

national security purposes. Until recently, the development and use of high-resolution satellite imagery has been largely in the hands of national agencies, because of military or resource management reasons. Nonetheless, it has become an accepted method of intelligence gathering, and many countries recognize the benefit of not interfering with the gathering of satellite intelligence by other countries.

In the last few years, high resolution satellite imagery has become available on a commercial basis. France made imagery with 10-metre resolution available in 1986. Russia began to supply selective 2-metre resolution images in 1991, by optically degrading its original data. India launched a satellite with 6-metre resolution in the early 1990s. In the face of this increasing commercial competition, the US authorized the commercial sale of 1-metre resolution imagery in 1994. The US has licensed four companies to provide such imagery, and they are expected to begin operations over the next few years. The new generation of satellites and sensors should provide imagery in near real time.¹⁷ As a measure of how quickly this field is developing, Microsoft recently began offering Russian satellite imagery with 2-metre resolution over the Internet, in conjunction with Carterra and Russian interests. The price is in the range of \$25 per image, at least 40 times cheaper than has been available till now.

In the years leading up to the agreement on the CTBT, it seemed that satellite imagery could be one of the technologies used to monitor compliance with the Treaty. For a number of reasons, this did not materialize. One obstacle was that most of the high quality data, along with the skills to process and analyze the large amounts of information involved, remained with national agencies, in most cases linked to national security interests. They tended to guard closely their data and the means for gathering it, while being prepared to make the results available under certain circumstances. They did not want to become arbiters, on the basis of their data and interpretation, of international disputes. Similarly, other countries did not want to depend on data provided by only a few advanced countries.

The possibility of having the CTBTO put up its own system was estimated to be prohibitively expensive. A remote-sensing satellite can cost \$500 million and the launching another \$100 million.¹⁸ Ground stations and analytical capability will add to the cost. Thus commercial imagery might be a much cheaper option. Images covering a few tens of kilometres on each side will cost a few thousand dollars each (although, internet dissemination may lower the cost considerably). This is cheap, if the area to be monitored is small and its location known. However, the total cost can add up if large areas are monitored on a continuing basis. At the time of negotiation of the CTBT, commercial imagery did not appear to offer a viable and cost-effective alternative, although it is making very rapid progress.

A system dedicated to monitoring for an international treaty would have to observe strict protocols regarding equal treatment of States Party. Thus it may need to spend a lot of time and

¹⁷ Baines, 1997; Gupta and Pabian, 1998.

¹⁸ Baines, 1997.