

III. Technical evaluation of the use of specialized information-gathering systems (black boxes) as components of a CW verification system

Owing to the technical limitation of present-day specialized systems (black boxes) for the gathering of information on chemical processes and installations, it would be helpful if as many countries as possible took part in the planning and the development of suitable sensors for chemical verification, so that the latter can in the near future and in very specialized cases replace on-site inspections.

The "black box" might be defined as "a system capable of capturing and displaying with specified precision and reliability data for the verification of compliance with a chemical weapons convention".

Defining the desired levels of data precision and system reliability is a prerequisite for implementing the projects appropriate to each specific case considered in the convention and for determining the type of sensors and degree of redundancy necessary for their implementation.

IV. Elaboration of methods for the protection and monitoring of the environment during the destruction of chemical weapons; planning of destruction

The contamination of the environment during the destruction of the stockpiles and arsenals of chemical weapons depends:

- On the constituents to be destroyed;
- On the method selected;
- On the location of the destruction in space and time.

Whatever the method selected, it has its price and produces a polluting discharge. It would, therefore, be helpful to use a model to evaluate the alternatives, linking their selection to the various types of contamination existing and produced in the environment and the limits established as permissible maximum.

By reason of their nature, the emissions produced as a result of the various forms of human activity disperse in the atmosphere in a form mainly determined by meteorological factors. The resulting air composition or "air quality" is harmful above certain limits for the elements of the local ecosystem. Atmospheric pollution simulation models link the following three concepts:

The emissions existing in an area can be assessed by means of emission factors, which relate to the quantity of pollutant emitted to an index based on the type of activity in the area, amount of fuel burned, etc., like the indices prepared by the United States Environmental Protection Agency.

The typical meteorological situation in each basic time period and area is estimated by means of a statistical analysis of the recorded meteorological data and is shown as an n-dimensional probability matrix.