



## Workshop on Scanning the Horizon: Novel Techniques and Methods for Safeguards

**21-24 January 2014**

Venue:	“M” Building Conference Center, Press Room Vienna International Centre – Wagramer Strasse 5, P. O. Box 100, A-1400 Vienna, Austria		
Organizer:	IAEA Department of Safeguards, Division of Concepts and Planning		
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### Background and Purpose

The recently published Department of Safeguards Long-Term R&D Plan 2012-2023 identifies issues and challenges facing the Department today and issues with the potential to confront the Department in the longer term. We expect there could be R&D efforts in other fields or specialties that have the potential to help improve the effectiveness and efficiency of safeguards.

The purpose of this workshop is to ensure a better IAEA awareness of previously unknown-to-safeguards cutting-edge R&D activities that could benefit the work of safeguards, as well as a better awareness of techniques and methods currently deployed in other specialties that could be readily adapted for safeguards implementation. The Workshop will enhance the Department’s capabilities in methods and techniques by invigorating contacts with R&D experts in a wide range of scientific and engineering disciplines.

### Outcome

The desired outcome of the Workshop is a better Departmental awareness of R&D activities taking place outside the IAEA safeguards community that could benefit the work of the Department of Safeguards. The Workshop’s findings can also be used to inform decisions in the R&D planning process, including new Member States Support Programme tasks.

## Topics for Consideration

- Survey of Member States' R&D not currently applied in safeguards
- Technology foresight, including assessment and prioritization
- Early detection of nuclear activities
- Optimizing the use of operators' process data
- Getting more from the analysis of a variety of data

### Call for Nominations for Speakers

- Member States are invited to suggest speakers who are at the leading-edge in their field and perform development and/or research that might find application in safeguards verification activities in the longer term.
- Up to a 400-word abstract and the speaker's CV should be submitted as part of the nomination.
- **Key Deadlines**

10 September 2013	Deadline for speaker ideas (Submission of Nominations)
10 October 2013	Invitation letters sent to selected speakers
10 December 2013	Deadline for submission of presentations to IAEA
21 January 2014	Workshop begins

### Presentations and Language

Invited speakers will make presentations aimed at informing the Department of Safeguards regarding R&D, currently under way or proposed, which has potential to improve the effectiveness and efficiency of safeguards implementation.

No written papers are required but a longer abstract (up to five pages), a list of references and the presentation slides should be submitted by December 10. Copies of power point presentations will be made available to participants during the Workshop.



**Participation and Nominations**

There is no registration fee; external speakers will attend the workshop at their own expense.

Using the following nomination format, interested parties are invited to submit nominations for consideration before 10 September 2013.

**Typed** nominations should be sent to the following:

foresight2014@iaea.org

Speakers Nomination Format (please submit in a MS Word file):

- Name, Affiliation, State
- Title of proposed presentation
- Short summary of presentation (up to 400 word Abstract)
- Author's CV (up to 200 words)
- List of bibliographic references (up to 25)

## Elaboration of topics for the Workshop:

- Survey of Member States' R&D **not** currently applied in safeguards
  - ◊ *Survey of R&D activities in States, laboratories, industry and universities not currently in the safeguards toolkit but with potential to be useful to the IAEA*
  - ◊ *Monitoring of the longer term possibilities – e.g. Google glass, lab on a chip, nanotechnology, lasers, intense neutron sources, hand held devices, etc.*
  - ◊ *Information security*
  - ◊ *Communication security (e.g. remote voice, electronic file and database access)*
- Technology foresight, including assessment and prioritization
  - ◊ *How to assess and prioritize possible technology towards productive implementation in safeguards*
  - ◊ *Methodologies and tools to assess a large number of R&D activities potentially of interest*
  - ◊ *Methods to identify new areas of interest in R&D, including methodology enhancements*
  - ◊ *Methods to interact efficiently with other fields of business – e.g. space or aerospace industry, car manufacturers, traffic cameras, ..., how to get results*
- Early detection of nuclear activities
  - ◊ *Reaching beyond radiation detection*
  - ◊ *Other signatures and indicators*
  - ◊ *Methodology issues, from concepts and approaches to data reduction and analysis*
  - ◊ *Picking relatively small signals out of normal background activities*
- Optimizing the use of the operators' process data
  - ◊ *Opportunities/ideas for using facility operations and control data, and the selection of the subset of data that is of interest to safeguards*
  - ◊ *How to address methodology (safeguards approaches and data analysis) and privacy / security issues (operator, State and IAEA)*
  - ◊ *What degree of authentication is necessary for data from several facility sensors*
- Getting more from the analysis of a variety of data
  - ◊ *Automated review tools, managing (acquiring, storing, handling and processing) large data sets, satellite imagery, digital data, text data, NDA and DA analytical results, regions of interest, errors and uncertainties, trainable tools, video zoom, answer neutral search tools, incomplete data sets, etc.*
  - ◊ *Can commercial off the shelf (COTS) be part of the solution*
  - ◊ *How to share realistic data sets with developers*