

Ten years of CTBT: achievements and challenges ahead

By Michael Crowley, VERTIC Executive Director

Introduction

The two key challenges set to the international community by the United Nations General Assembly's adoption of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) on 10 September 1996 were 1) to ensure that the CTBT is duly ratified by all States Signatories, including the 44 specified States required to do so before the Treaty enters into force, and 2) to support the work of the Provisional Technical Secretariat (PTS) in establishing a verification regime that, by the time of entry into force, is capable of meeting the Treaty's verification requirements. This article will review how far the international community has progressed in meeting these challenges during the past ten years.

International monitoring system: overcoming technical limitations and challenges

Doubts regarding the verifiability of a treaty halting all nuclear explosions were expressed as early as the 1950s, when India's first Prime Minister, Jawaharlal Nehru, and others initially raised the idea of such an agreement. At the time, this was understandable as it was not clear that existing technologies were adequate to detect all underground explosions. In 2001, however, the Independent Commission on the Verifiability of the CTBT, stated that the CTBT could be verified 'with high probability', a conclusion in line with the subsequent US National Academy of Sciences report of 2002.

Indeed, the PTS's progress in overcoming myriad technical, logistical, political and financial hurdles to establish the verification regime has been impressive, with some 75% of stations now installed. Overall the system has proved remarkably accurate, pinpointing seismic events to within 5 kilometers of their epicentres. The system

will continue to become more accurate as new stations come on stream, and as the experts learn to exploit the synergies between various types of International Monitoring System (IMS) data, taking advantage of advances in monitoring and communications technologies and of their experience in testing and developing the system.

The democratization of information

One of the unique features of the CTBT verification system among arms control regimes is the real time provision of compliance-relevant information directly to Member States. All CTBT States Signatories are entitled to receive raw data in real time from the International Data Centre (IDC), or if they prefer, filtered information.

It is promising that an increasing number of States – some 780 institutions in 93 countries – now participate in the provisional operation of the verification regime. The PTS facilitates such involvement by providing the necessary hardware and software to interested States, and undertakes intensive capacity building efforts. The aim is to encourage all States Signatories to take full advantage of this unique data sharing arrangement. VERTIC strongly supports such initiatives and believes that all States that do not currently have national data centres should take advantage of the PTS capacity-building programme to maximize the benefit they receive from the system.

While monitoring the test ban is the core function of the PTS, the data collected by the IMS is of considerable use to civilian and government researchers in their analyses of earthquakes, volcanic eruption forecasting, the location of underwater explosions, sea temperature and climate change monitoring. Tsunami-warning centres receiving real time and continuous

data from the IDC on a trial basis found that their ability to issue warnings would be significantly increased by using this information. The Commission consequently agreed at its 27th plenary session that the IDC should continue to provide the data to them on a long-term basis.

Completion and maintenance challenges

While considerable progress has been made, the IMS is not yet complete. Logistical difficulties and resource limitations have caused delays. A number of Member States have yet to turn on the data stream from the stations built in their countries, while some countries have elected not to allow the PTS to construct stations on their territories. Paradoxically, perhaps, although the IMS is a 'new' system still under construction, many elements of it are already ageing. The first purpose built stations are now eight years old, while some of the auxiliary seismic stations that pre-date the Treaty are more than 20 years old. Many stations operate in harsh and remote environments which exacerbate the problem of system deterioration. The CTBTO should develop effective means to prevent and remedy system degradation as a matter of priority, and it must address the thorny issue of how to finance such repairs and replacements.

On-site inspections

It has proved difficult for the CTBTO to develop and agree effective procedures for on-site inspections (OSI). A number of States remain concerned that such inspections may compromise their national security. However, Working Group B, tasked with drafting the OSI manual (the key document detailing how such inspections will be undertaken), has made progress in reviewing the draft text. The procedures outlined in the draft



manual will be tested during the Integrated Field Exercise (IFE) scheduled for 2008.

