicate the existing CTBT but with a revised Article XIV and/or Annex 2. Exactly what the differences would be – for example which States' ratifications might be stipulated as required for entry into force – has been discussed above.

A simpler approach would be a relatively short treaty, such as an **Implementing Agreement**, in which the parties declare that the CTBT has entered into force for them.⁴⁶ This would avoid the risk of re-opening provisions of the Treaty but there are still other problems, such as the uncertain effect if there is not consensus by the current ratifying States and the question of whether new ratification processes would be required in each state.

(b) Treaty amendment

Amending CTBT Article XIV, and/or Annex 2, with a view to bringing forward the Treaty's entry into force

The established legal position is that a treaty can be amended only after entry into force. Prior to entry into force the treaty provisions have no legal effect, therefore a treaty's own amendment provisions cannot be used. This is reflected in the terms of the CTBT's amendment provision, Article VII, which is expressed not to take effect until after entry into force, thus precluding amendment prior to entry into force. Essentially this means Article XIV and/or Annex 2 cannot be amended formally prior to entry into force.

However, it might be worth mentioning that there is a precedent that provisions of a treaty have been substantially modified through adopting a subsequent agreement prior to its entry into force. This took place in the 1982 United Nations Convention on the Law of the Sea (UNCLOS).⁴⁷ Its implementing agreement has modified Part XI of the UNCLOS prior to its entry into force. Some may consider that this would be a prominent precedent that the CTBT can follow in considering the "waiver of Annex 2".

⁴⁴. PrepCom resolution paragraph 20.

⁴⁵. Currently states that have signed but not yet ratified the Treaty and have IMS stations are: of the Annex 2 states: China, Egypt (stations planned), Iran, Israel, the US; of the other states: Nepal (stations planned), Papua New Guinea, the Solomon Islands, Sri Lanka.

⁴⁶. Suggested by Koplow 2017 (References).

⁴⁷ United Nations Convention on the Law of the Sea, 10 December 1982, https://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm.

(c) Waiver of Annex 2

What is envisaged here is not necessarily a formal waiver (an action expressed to be a waiver), but rather a decision by the ratifying States to forgo a *right* they have under the CTBT, namely, that the Treaty will not enter into force without all the specified ratifications – the ratifying States would be declaring that they do not insist on ratification by all the Annex 2 States.

Such an action by the ratifying States would not be an *amendment* of the CTBT. Provided there is consensus among the ratifying States, these States would not be seeking to impose any new or different legal obligations on other States. Consensus is necessary because when the Treaty enters into force it will apply to all ratifying States. If there is a ratifying State that does not agree to this, the other ratifiers cannot compel that State to accept entry into force.

Bringing the Treaty into force early will not affect the rights and obligations of States that have not ratified it.⁴⁸ If there is a signatory that does not support entry into force without all 44 Annex 2 States, entry into force will not affect that State until such time that it chooses to ratify.

Ultimately waiver is based on the political will of the ratifying States – if the ratifying States reach consensus on forgoing their right to hold the Treaty in abeyance until all the specified States have ratified, they should be free to decide accordingly. Any questions about the legal efficacy of bringing the Treaty into force this way can be resolved by subsequent State practice: if all the ratifying States declare the Treaty in force, convene the Conference of the States Parties and Executive Council, and act in all respects as if the Treaty is in force pursuant to relevant provisions (Article XIV) of the Treaty, then effectively this will be the case – the law will follow the facts.

Two mechanisms for giving effect to a waiver decision are by *protocol* or by *resolution*.

(i) Entry into force by protocol

This would involve a protocol to the CTBT which declares that the Treaty is in force for all the States participating in the protocol. These would all be CTBT ratifying States. Essentially the participating States would be waiving the application of Annex 2, though the protocol need not expressly state that this is a “waiver”.

The protocol could be agreed at an Article XIV conference, as a measure to accelerate the ratification process for the Treaty. As mentioned in **Section 5**, there could be some argument as to whether waiver comes within the scope of matters that can be considered at an Article XIV conference. If necessary, the ratifying States could convene a separate meeting for the purpose.

If the participants want to ensure that particular non-ratifiers join the Treaty before it enters into force, they will need to withhold activation of the protocol until the States they require have ratified.

The question could arise whether such a protocol would require ratification action in the various CTBT ratifying States or would be regarded as part of their existing CTBT ratification approvals. Some would assert that further ratification action will not be required as the protocol would be simply bringing into force a treaty which has already been ratified by the States concerned. Others would assert otherwise, since this will make them bound by the Treaty under conditions different to those provided for by the Treaty.

(ii) Entry into force by resolution

A precedent here is the 1996 resolution establishing the CTBTO PrepCom, which was adopted by the CTBT signatories at a meeting convened by the UN Secretary General as CTBT depositary. At

⁴⁸. Relevant parts of the Treaty (such as the IMS) will continue to operate on a provisional basis for states that have signed the CTBT.

least one authority⁴⁹ considers that the PrepCom resolution is a *supplementary treaty*. The resolution gives effect to Article IV of the Treaty which requires the verification regime to be capable of meeting the verification requirements of the Treaty at entry into force. While the resolution does not have the *form* of a treaty, the practice of the signatories shows they intended it to create legal obligations (evidenced by, for example, provision of annual funding for PrepCom activities, and the hosting, establishment and operation of IMS facilities).

