The data base should include chemical shifts and coupling constants and also other important spectral parameters (e.g. line widths). For the central data base, the free induction decay (FID) signal should be stored, when available, to allow reprocessing of spectra. The Group considered it essential to define the accepted reference standards for each nucleus. All recording parameters should be supplied with the spectra.

Other techniques

26. The Group discussed the usefulness and possible data base requirements of thin-layer chromatography, ion mobility spectrometry and super-critical fluid chromatography.

Thin-layer chromatography (TLC). This technique was considered as potentially useful as a rapid screening method. The standardized Rf-values of the chemicals can be stored in the data base.

Ion mobility spectrometry (IMS). IMS systems are today used for CW agent detectors (e.g. CAM) but can be modified for verification purposes in the future to be used e.g. as a rapid screening method. IMS can be readily modified to detect many chemicals under the Convention.

Super-critical fluid chromatography (SFC). This method was considered potentially useful in the future when the reproducibility problems have been solved.

Non-destructive measurement technology (NDE)

27. **Radiographic methods.** These give visual representations of the inner contents of various munitions, which may limit its application as it may reveal sensitive information. Liquid fills which might indicate a chemical munition can be easily confirmed by radiography. The data obtained are not appropriate for a reference data base.

28. **Acoustic methods.** Acoustic methods, so far in early research stages, would appear to offer potential in verification technology. "Fingerprinting" of authentic items can be used to confirm identity of like items. Since acoustic responses are affected by many parameters, the device needs "calibration" at each time of use with each munition/agent combination. A library of standard acoustic spectra may not be appropriate. However, a library of measured spectra could well be useful in the field.

29. **Neutron methods.** Feasibility studies have demonstrated that elemental composition of munitions fills can be identified by neutron interrogation. As the device, as envisaged, carries out 'ab initio' measurements, there is no need for a standards data base. A data base of measurements could prove useful.

2. Knowledge Base (Procedures Manual)

30. Standard operating procedures should be developed for e.g.