



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

**Symposium on International Safeguards:
Reflecting on the Past and Anticipating the Future**

IAEA Headquarters

Vienna, Austria

31 October to 4 November 2022

**Organized by the
International Atomic Energy Agency (IAEA)**

Announcement and Call for Papers

A. Background

International Atomic Energy Agency (IAEA) safeguards are a fundamental component of the nuclear non-proliferation regime. The cornerstone of that regime, the Treaty on the Non-proliferation of Nuclear Weapons (NPT), has helped stem nuclear proliferation for more than five decades. IAEA safeguards promote greater confidence at the State, regional and international levels by providing assurances that States are complying with their safeguards obligations in fulfillment of their obligations under the NPT and other non-proliferation commitments. In so doing, IAEA safeguards also contribute to strengthening collective security and help to create an environment conducive to nuclear cooperation.

Year 2022 is a special one for the global safeguards community, with important anniversaries marking 60 years of IAEA inspections, 50 years of comprehensive safeguards agreements (CSAs), as well as 25 years of additional protocols (AP). The past decades have witnessed developments with significant impacts on the nuclear non-proliferation regime and on IAEA safeguards. Adaptation has been key to success. These anniversaries offer a unique moment of reflection, on what has been achieved and what remains to be done. Year 2022 is also an opportune time for envisioning the decades ahead and the future we aspire to create.

The IAEA holds a Symposium on International Safeguards every four years. The previous Symposium, held under the theme ‘Building Future Safeguards Capabilities’ in 2018, looked ahead to emerging technologies and innovation with potential to transform safeguards work, and the partnerships needed to apply advancements toward safeguards needs. Based on participants’ insights, the 2018 Symposium offered a set of [seven ideas for potential action](#) for the safeguards community at large. The 2022 Symposium will examine progress made towards them.

B. Purpose and Objectives

The purpose of this event is to bring together global stakeholders in support of IAEA safeguards. It is an opportunity for Member State safeguards regulatory authorities, the research and development (R&D) community, industry and civil society to identify challenges and opportunities for IAEA safeguards, showcase research, share ideas, and build partnerships.

The theme of the 2022 Safeguards Symposium is ‘Reflecting on the Past and Anticipating the Future’. The objectives of the 2022 Symposium are to:

- *Reflect* — celebrate the historic anniversaries and achievements thus far, building common understanding of experience gained and key milestones that have shaped safeguards, and reflecting on experience gained and lessons learned over the course of decades of safeguards implementation and on where we are today;
- *Anticipate* — anticipating nuclear energy’s role in addressing global challenges, envisage how the IAEA’s operating environment will likely evolve over the coming decades, and identify what this means for safeguards in the form of both new challenges and opportunities; and
- *Inspire* — based on lessons from the past and insights about the future, identify actions to take and stakeholders and partnerships to support them, towards ensuring a safeguards system that is well prepared for continued success in the decades ahead.

C. Themes and Topics

The Symposium themes will be aligned with the objectives listed above: to reflect, to anticipate, and to inspire. Topics of interest include:

Evolution of safeguards to date

The sessions under this theme will feature retrospectives on all aspects of safeguards, considering the evolutions and achievements that led to the safeguards of today, experience gained and lessons learned, and taking stock of challenges that remain. Topics of interest include:

- Key events and insights from the past that have shaped the safeguards of today
- 50 years of comprehensive safeguards agreements; the evolution of safeguards from facility-focus to State-as-a-whole, from the perspective of the IAEA (State evaluation, drawing of conclusions, effectiveness evaluation, reporting, etc.) as well as States (SSACs, reporting, cooperation with the IAEA, etc.)
- 25 years of additional protocols; progress and experience in concluding and implementing APs
- More than 15 years of modified Small Quantities Protocols (SQPs); the importance of amending or rescinding the original SQPs
- 30 years of efforts to strengthen safeguards; lessons learned and what remains to be done
- 60 years of IAEA inspections; changes in inspections over the decades
- Advancements made in safeguards approaches, cooperation, technology, methods, tools and competencies.

Addressing contemporary challenges

The sessions under this theme will examine recent developments and challenges to safeguards implementation, reflecting on current state of affairs and exploring solutions. Topics of interest include:

- Safeguards implementation during COVID-19; success stories of IAEA-State cooperation, changing work practices, and lessons learned for business continuity and organizational resiliency
- Addressing proliferation risks in a globalized world
- Addressing the four Vs of information (the volume, variety, velocity, and veracity of information) and keeping safeguards information secure
- Evaluating the absence of undeclared nuclear material and activities – through the lens of policy, practice, information, science and technology
- Verifying decommissioning activities, spent fuel transfer campaigns and long-term disposition of spent fuel and waste
- Anticipating workloads and increasing efficiency in safeguards implementation
- Identifying good practices and incremental enhancements to safeguards implementation and extending their application for mutual benefit
- Communicating effectively on safeguards; explaining the Agency's safeguards mission and reporting safeguards conclusions and trends.