At the time of the PrepCom resolution the CTBT had only recently been opened for signature, and there was only one ratifying state.⁵⁰ Accordingly, the resolution was adopted at a meeting of signatory States (there were at that time 137 signatory States). If it were decided to proceed by resolution now, this should be through a meeting of CTBT ratifying States (of which there are currently 168). As with the concept of a protocol, the most appropriate forum for such a resolution would be an Article XIV conference, which can agree on measures to accelerate the ratification process for the Treaty. Decisions at these conferences are to be taken by consensus of the ratifying States.⁵¹ Alternatively the ratifying States could ask the UN Secretary General, as depositary, to convene a special meeting for the purpose of considering a resolution.

(d) Provisional application of the CTBT as a whole

A number of writers have suggested that provisional application of the CTBT by a large number of States would reinforce the Treaty's legal standing and increase the political costs for any State to withdraw its signature or violate the Treaty.⁵² Some advocate provisional application of the entire Treaty. Others, recognising the difficulty of securing agreement to provisional application of the Treaty as a whole, propose provisional application of key parts of the Treaty.⁵³ Here, we discuss the option of provisional application of the CTBT as a whole.

Provisional application is covered by Article 25 of VCLT, which provides that:

1. A treaty or a part of a treaty is applied provisionally pending its entry into force if:
 - (a) The treaty itself so provides; or
 - (b) The negotiating States have in some other manner so agreed.

The unique legal feature of the provisional application is to produce a legally binding obligation to apply a treaty or part of a treaty as if the treaty were in force. Therefore, a treaty that is subject to an arrangement of provisional application is applied with legal effect even before entry into force.

While in the case of the CTBT, a provision on the treaty's provisional application is not prescribed in the Treaty itself, the negotiating States of the CTBT could apply provisions of the CTBT in whole or in part, as Article 25 clearly acknowledges, once they have in some other manner so agreed. A well-known treaty that did not include provisional application in the original treaty but which was applied provisionally by a subsequent agreement is the 1947 General Agreement on Tariffs and Trade (GATT),⁵⁴ which operated provisionally for 47 years.

⁴⁹. Aust, p. 157. Asada (p. 106) suggests that the PrepCom Text was not intended to be a legal document, but then notes some provisions would not make much sense unless they have legal force.

⁵⁰. Fiji was the first state to ratify the CTBT, on 10 October 1996.

⁵¹. CTBT Article XIV.2.

⁵². See e.g. Barnaby, Johnson 2006, Lewis.

⁵³. For an outline of precedents for provisional application of treaties see International Law Commission 2017 (References).

⁵⁴. Accessible at https://www.wto.org/english/docs_e/legal_e/gatt47.pdf.

Subject areas of treaties that have been provisionally applied vary across the extensive area of international law from trade or commodity agreements to disarmament treaties. Even in the nuclear disarmament field, there is a precedent that States parties provisionally apply provisions of the treaty before entry into force, such as the New Strategic Arms Reduction Treaty (New START).

The theory of provisional application is well established and consistent with public international law, and resorting to provisional application has been a common feature of treaty practice among nations.

As discussed in **Section 4** of this paper, some key technical aspects of the CTBT have been in *provisional operation* for over 20 years, applied by the PrepCom and Member States. The basis for this is specifically provided for by the Treaty, and has the widest possible support, since all ratifying and signatory States are Members of the PrepCom. These activities by the PrepCom and Member States are important in reinforcing the Treaty's legal standing and increasing the political costs for any State considering withdrawal.

Regarding possible provisional application of the Treaty as a whole further to such a provisional operation, important considerations are: what more would be achieved, and whether this is achievable politically and practicably.

The main functional parts of the Treaty currently not in operation are the following:

- **Normative aspect** – the basic obligation under the Treaty which is the norm against testing.
- **Institutional aspects** – the Conference of States Parties and the Executive Council
Currently the PrepCom exists but this does not replace the formal decision-making powers of the Executive Council and the Conference of States Parties. This difference is evident if we think about OSI. OSI does not exist in isolation from the formal decision-making powers of the Executive Council and the Conference of States Parties.
- **Operational aspects** – measures such as consultation and clarification and OSI.

The most substantive operational area of the Treaty not currently in operation is OSI. A table outlining Treaty provisions currently in operation (through the PrepCom) and those that are not is at **Attachment 2** of this paper.

Practical considerations include:

Which States can decide on provisional application? The VCLT Article 25 does not define the extent of “negotiating States” but it is generally interpreted that all the States which were involved in its adoption should be included. Since it was the resolution of the General Assembly of the United Nations (A/RES/50/245) which adopted the CTBT, those States which took part in it should be regarded as “negotiating States” in this context.

