

A short description of each type of instruments is included as an annex to this report.

As an illustration of the general suitability and for ease of reference the results of the discussion are also presented in the form of a table (Table 1, page 31 ).

#### 1. Monitoring of known compounds

This task can be performed with all instruments under consideration. The main requirement is previously recorded identification data on each compound to be monitored under the Convention. The task can be performed both in a mobile laboratory and in an off-site laboratory. At present the high resolution MS, MS/MS and NMR instruments are not available for mobile use.

The aim of the analysis is to identify samples for further confirmatory analysis with sophisticated techniques. Accordingly the positive results of the analysis have to be confirmed.

Possible applications in a mobile laboratory are to

- a) reduce the number of samples collected in a theatre of alleged use of CW, or to reduce the number of samples collected during challenge inspections,
- b) monitor the absence of Schedule 1 compounds when verifying their non-production in commercial facilities,
- c) identify declared compounds in a single small-scale facility.

The most appropriate techniques in a mobile laboratory are:

- low resolution MS, e.g. mobile mass spectrometer
- two-channel gas chromatography with Retention Index Monitoring (RIM)
- HPLC combined with enzymatic analysis for detection of nerve agents (incl. unknown ones) and element specific detection.

In an off-site laboratory monitoring of known compounds can be used for screening analyses if previous screening was not performed on-site, to obtain data to help the choice of the sophisticated techniques. For example, <sup>31</sup>P NMR can be used for screening of water samples. MS/MS or HRMS can be used directly