Budgetary challenges

The CTBTO's budget has grown from US\$ 27.7 million in 1997 to US\$ 112.5 million agreed for 2007. This four-fold growth is primarily due to the steep rise in the first few years of its existence, reflecting the cost of the rapid growth of the new organization and the high establishment costs of the global verification system. Since 1999, the budget has remained relatively steady when corrected for inflation and, in fact, the growth rate fell to zero per cent in 2003. Furthermore, it can be assumed that the costs of maintaining the system are likely to drop when the IMS is operational and its cost-effectiveness is optimized.

Approximately 90-97% of the CTBTO budget is collected annually – an unusually high and encouraging rate for an international organization. However, certain States have on occasion refused to pay their contribution, or have agreed to only fund certain activities, for a variety of reasons. The withholding of funds not only jeopardizes the completion of the IMS on schedule, it also sends a worrying signal that the State withholding funds is less committed to the Treaty and to the organization.

Entry into force: the challenge to the international community

While real and steady progress is being made by the PTS to ensure that the monitoring and verification systems are in place before entry into force, the international community has been less successful in meeting the challenge of bringing the Treaty itself into being. Although 177 States have now signed the Treaty and 138 have ratified it, only 34 of the 44 Annex 2 States required to ratify have done so. Without the ratification of the ten 'hold-out' States – China, Colombia, Egypt, India, Indonesia, Iran, Israel, North Korea, Pakistan and the United States – the CTBT will continue to be a Treaty left in limbo.

Nonetheless, it is important to acknowledge that even in its suspended state, the mere existence of the CTBT has usefully contributed to international nuclear non-proliferation and disarmament efforts by strengthening an effective international norm against nuclear testing. If anyone doubts the importance of the CTBT in this regard, they should consider the situation prior to its development. In the fifty years after the first atomic bomb was detonated some two thousand nuclear test explosions were conducted, primarily by the United States and the Soviet Union, but also by China, France and the United Kingdom. Since the CTBT's adoption in September 1996, none of the NPT nuclear weapon States have conducted nuclear tests nor have any of the other CTBT Signatory States. This global moratorium was however breached in 1998 when both India and Pakistan carried out tests. Both States subsequently declared self-imposed moratoria, to which they have so far adhered.

The most recent breach of the moratorium has, of course, been by North Korea with its 9th October 2006 test. The test broke the moratorium and challenged the norm against nuclear testing that had been gaining in strength over the past decade. The vast majority of the international community rallied to the norm's defence through swift condemnation of North Korea's act, with the Chair of the CTBT Preparatory Commission calling it a threat to international peace and security and urging North Korea to refrain from further testing.

VERTIC believes that the North Korean test must spur Treaty members to redouble their efforts to bring the CTBT into force at the earliest possible opportunity. The debate should encompass all options, even controversial ones. CTBTO Member States have two important opportunities to engage in these discussions in 2007: The bi-annual Article XIV Conference in September and the NPT Preparatory Commission in April and May. Real advances must be made relatively quickly or States' dedication to the comprehensive test ban may wane, most critically that of those nuclear weapon States that have signed the Treaty.

The former US President Bill Clinton observed that the CTBT was "the longest-sought, hardest-fought prize in the history of arms control"¹. It is time now to bring the Treaty fully to life, so that the benefits to international peace and security are completely realized. ■

Biographical note



Michael Crowley joined VERTIC as Executive Director in June 2005, having worked for nearly twenty years on arms control, security and human rights issues, including

at the Omega Foundation, the Arms Trade Treaty (ATT) project at the Arias Foundation in Costa Rica, the British American Security Information Council (BASIC), and Amnesty International. ■

ABOUT VERTIC

The Verification Research, Training and Information Centre (VERTIC) promotes effective and efficient verification as a means of ensuring confidence in the implementation of international agreements and intra-national agreements with international involvement. VERTIC aims to achieve its mission through research, training, dissemination of information, and interaction with the relevant political, diplomatic, technical, scientific, academic and non-governmental communities.

Founded in 1986, VERTIC is an independent, non-profit-making, non-governmental organization. ■

¹ James Bennet: Clinton at U.N. Says "He'll Press Senate on Test Ban Pact", The New York Times, 23 September 1997