What is the mechanism for deciding on, and giving effect to, provisional application? This is for the *negotiating States* – or more particularly, the *ratifying States*, to determine.⁵⁵ Article 25 only stipulates that “the negotiating States have in some other manner so agreed”. This formula leaves broad room for discretion for states to choose mechanisms to express agreement on the provisional application of a treaty. It would be possible that another United Nations General Assembly (UNGA) resolution which takes the same procedure as its adoption can decide on, and give effect to, provisional application. Some may argue whether an Article XIV conference can achieve this. However, it seems states participating in an Article XIV conference

⁵⁵. See VCLT Article 25.

– ratifying states (and signatory States yet to ratify, if we follow the current practice) do not meet the requirements of “negotiating States” mentioned above. However, an Article XIV conference can be utilized as an opportunity to highlight the importance of such an initiative.

It would be for each State to decide what is required to meet its domestic processes. For some, their existing ratifications may be sufficient to support an instrument accepting provisional application of part or all of the CTBT without any further ratification process. However for others it might require a specific procedure since this will cause them to be bound by the Treaty under conditions different to those provided for by the Treaty.

(e) Pros/Cons and likely timeline

Pros If any of these options are realized, the provisions of the CTBT would have legal force as if the Treaty were in force.

Cons To proceed with these options, it would be necessary politically to have consensus among the ratifying States so as not to undermine the Treaty’s fundamental structure. Under the current situation, it seems unlikely that such a condition will be met.

Likely timeline

From a practical point of view, the options for bringing the Treaty into force as a whole would not be realistic.

7. Strengthening the norm against nuclear testing: Ideas for consideration

While bringing the CTBT as a whole into force appears as difficult as securing the ratifications of the remaining Annex 2 States, there are also ideas aimed particularly at strengthening the norm against nuclear testing.

7.1. UN Security Council Resolution

Adopting a Security Council resolution under Chapter VII of the UN Charter proscribing all nuclear tests (that is, expressed in stronger terms than previous Security Council resolutions)

The Security Council may make legally binding decisions to ensure prompt and effective action with respect to the maintenance of international peace and security. The Council can call for specific action, such as **cessation of nuclear tests**, where necessary to deal with a threat or potential threat to international peace and security.⁵⁶ The Council has done this in response to nuclear tests conducted by India, Pakistan and the DPRK.

On nuclear testing in general (as distinct from responding to specific tests), to date the Security Council’s language has been exhortatory. In resolution 1172 of 1998 on the Indian and Pakistan tests the Council *called upon* all States not to carry out any nuclear weapon test in accordance with the provisions of the CTBT. Similar terms were used in resolution 2310 of 2016: the Council *called upon* all States to refrain from conducting any nuclear test. “Calling upon” can be interpreted as being mandatory, depending on the circumstances, but is generally considered to be exhortatory.

⁵⁶. See Koplow, 2014-2015 (References).

One specific idea for strengthening the norm against nuclear testing is a Security Council resolution expressed in stronger terms, **proscribing all nuclear testing**. This would apply to all States, including those that have not ratified or signed the CTBT. However, the question is whether P5, who are also the Council's permanent members, agree to support such a resolution.

Such a resolution *should* be acceptable to three of the Council's permanent members, France, Russia and the UK, as it is consistent with their ratification of the CTBT. However, in view of the 2018 Nuclear Posture Review, it seems unlikely the current US administration would support such a resolution. In the case of Security Council resolution 2310 in 2016, use of a Security Council resolution was criticised in the US as being an attempt to bypass the domestic treaty ratification process. China is unlikely to support it without the US – but this is moot if the US opposes a resolution. Realistically therefore such a resolution seems a medium-term rather than near-term objective.

Another approach would be a resolution *directing* States to sign and ratify the CTBT. However it is doubtful that the Security Council's authority would extend to this, as distinct from proscribing specific actions such as nuclear testing. To date the Security Council's language on joining the CTBT has been exhortatory, not mandatory. In its 1998 resolution the Council *urged*, rather than directed, India and Pakistan to join the Treaty. Likewise, in its 2016 resolution the Council stressed the vital importance and urgency of achieving the Treaty's early entry into force, and *urged* all States that have either not signed or not ratified the Treaty, particularly the eight remaining Annex 2 States, to do so without further delay.

Pros A Security Council resolution proscribing nuclear testing would have the advantage of universal application – it would apply to all States, including those that have not ratified or signed the CTBT.

Cons It seems unlikely the Trump administration would support such a resolution, because of the position on testing in the 2018 NPR and because of domestic political considerations – in the case of the 2016 Security Council resolution, the Obama administration was accused of trying to use the resolution to bypass the Senate treaty approval process.⁵⁷ Similar political or legal considerations might arise for other States. Despite these issues, however, a Security Council resolution is a possibility worth exploring.

Likely timeline

Theoretically, it can be made any time. However, a Security Council resolution proscribing nuclear testing seems unrealistic, at least under the present political environment. Realistically this may seem a medium-term rather than near-term objective.

⁵⁷. <https://www.washingtonpost.com/news/josh-rogin/wp/2016/08/04/obama-will-bypass-congress-look-for-a-resolution-on-nuclear-testing/>

7.2. Provisional application of CTBT Article I

Establishing a legally binding obligation, for those States willing to accept it, to apply the CTBT's basic obligations, not to carry out any nuclear test and to refrain from encouraging or participating in such a test

Article I of the CTBT sets out the **basic obligations** of each party under the Treaty:

- not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control;
- to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.

