

- SPOT images of a secret facility near Samarra, Iraq allegedly producing chemical weapons.

In January 1986 it was also reported that LANDSAT imagery was being used to monitor Soviet military activities in the Far East. Another interesting press report in August 1986 suggested that SPOT images taken on behalf of a Swedish firm indicated apparent preparation in the Soviet Union for a resumption of underground nuclear testing.

All the above seems to suggest that existing civilian Earth observation satellites could be used to provide information of some relevance to arms control verification. Realistically, however, the resolution and the design of sensors on-board current civilian satellites are unlikely to meet the minimum requirements for verification purposes. Nevertheless, in certain cases such satellite data might conceivably provide the impetus to trigger other fact-finding procedures, including the possibility of on-site inspections, to get more detailed information.

It is unclear at present whether the resolution and coverage of commercial satellites will continue to improve to the point where they will become more effective for arms control verification. Their primary mission

— civilian Earth sensing — may simply not demand such a capability. There is, however, another possibility suggested by the above examples: perhaps the technology developed for civilian Earth observation, or which is currently planned for such satellites, could be adapted for more direct application to arms control verification. This idea is one of the central themes underlying Canada's PAXSAT research.

A Note of Caution

There has sometimes been a tendency to view space-based remote sensors as almost all-seeing — to believe that they can watch everything going on below. Before ending this general discussion of the use of such sensors, it is important to enter a note of caution about the capabilities of these devices: they are unlikely, alone, to constitute a complete solution to all the difficulties of verifying compliance with arms control undertakings. Among the very significant limiting factors to be taken into account when considering the utility of space-based remote sensors are:

- Constraints on resolution capabilities.
- Other obvious sensor limitations, such as their inability to see inside buildings, underground or deep underwater.