different. Signed in 1992, following protracted negotiations over verification, extensive provisions for intrusive verification were agreed.

The principal difficulty over verification of the BTWC is caused by the fact that the activities that would be necessary for the development of an arsenal of offensive biological weapons are virtually identical to legitimate activities in the field of microbiology.[6] Some leading authorities believe that this problem of "dual use" will render it impossible to achieve a satisfactory degree of verification. Others disagree, and advocate the negotiation of a verification protocol. The dangers may escalate as a result of advances in the science of genetic engineering, and the early results of the CBM requesting information exchanges have been disappointing.

It seems clear that verification would be critically dependent on inspections, both at declared sites and with a right of challenge to visit undeclared locations.[7] UNSCOM succeeded in discovering evidence of BTWC transgressions in their inspection of facilities in Iraq. However, it is likely that the means of assuring compliance with the BTWC are going to rely on confidence-building and non-proliferation measures, unless and until a BTWC verification regime is established. If such does occur, the regime will have a considerable task of harmonizing the products of CBMs and non-proliferation measures with those arranged for verification.

Multinational Spaceborne Surveillance

One type of organization that would exploit the capabilities of space surveillance and make it available to states unable to afford the technology for themselves was first proposed by France in 1978, in the form of an International Satellite Monitoring Agency (ISMA), followed in 1988 by the suggestion of a Satellite Image Processing Agency.[8] The Soviet Union proposed an International Monitoring and Verification Agency in 1988. Canada has investigated the possibilities of space surveillance for multinational monitoring of space vehicles (PAXSAT A), or of military deployments in Europe (PAXSAT B). Sweden circulated a proposal in 1988 for a Tellus surveillance satellite, and in 1991 the WEU conceived of a Satellite Data Interpretation Centre for verification of arms control and the monitoring of crises and of the environment.

Technology now permits hugely expensive and highly capable national space surveillance systems (already funded and operating) to provide a multinational centre with some of their data. The information shared with the multinational organization could be degraded in both quality and quantity from the full capability transmitted to the national centres. Analysis could be performed by a multinational staff, with the results reported to either a multinational organization charged with handling non-compliance, or to the United Nations. The same information would be sent to the participating nations. Alternatively, the multinational organization could acquire its own satellites, and perhaps other technical means of data-gathering (multinational technical means), using funds provided by the member states.

If the surveillance was used to contribute to the verification of several different arms control treaties, confidence-building measures, or non-proliferation regimes, there would be a need for harmonization of the scheduling of image collection and distribution. Moreover, if a multinational service is to be available to different

6 Erhard Geissler, "Strengthening the Biological Weapons Convention through Greater Transparency," Chapter 8 in J.B. Poole and R. Guthrie, eds., *Verification Report 1992* (London: VERTIC, 1992), pp. 71-84.

7 Matthew Meselson, Martin Kaplan and Mark Mokulsky, "Verification of Biological and Toxin Weapons Disarmament," Chapter 9 in F. Calogero, M.L. Goldberger, and S.P. Kapitza, eds., *Verification: Monitoring Disarmament* (Boulder, Colorado: Westview, 1991), pp. 149-164.

8 See Caesar Voute, "The Use of Satellites for Verification," Chapter 2 in Frank Barnaby, ed., *A Handbook of Verification Procedures* (London: Macmillan, 1990), pp. 7-36.