Currently some argue that these obligations are implicit in the general treaty law obligation of ratifying and signatory States to refrain from acts which would defeat the object and purpose of the CTBT by the principle set force by Article 18 of the VCLT. However, as has been elaborated above, there are opposing views on this, and it is questionable whether this argument really holds. Clearly if States accepted this obligation specifically, by bringing Article I of the CTBT into provisional application, this would constitute a firm legal commitment to the no testing obligation.

If there were a significant and growing number of States acting in association to voluntarily declare the provisional application of the nuclear-test-ban norm, this could explicitly demonstrate the progressive and tangible expansion of this norm. It also could add to the political pressure on States whose CTBT signatures and ratifications remain outstanding. To proceed with this option, it should be made clear that the purpose is to add to momentum towards achieving entry into force, and to strengthen the norm against testing.

We should be mindful of the difference between provisional application of CTBT Article I, which is discussed here, and provisional application of the CTBT as a whole, which is discussed in **Section 6.2.(d)** above. While provisional application of the CTBT as a whole would attempt to bring the whole mechanism of the Treaty – including the norm against testing, decision-making organs (the Executive Council and the Conference of States Parties) and OSI – into effect without waiting for the conditions set by Article XIV to be met, provisional application of CTBT Article I is fundamentally an act by those who take part in it of voluntarily undertaking not to conduct nuclear testing without affecting the rights and obligations of any other States.

There are some States which have indicated disagreement with the idea of provisional application. There should be a discussion with these States about which type of provisional application is being considered.

There may be several options as to the scope of States which are to be eligible for this measure. One major option would be to have this measure open for those States that have ratified the CTBT, since these States have already committed themselves to be ready to be bound by the provisions of the CTBT, including its basic obligation of no-testing.

Although the significance of this measure is expansion of the no-testing norm and political momentum, from the standpoint of value-adding, it would be important to secure the commitment of the nuclear-weapon States that have ratified the Treaty (France, Russia, the UK).

With regard to the mechanism to realize this initiative, two levels should be elaborated, namely the international framework and national action. As for the international framework, as discussed in the section on provisional application of the CTBT as a whole, this measure should be agreed by the negotiating States, as required by Article 25 of the VCLT. A UNGA resolution can satisfy

this requirement. An Article XIV conference can be utilized as an opportunity to highlight the importance of this measure, though it will not meet the requirement of “negotiating States”, thus cannot replace the role of a UNGA resolution.

As for national action, it would be for each State to decide what is required to meet its domestic process. For some, their existing ratification may be sufficient to go along with provisional application of Article I of the CTBT. However, for others, it may require a specific procedure since they will be legally bound by this obligation under conditions different to those provided for by the Treaty.

Pros Compared with the obligation arising from Article 18 of the VCLT not to defeat the object and purpose of the CTBT, bringing Article I into provisional application would produce a clear and unequivocal legal effect of bringing the obligation of Article I into force for those States which choose to accept it.

Such an initiative would add to the political pressure on States whose signatures and ratifications remain outstanding as well as constituting a positive contribution to the 2020 NPT Review Conference.

Bringing Article I into provisional application would also contribute to establishing the no-testing norm as part of customary international law (again, provided the initiative achieves wide support).

Since Article I does not include any functional aspects of the Treaty, provisional application would not involve the institutional and funding complexities that would be raised by a wider application of the Treaty.

Cons If the proposal fails to gain wide support within a reasonable time, this could be exploited by critics as indicating a lack of commitment to the CTBT. The proponents must be prepared for a strong and sustained campaign to maximise participation.

It would be important to assess whether an initiative for provisional application could cause division among PrepCom Member States.

Likely timeline

An initiative could be launched within three to six months, possibly prior to the 2019 CTBT Article XIV conference. The UNGA in 2019 can be used as an opportunity to realize a resolution for this. The 2019 CTBT Article XIV conference can also be utilized to highlight the importance of such an initiative. While it would be a challenge to achieve a substantial number of legally-binding commitments before the 2020 NPT Review Conference (April-May 2020), the existence of the initiative, with good indications of support, could have a positive impact at the Review Conference.

7.3 Unilateral declarations

Encouraging States to make legally binding declarations of their intention not to conduct any nuclear tests

A unilateral declaration can also create legal obligations for a State if it makes the declaration publicly and the declaration shows the intention to be bound. To determine the legal effects of such declarations, it is necessary to take account of their content, the factual circumstances in which they were made, and the reactions of other States. A unilateral declaration that has created legal obligations for the State cannot be revoked at will – whether a declaration can be revoked depends on its specific terms, the extent to which the obligations have been relied upon by others, and whether there has been a fundamental change in circumstances.

In the absence of the CTBT's entry into force, unilateral declarations not to conduct or assist in any nuclear tests could be an effective way for States to commit themselves through acts whereby they unilaterally undertake the obligation not to conduct nuclear tests.

The significance of this measure is, as in the case of provisional application of CTBT Article I, to create a firm legal commitment to the no-testing obligation for those States which participate in this initiative. In the absence of the CTBT's entry into force, unilateral declarations could be an effective way for States to commit themselves through acts where they unilaterally undertake the obligation against nuclear testing.

