

Introduction: the salience and future of verification

Trevor Findlay

THIS VOLUME MARKS the re-launch of VERTIC's *Verification Yearbook* after an absence of two years. For this reason, and to signify the start of a new century, we thought it fitting to publish a special millennial edition that surveys the evolution of verification in various fields over several decades, as opposed to the more traditional approach of analysing a single year. While future versions of the *Yearbook* will revert to the usual pattern, this one should serve as a useful 'baseline' against which events covered in later volumes may be judged.

While examining the past 50 years of verification developments across a number of areas, it soon emerged that the point at which verification became important in each of them differs considerably. The chapters reflect these differences. For example, ever since the term arms control was 'invented' in the 1960s, verification has been a vital consideration in decisions about whether or not to negotiate particular treaties and how to cast them once the decision was made to proceed. In the environmental field, by comparison, treaties that mandate verification are more recent and relatively rare, although that situation is changing as global environmental problems requiring international co-operation become more pressing. In the case of peace agreements, the term 'verification' has tended to be substituted by 'monitoring', which implies a less judgemental undertaking. But even in this field there is increasing realisation that effective verification can improve immeasurably the chances of an agreement being implemented successfully.

This *Yearbook* spans the three areas—arms control and disarmament, the environment and peace agreements—that are at the heart of VERTIC's work. The section on arms control and disarmament covers the verification aspects of all major agreements relating to weapons of mass destruction (nuclear, chemical and biological), as well as conventional armaments. In addition there is a chapter on a

unique disarmament verification mission: the UN Special Commission (UNSCOM) on Iraq. No doubt future editions will look at the work of its successor: the UN Monitoring, Verification and Inspection Commission (UNMOVIC).

The environmental section reflects the focus that VERTIC has maintained for many years on the verification aspects of the 1997 Kyoto Protocol to the 1992 UN Framework Convention on Climate Change. But we have also included a chapter on the monitoring and verification of multilateral environmental agreements generally, in recognition of the growing interest in verification in the field.

With regard to peace accords, the chapters assess two of the most widely known aspects of monitoring and verification: the military and civilian police aspects. This is not to suggest that other elements, such as those pertaining to human rights and elections, are not equally significant. We hope to cover them in future editions of the *Yearbook*.

Finally, the volume ends with a section on verification compliance tools and mechanisms, many of which apply to a range of international agreements.

What is verification?

VERTIC defines verification as the process of gathering, interpreting and using information to make a judgement about parties' compliance or non-compliance with an agreement. The aim of verification is to establish or increase confidence that all parties are implementing a treaty fairly and effectively. Verification achieves this objective by:

- detecting non-compliance;
- deterring parties that might be tempted not to comply; and
- providing compliant parties with the opportunity to demonstrate convincingly their compliance.

Early detection is important so that other parties may be able to take appropriate action, ranging from seeking clarification from the party concerned to imposition of some form of sanction. The latter, at least in theory, may encompass diplomatic measures, economic penalties and military action.

The effectiveness of verification will be determined by several elements and circumstances:

- the monitoring mechanisms, techniques and technologies;

- the credibility of the compliance arrangements; and
- the political environment in which the treaty operates, particularly the amount of political support given to the verification system.

VERTIC is acutely conscious that verification and compliance regimes should be tailor-made for each particular agreement. There is no ‘one-size-fits-all’ model in the verification world. Verification regimes vary in comprehensiveness, sophistication and intrusiveness, as well as in the degree to which they are perceived to be coercive. The gamut runs from the strict enforcement regime with punitive possibilities to an arrangement that gently encourages and assists parties to comply. Clearly, for instance, the Kyoto Protocol is further from the ‘sharp, pointy end’ of verification than the 1990 Conventional Armed Forces in Europe (CFE) Treaty.

A continuing verification revolution?

In 1999 VERTIC held a conference at Wilton Park in the UK to consider the question of whether or not there had been a ‘revolution’ in verification over the past several years. The revolution was seen as comprising a wide range of political, organisational and technological developments, which had increased the salience and power of verification. Sceptics, however, pointed to the fate of UNSCOM, a valiant but doomed effort to verify that Iraq had complied with its legal obligation to destroy its weapons of mass destruction and means of re-acquiring them. Other participants noted the recidivism affecting the policies of major countries towards proposals to emulate, for biological weapons, the intrusive verification system negotiated for the 1992 Chemical Weapons Convention (CWC). Others alleged that verification was an essentially Western construct that a bemused developing world grudgingly accepted in return for increased scientific, technological and financial assistance. Such a trade-off was seen as inherently unstable.

