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# IMS radionuclide network- a unique machine not yet fully exploited

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The IMS Network of 80 particulate and 40 radioxenon measurement systems is one of its kind in several ways. The global coverage combined with high time resolution contributes to a unique, steadily growing data set available to all CTBT member states.

The requirements of the verification regime, formulated more than 25 years ago, prompted the development of new measurement technologies, such as automated particulate samplers and radioxenon systems. The area of radioxenon detection in particular got a considerable boost, and still remains a very active research area.

However, I believe we just got started on the journey towards an even more effective verification regime. Besides describing the development of the past 25 years, I will try to look into the future and discuss a few topics that I believe will be important in the years to come.

The development has so far mainly been focused on the individual measurement systems, achieving high measurement sensitivity with high reliability. Less effort has been put on optimizing the network as a whole, with the goal to maximize the combined capability to detect, locate and characterize release sources. I am convinced that by viewing the network as a single measurement system, many improvements still can be made, both with respect to measurements as well as data analysis.

Another important remaining task is to identify as many background sources as possible. There are many unexplained detections in the network, and understanding the causes for these is absolutely crucial to the CTBT verification regime.

## Promotional text

**Primary author:** Mr RINGBOM, Anders (Swedish Defence Research Agency (FOI),Stockholm, Sweden)

**Presenter:** Mr RINGBOM, Anders (Swedish Defence Research Agency (FOI),Stockholm, Sweden)

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