A point of difference with provisional application of CTBT Article I is that, while provisional application requires the procedure of agreement by the "negotiating States", a unilateral declaration does not require this. However, it is important to note that, also in the case of unilateral declaration, the international framework will play an important role. Each State can resort to a unilateral declaration based on its own will, without any international framework. It has its own value, but this may result in a single independent initiative without collective significance. On the other hand, if a group of States promoting this action could coordinate declarations under an international framework, this will generate a stronger and wider impact. This would create an environment in which a greater number of States will join the initiative. Such an international framework will trigger discussion in the States concerned whether they will consider making a unilateral declaration. A growing number of States legally committing themselves not to conduct a nuclear test could contribute to strengthening the normative aspects of the CTBT, as in the case of provisional application of CTBT Article I.

Here, the international framework can take various forms. In contrast to provisional application, there is no requirement for agreement by the "negotiating States". While a UNGA resolution can still be one possible option, a joint statement by like-minded States at the time of the 2019 Article XIV conference can also be a possibility.

As for the scope of States which would be eligible for this measure, a natural choice will be to have this measure open for those States that have ratified the CTBT, as in the case of provisional application of CTBT Article I.

Theoretically, it is also conceivable that those States yet to ratify the Treaty – whether signatory States or non-signatory States – will make such a unilateral declaration. It is noteworthy that some States, including the P5, India, Pakistan and the DPRK, have nuclear test moratoria in place. However, as noted above, nuclear test moratoria are only policy based and fall short of a legally binding commitment. Thus, for those States yet to ratify the Treaty, what is expected is their signing (if they have not yet done so) and ratifying of the Treaty.

Pros A growing number of States legally committing themselves not to conduct nuclear testing could contribute to strengthening the normative aspects of the CTBT, as in the case of provisional application already discussed.

Cons If the proposal fails to gain wide support within a reasonable time, this could be exploited by critics as indicating a lack of commitment to the CTBT. The proponents must be prepared for a strong and sustained campaign to maximise participation.

It would be important to assess whether an initiative for unilateral declarations could cause division among PrepCom Member States.

Likely timeline

An initiative to promote and coordinate unilateral declarations could be launched fairly quickly. The 2019 CTBT Article XIV conference and the UNGA in 2019 can be used to establish the relevant international framework.

7.4. Collective statements against nuclear testing

Co-ordinated statements in support of the nuclear test moratorium as a de facto international norm

What is envisaged here is something similar to the 2014 Joint Ministerial Statement⁵⁸ adopted at the Ministerial Meeting of the Friends of the CTBT, but with a larger group of endorsing States. The 2014 statement was endorsed by 104 CTBT ratifying and signatory States, including the five NPT nuclear-weapon States. Such action by a large group of States could be conducive for the formation of customary international law against nuclear testing. However, one issue with customary international law is how to reach a definitive conclusion that a norm is firmly established. The value of this initiative is whether it can create wider support compared with previous actions such as the 2014 statement. But it seems unlikely this would be supported by the Trump administration.

Pros A statement or series of statements by a large group of States in support of the nuclear test moratorium as a de facto international norm would contribute to the formation of customary international law against nuclear testing.

Cons The significance of its contribution to the formation of customary international is difficult to measure. The prospect of generating wider support compared with previous statement is not promising.

Likely timelines

An initiative to make a collective statement against nuclear testing could be launched fairly quickly. However, as noted, the prospect of generating wider support compared with previous statements is not promising.

8. Other actions to strengthen the Treaty

There are a number of ways to strengthen the Treaty. These can be related to (1) universalization of the Treaty, (2) raising awareness of the Treaty, and (3) enhancing the operational capability of the Treaty.

Universalization of the Treaty strengthens it. Although it is not directly related to entry into force of the Treaty, increasing the number of signatory States and ratifying States would undoubtedly enhance the standing of the Treaty and would also be conducive to the formation of customary international law against nuclear testing. From this standpoint, it is welcomed that since the beginning of 2018, Tuvalu has signed the Treaty, and Thailand and Zimbabwe have ratified the Treaty.

Raising awareness is another important dimension to advance the Treaty. Many efforts have been made for this purpose. Such high-level meetings as Article XIV conferences or Ministerial Meetings of the Friends of the CTBT serve for this purpose. The Provisional Technical Secretariat has taken various initiatives. Amongst other things, the initiatives of the CTBTO Youth Group and the Group of Eminent Persons (GEM) are noteworthy.

Enhancing operational capability can also enhance the Treaty. Further development of the IMS clearly advances the capability of the Treaty. There are a number of actions States could take to strengthen the Treaty by enhancing operational preparedness for entry into force, but which would not necessarily involve formal decisions on provisional application or require PrepCom

⁵⁸. See References.

decisions. For example, interested States could provide the PrepCom with the additional funding needed to operate the IDC on a 24 hours/7 days a week basis.