While the meeting was concerned largely with arms control, environmentalists might have decried the poor record even of national self-reporting under many environmental agreements—including the 1946 Whaling Convention and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer—not to mention the absence of co-operative international verification from such accords. Still others, involved with implementing peace agreements, might have drawn attention to the ineffectuality of the Kosovo Verification Mission fielded by the Organisation for Security and Co-operation in Europe in 1998 and of the Indepen-

dent Commission on Decommissioning, established to verify compliance with the disarmament aspects of the 1998 Good Friday Agreement to end the conflict in Northern Ireland.

Yet running counter to these admittedly discouraging facts are other, often little noticed developments, which have amounted to, if not a verification revolution, then at least a rapid accretion of verification capacity and experience worldwide. For example, as a result of the CWC, to which the vast majority of states are now party, most countries are required to establish a National Authority to assist in verifying matters relating to chemical weapons. Even those parties that have had nothing to do with chemical weapons in the past, or do not even have a chemical industry, are required to do so. All these states, many of which will not have had any connection with verification before, much less laid themselves open to on-site inspection, will now at least have some notion of what verification is and have had some contact with an international verification organisation. This is an unprecedented development.

Consider also that the last decade of the twentieth century saw the establishment of two new multilateral verification organisations: the Organization for the Prohibition of Chemical Weapons in The Hague, Netherlands; and the Comprehensive Nuclear Test Ban Treaty Organization in Vienna, Austria. And there is the possibility that a third new one—for verifying the 1972 Biological Weapons Convention—will be created in the near future. As a result of the setting up of these organisations, not to mention the verification arrangements for the CFE treaty, the various US–Russia bilateral nuclear agreements, and the advent of UNSCOM, there has emerged a new and permanent profession: international verifier. In future, entire careers will be devoted to the business of verification.

Industry is also becoming involved in verification, not just as targets for verification activities—as in the case of the nuclear, chemical and biotechnology sectors—but also in researching and producing new verification technology. In the US, nuclear weapon laboratories have increasingly devoted themselves to the challenges of verifying nuclear and other types of arms control, as their nuclear weapons research and development work has declined with the end of the Cold War. In the same vein, the UK commenced, in 2000, a verification research programme at its Atomic Weapons Establishment at Aldermaston.

Its shortcomings aside, UNSCOM's existence and successful operation over several years made a singular contribution to the verification 'revolution'. Apart from its

successor, UNMOVIC, which has yet to become fully operational, it is the only multilateral verification organisation ever established by the Security Council, and the only UN organisation ever mandated to monitor the activities of a single UN member state. Its powers of inspection and level of intrusiveness were previously seen only during military occupation. Given the manner of its demise, it is not clear that there will ever be another case of its kind—its successor is not identical in terms of its mandate, governance or organisational structure. Nonetheless, UNSCOM has established extraordinarily high verification benchmarks. An especially startling aspect was the provision of an American U-2 spy plane to help with its operations. Notwithstanding allegations that the US, and no doubt others, used UNSCOM for their own intelligence gathering purposes, one should not lose sight of the unprecedented degree of intelligence information that states were willing to provide the Commission to facilitate its work. This is being emulated in other treaty regimes.

Turning away from the hyper-publicised UNSCOM, consider the little-remembered 1992 Open Skies Treaty, which permits unheard-of over-flight access—from Vancouver to Vladivostok—for any arms control monitoring purpose. Although not fully in force, the Treaty has the potential to contribute substantially to international stability through the power of transparency.

Another heartening development is the widespread recognition, following the discovery of Iraq's clandestine nuclear weapons programme in the early 1990s, that the International Atomic Energy Agency (IAEA) needed a new philosophy of verification. The Agency's Strengthened Safeguards System (formerly the '93+2' programme), while not perfect, is philosophically and practically light years away from its tame predecessor. The Additional Protocols that are to be attached to states' nuclear safeguards agreements with the Agency, and the IAEA's own attempts to integrate the old and new safeguards systems, are further harbingers of important changes in the verification of nuclear non-proliferation undertakings.

The shift in the national policies of some states toward verification is also encouraging. Few can match the drama associated with former Soviet President Mikhail Gorbachev's sudden agreement to on-site inspections, as part of the 1986 Stockholm Accord on confidence-building initiatives. Yet, not many observers would have predicted a few years ago that China would ultimately agree to the intrusive verification measures provided for in the CWC and the 1996 Comprehensive Nuclear Test Ban Treaty (CTBT)—it has become a party to the first and has signed the second.

And Brazil and Argentina, former nascent nuclear rivals in Latin America, are now inspecting each other's nuclear facilities through their own bilateral verification organisation and are subject to comprehensive IAEA safeguards.

