4. Present developments in meteorological observation technology will improve radically the possibility to track specific air masses and these can probably be developed into routine operation within a few years, i.e. be operative when the Convention enters into force.

5. Should the monitors detect banned agents in the air, the possible emission site could be determined by meteorological calculations similar to those done when a rise in the level of background radioactivity is detected. Aircraft could be dispatched to collect large air samples from the designated air mass if further confirmation of the results was considered necessary.

6. Delayed verification of chemical warfare agents has been found to be feasible. Sarin and soman could be unambiguously identified from air samples collected on the spot almost two weeks after contamination of the soil. Since sarin is one of the most volatile agents, detection of chemical warfare agents at air monitoring stations might reasonably be confirmed by collecting air samples at the suspect emission site even a few weeks later.

7. The feasibility of monitoring production processes through air samples outside the production premises has been verified. At least chemicals having considerable vapour pressure can be detected by near-site air monitoring. Near-site monitoring may be difficult nevertheless where a hermetic production facility incinerates all exhaust gases and water before release. The feasibility of detecting hidden stockpiles by collecting samples outside the stockpile premises has not been tested. On the other hand, air samples may be very informative when collected during on-site inspections inside the facilities and stockpiles.

Instrumentation for automatic monitoring

8. Ideally, the optimum instrumentation for automatic air monitoring of chemical warfare agents should be reliable, selective, sensitive, low-cost, and, like meteorological sensors, completely automatic. It should also be capable of detecting as many chemical warfare agents as possible in order to be cost-effective and so allow the support of a high density of stations.

9. Mass spectrometry (e.g. a Bruker-Franzen mobile mass spectrometer) is an efficient but quite an expensive analysis method. A relatively low-cost instrumentation, based on high resolution gas chromatography, is sensitive and reliable, though not yet fully automatic. When combined with a technique exploiting adsorbent resin for air sampling and subsequent thermal desorption