Mobile Gamma Spectrometry with Remote Data Analysis

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Abstract

There are several devices on the market designed for the detection and identification of a radiation source. The widely used approach for this is to use sensitive scintillation or semiconductor detectors together with software algorithms to get the alarms on-site in real time. The devices may be used in covert operations during major public events such as in international sports events or at political meetings. The screening and surveys are prone to false alarms due to the variability of the natural radiation or to legal radiation sources such as patients who have received radioisotope treatment recently. The correct interpretation of the spectrometric signal is a task of a nuclear specialist; every instrument user is not expected to have such knowledge, and therefore, there is a substantial risk to misinterpret the result given by the instrument. The consequences of a false alarm can be dramatic, and therefore, from the operational point of view correct alarm handling is a key capability.

Environics Oy has commercialized the measurement and an analysis concept developed by STUK (Radiation and Nuclear Safety Authority in Finland). This concept includes high performance spectrometric analysis, local and remote data analysis, including wireless online connection to expert systems and expert support allowing multi-user-single-expert (MUSE) operations.

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