Even non-governmental organisations (NGOs) are entering the verification realm. For the first time, a global consortium of NGOs—Landmine Monitor—is attempting to monitor implementation of a multilateral disarmament treaty: the 1997 Landmine Convention. Moreover, Landmine Monitor is partly funded by some states parties and reports directly to their annual conferences on its view of progress in implementation. Similarly, in the environmental area, NGOs concerned with unabated logging of the world's forests committed themselves in 1997 to monitoring collectively and systematically state compliance with decisions emanating from the Intergovernmental Panel on Forests (IPF). In August 2000, VERTIC established an Independent Commission on the Verifiability of the CTBT, as a contribution to the debate over how best to verify the Treaty and to secure its entry into force as soon as possible.

Finally, the technology revolution that is affecting so many other aspects of human endeavour is having a marked effect on verification. The most significant developments include:

- the data-handling capacities of modern computers;
- the World Wide Web, providing overwhelming amounts of open source data for verification purposes;
- increasingly fine resolution images and other capabilities offered by remote sensing from space;
- communication advances, permitting instantaneous transmission of data from monitoring equipment;
- the invention of increasingly more capable, lightweight and compact detection equipment, such as micro-detectors; and
- the use of virtual reality techniques for training on-site inspectors.

If these developments together do not constitute a verification revolution, then they at least represent large evolutionary leaps in many directions.

Challenges facing verification

Of course, all is not perfect in the world of verification, and VERTIC would be the last to claim that it is. New technology, for instance, can be a double-edged sword,

helping potential and actual treaty violators, as well as verifiers, in often unpredictable ways. Many new technologies are ‘dual use’, equally suitable for peaceful and non-peaceful purposes, thereby complicating the verification task enormously.

Verification can also fail disastrously, bringing the entire enterprise into disrepute. The failure of so-called national technical means of verification—essentially satellites and intelligence gathering—to detect preparations by India and Pakistan for their multiple nuclear tests in 1998, is now legendary. Human cognition can be as much a part of such failures as technology—including our capacity to be lulled by an apparently familiar pattern of events; our unwillingness and/or inability to cope with cognitive dissonance; our inability to interpret mixed political and technical signals; and our lack of creativity in imagining the simplest of evasion tactics.

The case of UNSCOM is instructive. Many lessons have been learned about the difficulty of conducting effective and efficient verification in the face of deliberate, systematic deception and political chicanery. This was demonstrated not only by Iraq, but also, more shockingly, by the UN Security Council’s permanent members, which are supposed to be fully committed to supporting their own resolutions. Unlike UNSCOM, some of the great new verification edifices that are being constructed—for chemical and toxin weapons, for biological weapons, and for the CTBT—remain untested, as does the IAEA’s new safeguards system. We may be building sturdy bulwarks or houses of cards.

In the environmental world, negotiators are still putting together the verification and compliance details for the Kyoto Protocol three years after it was signed. Many environmental agreements have no verification system at all, and those that rely on self-reporting arrangements are often widely disregarded.

In the area of peace accords, the UN still has no concept of operations for monitoring and verifying compliance, including for peacekeeping missions. The deployment of monitors in armed conflict situations is often not a contribution to verification but a substitute for taking the tough decisions necessary to end the fighting. In almost all cases, training in monitoring and verification is either non-existent or superficial and heavily dependent on the military. Nobody seems to be studying systematically the use of new technologies for verifying peace agreements.

In the end, of course, verification will always be work in progress. Since 100% certainty is unlikely in verifying international agreements, particularly when one is trying to prove that a particular event has not taken place or that a capability or object does not exist, the task is endless, as UNSCOM discovered. Ultimately,

verification will always be nested in a political context: after all, it is verification of compliance that is of concern, not verification in a vacuum. Political decisions will always be required once reasonable proof of lack of compliance has been established. The absence of credible compliance measures in most international agreements is emerging as a compelling new verification-related issue, at which this volume takes an initial glimpse.

We hope that this *Yearbook* is the first of many that will track the continuing evolution of verification in a variety of international fields. It is the product of the combined efforts of a large number of talented individuals. VERTIC would like to thank all of the chapter writers, those who commented on drafts and, in particular, Richard Jones, who designed, produced and co-edited the volume. Finally, VERTIC is grateful to the John D. and Catherine T. MacArthur Foundation of Chicago, US—as well as to its other funders—for the financial support that made possible the re-launch of the *Verification Yearbook*.

.....

Dr Trevor Findlay is Executive Director of VERTIC. He was formerly an Australian diplomat and Project Leader on Peacekeeping and Regional Security at the Stockholm International Peace Research Institute (SIPRI) in Sweden. He has a doctorate in international relations from the Australian National University, Canberra, Australia.