Another example is for National Data Centres (NDCs) to work together to systematically review and clarify all events above a certain interest-level threshold. A mechanism of this kind could add rigour to the idea of global monitoring and would help to refine future verification capabilities. Here, it is noted that the German NDC has been coordinating international Preparedness Exercises since 2007 and welcomes additional partners in this effort.⁵⁹

Another area that States could consider on a voluntary basis is collaboration on verification processes that are not yet in operation. Reference has been made to OSI exercises; in addition, States could consider what practical collaboration they could undertake for the development of consultation and clarification processes and confidence-building measures.

There is a specific opportunity to apply OSI in the case of the DPRK's test site which it has undertaken to dismantle. As mentioned earlier, acceptance of CTBT inspections should be included in the denuclearisation negotiations. Such inspections would enhance the standing of the CTBT and the PrepCom.

States could consider how they could encourage and assist States that have signed but not yet ratified the CTBT, and States that have not yet signed, to take these steps. Also States could consider how they can assist with the establishment of outstanding IMS stations and facilities. As mentioned earlier, efforts should be made to persuade India to reinstate and proceed with the planned IMS facilities which it withdrew from the Treaty.

9. Conclusions

Regrettably there is no basis for optimism that the eight outstanding ratifications required for the CTBT to enter into force will be achieved in the near term. While this is discouraging, key elements of the Treaty, particularly the IMS, are already in provisional operation, through the activities of the PrepCom and the support of Member States. The Treaty is making a major contribution to disarmament and non-proliferation objectives and to strengthening the international norm against nuclear testing. The level of international support is shown by the number of States that have signed the Treaty (184), the number of these that have also ratified (168), and the number of States hosting IMS facilities (over 85).

The full benefits of the CTBT will not be realised, and its permanence will not be assured, until the Treaty is in force. Every effort is needed to achieve this as soon as possible. The position of the US is key, and efforts to persuade US policy- and law-makers to support ratification should be stepped up.

In view of the likelihood that all eight outstanding ratifications by Annex 2 States will remain unattainable for the foreseeable future, serious consideration should be started of actions to strengthen the normative status of the Treaty before its entry into force. This paper discusses actions for further consideration as summarized below.

Ideas to bring the provisions of the Treaty into force as a whole: There have been ideas about what could be done to bring the provisions of the CTBT as a whole, including its normative aspects, into legal effect without depending on all of the remaining Annex 2 ratifications. These include:

- (a) A new treaty - replicating the existing CTBT but with revised entry into force provisions.

⁵⁹. See also <https://www.ctbto.org/the-organization/workshops-training-and-exercises/archiveprevious-workshops-training-and-exercises/>.

- (b) Treaty amendment – amending the CTBT’s entry into force conditions under Article XIV through adopting a subsequent agreement prior to the CTBT’s entry into force.
- (c) Waiver of Annex 2 – agreeing on a protocol or a resolution by which the ratifying States declare the CTBT is in force.
- (d) Provisional application of the CTBT as a whole – establishing a legal obligation to apply the whole of the Treaty pending its entry into force.

If any of these options are realized, the provisions of the CTBT would have legal force as if the Treaty were entered into force. However, to proceed with these options, it would be politically necessary to have consensus among the ratifying States so as not to undermine the Treaty’s fundamental structure. Under the current situation, it seems unlikely that such a condition will be met. From a practical point of view, the options for bringing the Treaty into force as a whole are risky, and cannot be considered realistic.

Strengthening the norm against nuclear testing: While bringing the CTBT as a whole into force appears as difficult as securing the ratifications of the remaining Annex 2 States, there are also ideas aimed particularly at strengthening the norm against nuclear testing:

- (e) A Security Council resolution under Chapter VII of the UN Charter proscribing all nuclear testing. This would have the advantage of universal application – it would apply to all States, including those that have not ratified or signed the CTBT. However, it is questionable whether the P5 would agree to support such a resolution. In view of the 2018 US Nuclear Posture Review, it seems unlikely the current US administration would support such a resolution.
- (f) Provisional application of CTBT Article I would establish a legally binding obligation to apply Article I – the basic obligations not to carry out any nuclear test and to refrain from encouraging or participating in such a test – among those States willing to do so. A growing number of States acting in association to voluntarily declare the provisional application of the nuclear-test-ban norm could explicitly demonstrate the progressive and tangible expansion of this norm. It also could add to the political pressure on States whose signatures and ratifications remain outstanding. A similar but less structured approach might be possible through unilateral declarations under some international framework.
- (g) Unilateral declarations can create legal obligations for a State if the State makes the declaration publicly and the declaration shows the intention to be legally bound. In the absence of the CTBT’s entry into force, unilateral declarations could be an effective way for States to commit themselves through acts whereby they unilaterally undertake the obligation not to conduct nuclear tests. A group of States promoting this action could coordinate declarations under an international framework. A growing number of States committing themselves not to conduct nuclear testing could contribute to strengthening the normative aspects of the CTBT, as in the case of provisional application mentioned above.
- (h) Collective statements against nuclear testing using the existing international framework, similar to the Joint Ministerial Statement adopted in 2014 at the Seventh Ministerial Meeting of the Friends of the CTBT, which inter alia stated that the nuclear test moratorium has become a de facto international norm. Such action by a large group of States could be conducive for the formation of customary international law against nuclear testing. However, one issue with customary international law is how to reach a definitive conclusion that a norm is firmly established.

