



Webinar on the Characterization of Contamination and NORMs with Portable High- Resolution Radionuclide Identification Devices

**Organized by the
IAEA Division of Nuclear Security
and Division of Physical and Chemical Sciences**

Wednesday, 17 November 2021

Scheduled at: 09:00, Vienna (Austria) Time

Duration: 2 hours

Information Sheet

Introduction

When a package¹ emitting radiation is discovered as part of a nuclear security detection activity, additional information is needed in order to determine an appropriate course of action. This includes identification of the radioisotope(s) present and an estimation of their activity. In the field, identification of radioisotopes is most accurately performed using a high purity germanium (HPGe) detector. However, using a HPGe detector to estimate the total activity in case of non-trivial geometries adds complexity to the use and analysis of the detector data, and may require additional software and hardware.

IAEA has conducted a series of webinars on the enhanced use of HPGe nuclear security instruments. The presented topics have nuclear security aspects in terms of possible contamination during the transport of radioactive materials, their storage, local accidents, as well as potential misuse of Naturally Occurring Radioactive Materials (NORM). Specific characterization cases have different approaches in measurement with respect to geometry and distribution of radioactivity.

[Previous webinars](#) provided an overview of general approaches to estimate activity in a general container containing radioactive material, and determine the uncertainty in the estimation, as well as conduct analysis using an example of open-source gamma spectroscopy software ([InterSpec](#)).

This follow-on webinar will focus on measurements of field contamination caused by artificial radionuclides or the characterization of areas with excessive concentration of NORMs, including demonstration of activity estimation for radioactive contamination caused by man-made radionuclides, and characterization of areas with high concentration of NORMs.

Objectives

The objective of the webinar is to provide an overview of the approach for measurements of terrestrial contamination and characterization of NORMs with portable HPGe detectors.

Target Audience

This webinar is aimed at expert organizations, policy makers, and front-line organizations involved in the specification, procurement, and use of portable high-resolution gamma radiation detectors.

Working Language

English

Registration

Please register for the webinar using [this link](#) not later than **16 November 2021**.

¹ For the purposes of this webinar, package will be defined as an object ranging in size from a small envelope up to a Unit Load Device (ULD) used to carry cargo in an airplane.

After the registration and acceptance of your participation, you will receive an electronic mail containing information on how to access the webinar by following a hyperlink to join the Webex meeting or calling in by phone.

For additional help regarding registration, please contact Mr Charles Massey, Division of Nuclear Security (DST@iaea.org) and Ms Lai Peng (L.Peng@iaea.org), Division of Nuclear Security.

Webinar Programme

Introduction

Mr Charles Massey, *Nuclear Security Officer, Nuclear Security of Materials Outside Regulatory Control Section, Division of Nuclear Security, IAEA*

Overview of In-Situ Objects and Contamination Measurement

Mr Petr Sladek, *Nuclear Instrumentation Specialist, Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Science, IAEA*

Characterization of Contamination and NORMs with Portable High-Resolution Radionuclide Identification Devices

Ms Lucie Fiserova, *Consultant, Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Sciences, IAEA*

Mr Branislav Stribnsky, *Consultant, Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Sciences, IAEA*

Q&A

Short Break

Demonstration Measurement Results – 3 Case Studies

Ms Lucie Fiserova, *Consultant, Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Sciences, IAEA*

Mr Branislav Stribnsky, *Consultant, Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Sciences, IAEA*

Mr Milan Matos, *Senior Laboratory Technician (Nuclear Science), Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Sciences, IAEA*

Q&A - Discussion on Case Studies

Introduction to the Technical Meeting on Enhanced Use of Portable HPGe detectors

TBD, China's State Nuclear Security Technology Center (SNSTC)

Conclusions