The options above vary in terms of normative strength and political feasibility. Generally speaking, normatively strong measures tend to entail more political obstacles, sometimes insurmountable

difficulties, and vice versa. Furthermore, actions of States taken under a more structured framework are normatively stronger than each State acting individually, but greater international coordination is necessary. Therefore, policy-makers should consider what international framework is preferable and at the same time what domestic process is necessary to take steps in accordance with such an international framework; these factors might differ from State to State.

Because, in demonstrating support for a no-testing norm, the behaviour of the NPT nuclear-weapon States and the other nuclear-weapon possessing States is most authoritative, it would be essential to secure the greatest participation possible by these States in any initiative that is taken forward.

Other actions to strengthen the CTBT: The paper discusses a number of practical actions States can take which would strengthen the Treaty.

Essential to avoid division: Whichever actions are adopted, it is essential to avoid creating major divisions among the ratifying and signatory States which could undermine the Treaty's basic structure. Thus it is highly recommended that any action should be carried out through consensus or through voluntary measures by those States which are ready to take such action.

Attachments

1. Status of CTBT – Ratifying States, Signatory States and Non-Signatory States (at 29 March 2019)

- * States hosting IMS facilities (P = planned)
 ** IMS facilities were also planned for India but India withdrew these from the Treaty text

Annex 2 States (total 44)

Algeria	Columbia*	Italy*	Russia*
Argentina*	Congo, DPR [Zaire]	Japan*	Slovakia
Australia*	Egypt* (P)	<i>Korea, DPR</i>	South Africa*
Austria*	Finland*	Korea, Rep*	Spain*
Bangladesh*	France*	Mexico*	Sweden*
Belgium	Germany*	Netherlands	Switzerland*
Brazil*	Hungary	Norway*	Turkey*
Bulgaria	<i>India**</i>	<i>Pakistan* (P)</i>	Ukraine*
Canada*	Indonesia*	Peru*	UK*
Chile*	Iran*	Poland	US*
China*	Israel*	Romania*	Vietnam

Bold: signed and ratified (36) **Normal font:** signed but not ratified (5) **Italics:** not signed (3)

Other States that have signed and ratified (total 132)

Afghanistan	Dominican Republic	Lesotho	Paraguay*
Albania	Ecuador*	Liberia	Philippines*
Andorra	El Salvador	Libya*(P)	Portugal*
Angola	Eritrea	Liechtenstein	Qatar
Antigua and Barbuda	Estonia	Lithuania	Rwanda
Armenia*	Eswatini (Swaziland)	Luxembourg	Saint Kitts and Nevis
Azerbaijan	Ethiopia*	Macedonia	Saint Lucia
Bahamas	Fiji*	Madagascar*	St Vincent and the Grenadines
Bahrain	Gabon*	Malawi	Samoa*
Barbados	Georgia	Malaysia*	San Marino
Belarus	Ghana	Maldives	Senegal*
Belize	Greece*	Mali*	Serbia
Benin	Grenada	Malta	Seychelles
Bolivia*	Guatemala*	Marshall Islands	Sierra Leone

Bosnia and Herzegovina	Guinea	Mauritania*	Singapore
Botswana*	Guinea-Bissau	Micronesia	Slovenia
Brunei	Guyana	Moldova	Sudan
Burkina Faso	Haiti	Monaco	Suriname
Burundi	Holy See	Mongolia*	Tajikistan
Cabo Verde*	Honduras	Montenegro	Tanzania*
Cambodia	Iceland*	Morocco*	Thailand*
Cameroon*	Iraq	Mozambique	Togo
Central African Rep*	Ireland	Myanmar	Trinidad and Tobago
Chad	Jamaica	Namibia*	Tunisia*
Congo, Rep	Jordan*	Nauru	Turkmenistan*
Cook Islands*	Kazakhstan*	New Zealand*	Uganda*
Costa Rica*	Kenya*	Nicaragua	United Arab Emirates
Côte d'Ivoire*	Kiribati*	Niger*	Uruguay
Croatia	Kuwait*	Nigeria	Uzbekistan
Cyprus	Kyrgyzstan*	Niue	Vanuatu
Czech Republic*	Laos	Oman*	Venezuela*
Denmark*	Latvia	Palau*	Zambia*
Djibouti*	Lebanon	Panama*	Zimbabwe*

States that have signed but not yet ratified (total 16)

Annex 2 States (total 5)				
China*	Egypt* (P)	Iran*	Israel*	US*
Other States (total 11)				
Comoros	Nepal*	Sao Tome and Principe	Sri Lanka*	Tuvalu
Equatorial Guinea	Papua New Guinea*	Solomon Islands*	Timor-Leste	Yemen
Gambia				

States that have not yet signed (total 12)

Annex 2 States (total 3)			
India	Pakistan* (P)	Korea, DPR	
Other States (total 9)			
Bhutan	Mauritius	Somalia	Syria
Cuba	Saudi Arabia*	South Sudan	Tonga
Dominica			

Total States

Ratifying States:	36 Annex 2 + 132 others	168
States that have signed but not yet ratified:	5 Annex 2 + 11 others	<u>16</u>
		184
States that have not yet signed:	3 Annex 2 + 9 others	<u>12</u>
Overall number of States:		196

States not fully recognised (not included in above): Kosovo, Palestine

States hosting IMS facilities: total 85 plus 1 non-signatory; 3 planned (including 1 non-signatory)

2. CTBT and PrepCom Resolution Provisions and Current Status⁶⁰

CTBT	PrepCom Resolution	Current Status
<p>Art. I Basic obligations</p> <ul style="list-style-type: none"> ▪ not to carry out nuclear test ▪ to prohibit within jurisdiction ▪ to refrain from encouraging or participating in any nuclear test 		<p>Some argue that for States that have ratified or signed the CTBT, these basic obligations apply through VCLT Art. 18 – <i>not to defeat the object and purpose of the treaty</i>. Others will argue otherwise. Thus, it is disputable.</p>
<p>Art. II Organisation</p> <ul style="list-style-type: none"> ▪ Conference of States Parties ▪ Executive Council ▪ Technical Secretariat and IDC 	<ul style="list-style-type: none"> ▪ Establishes PrepCom to carry out necessary preparations for effective implementation of CTBT (para 1) <ul style="list-style-type: none"> – given legal standing as international organisation (para 7). ▪ PrepCom to establish PTS (para 8(c)). 	<ul style="list-style-type: none"> ▪ PrepCom and PTS are in full operation. ▪ Conference of States Parties and Executive Council cannot be established until EIF.
<p>Art. III National implementation</p> <ul style="list-style-type: none"> ▪ Prohibit testing ▪ Establish National Authority 	<ul style="list-style-type: none"> ▪ PrepCom to facilitate information exchange among signatories (para 18). 	<ul style="list-style-type: none"> ▪ PTS tracks signatory State progress, runs legislation workshops. ▪ Significant encouragement from PrepCom and PTS for States to establish National Data Centres and build expert capacity.
<p>Art. IV Verification - verification regime</p> <ul style="list-style-type: none"> ▪ IMS ▪ Consultation and clarification ▪ OSI ▪ CBMs 	<ul style="list-style-type: none"> ▪ PrepCom to undertake all necessary preparations for operationalization of CTBT <i>verification regime</i> at EIF (para 13) <ul style="list-style-type: none"> – <i>provisional operation</i> of IMS and IDC (para 14) – communications channels for data and reports (Appendix) – prepare OSI operational manual (para 15) – prepare guidelines for CBMs (para 16) – prepare procedures for conduct of consultation and clarification (Appendix) – recommendations on new technologies (Appendix). 	<ul style="list-style-type: none"> ▪ IMS and IDC – 90% established, in provisional operation. ▪ Communications - Global Communications Infrastructure established. ▪ OSI capability 70% complete; ongoing OSI exercise cycle. ▪ CBM guidelines prepared. ▪ Procedures for consultation and clarification have been drafted. ▪ Technology refreshment (updating) is the subject of regular discussion in Working Group B.

⁶⁰. The *PrepCom resolution* refers to the Text attached to the resolution – see footnote 34.

<ul style="list-style-type: none"> ▪ Each SP undertakes to – <ul style="list-style-type: none"> - establish facilities - provide data from national stations in IMS - participate in consultation and clarification - permit OSI - participate in CBMs 		<ul style="list-style-type: none"> ▪ 90% of IMS facilities complete. ▪ Data from large majority of IMS stations provided by States in real time.
<ul style="list-style-type: none"> ▪ TS responsibilities – <ul style="list-style-type: none"> - receive/distribute data - supervise/coordinate IMS and IDC 	<ul style="list-style-type: none"> ▪ PrepCom to supervise/coordinate development, <i>provisional operation</i> and testing of IMS and IDC (para 14). 	<ul style="list-style-type: none"> ▪ IMS and IDC – 90% established, in provisional operation.
<ul style="list-style-type: none"> ▪ Consultation and clarification process – <ul style="list-style-type: none"> - SP to provide clarification to requesting SP - SP may request DG assistance - SP may ask EC to obtain clarification from another SP - SP may request meeting of EC 		<ul style="list-style-type: none"> ▪ Formal consultation and clarification process not possible until EIF.
<ul style="list-style-type: none"> ▪ OSI – <ul style="list-style-type: none"> - SP may request OSI in another SP - requesting SP to present request to EC and DG - DG to request clarification from the other SP - EC to decide on request - conduct of OSI 		<ul style="list-style-type: none"> ▪ Formal OSI process not possible until EIF.
<ul style="list-style-type: none"> ▪ CBMs <ul style="list-style-type: none"> - contribute to resolution of compliance concerns - assist in calibration of stations 	<ul style="list-style-type: none"> ▪ PrepCom to prepare CBM guidelines (para 16). 	<ul style="list-style-type: none"> ▪ Signatories are assisting in calibration where IMS facilities have been established.
Art. V Measures to redress situation and ensure compliance		N/A
Art. VI Settlement of disputes		N/A
Art. VII Amendments		N/A
Art. VIII Review of Treaty		N/A
Art. IX Duration and withdrawal		N/A
Art. XIV EIF		<ul style="list-style-type: none"> ▪ Regular EIF conferences held.

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