Anticipating and preparing for a changing landscape

The sessions under this theme will look farther ahead, anticipating how the future landscape may look in the decades ahead, and considering how safeguards may need to adapt and continue to evolve. Topics on interest include:

- Future operating environment in 2050; scenarios for how the nuclear landscape may evolve in the next fifty years, in terms of stakeholders, technology, trade and the policy environment

- The most impactful drivers of change; the future of nuclear energy in meeting global energy demand, new types of nuclear fuel cycles and facilities (e.g. advanced reactors and SMRs), and nuclear industry operating models
- Transformative technological advancements such as artificial intelligence (e.g. smart devices), automation (autonomous vehicles) and ubiquitous robotics, all with significant impact on societies
- Possible risks arising from the non-nuclear technologies (e.g. additive manufacturing, quantum computing, the dark web)
- Implications for safeguards concepts, approaches, technologies and competencies.

Leveraging innovations for safeguards applications

The sessions under this theme will build upon insights gained at the [2018 Symposium](#) and 2017 and 2020 [Emerging Technologies Workshops](#) organized by the Department of Safeguards, and the research and workshops organized by the broader safeguards community, to bring promising advances into the safeguards realm. Topics of interest include:

- Application of artificial intelligence (AI) and machine learning (ML) for safeguards surveillance information, object identification, processing and analysis, process monitoring and other safeguards applications
- Advancements in data science for improving capabilities for the analysis, integration and visualization of safeguards data from different sources and increasing ‘signal to noise’ ratio
- Leveraging multi-media, multi-lingual data for identifying safeguards relevant information
- Introduction of distributed ledger technology applications to e.g. transit matching, nuclear material accountancy, and spent fuel disposition
- Advancements in geospatial, space-borne and other sensors, and the coupling of AI/ML with these technologies for e.g. change detection
- The potential of leveraging improved connectivity, speed and bandwidth for data transmission
- The application of robotics and other intelligent automation technologies for safeguards
- Mechanisms for bringing innovation into practice in the safeguards community.

Engaging people and expanding partnerships

The sessions under this theme will explore ways to better collaborate in safeguards implementation and capacity building, engage and diversify our workforce, deploy the tools that are now part of our repertoire for virtual meetings and training, and extend and leverage our traditional and non-traditional partnerships to address safeguards needs. Topics of interest include:

- Innovations in training and knowledge management
- Role of cognitive behavioural science in learning and analysis
- Diversity and inclusion and effects on organizational performance and safeguards culture
- Building States’ safeguards capacity through training, assistance, peer-to-peer collaboration, and regional networks
- Contributions of Member State Support Programmes over the years, and the increasing role of traditional and non-traditional partners partnerships in the years come
- Verification approaches, methods and tools in different verification regimes; similarities and differences and what we might learn from them
- Intersections with other domains such as export controls and nuclear security
- Engaging the nuclear industry early in the design and planning phase (‘safeguards by design’).

D. Structure

The 2022 Symposium will follow a similar format to 2018, emphasizing interaction and dialogue, the generation of new ideas, and the involvement of industry and experts from domains with emerging

potential roles in safeguards. The topics and themes will be defined in the web-based abstract submission system, INDICO.

A preliminary programme will be made available on the Symposium web page (see Section Q) well in advance of the Symposium. The final programme and the contributed papers will be available upon registration at the Symposium, through the IAEA Conferences and Meetings app.

The Symposium will consist of an opening plenary session, several topical interactive sessions addressing the Symposium themes, and a closing plenary session. Special events are also planned in conjunction with the Symposium: celebrations of the anniversaries; scenario-based experiential events to envision the future; panels focused on diversity and inclusion; networking and recruitment events; and virtual tours of the Safeguards Analytical Laboratories located in Seibersdorf and the Safeguards Equipment Laboratories in the Vienna International Centre.

In order to meet the Symposium's objectives, topical sessions will be designed to facilitate interaction among the participants, with the following notional format:

- Presentations by speakers, followed by question and answer sessions and discussion;
- Panel presentations and discussion;
- Poster sessions, including pre-recorded presentations to be viewed on demand; and
- Facilitated discussions and interactive sessions to stimulate dialogue among participants; identify ideas and solutions; and collect key insights and opportunities for follow-up.

E. Expected Outcomes

The outcome of the Symposium will be a report issued in the first half of 2023, which highlights the key insights and ideas for action. The proceedings, to be placed on the Symposium website, will also provide an important compilation of reflections and forecasting, capturing knowledge and experience across 60 years in the past and many decades into the future.

F. Target Audience

Potential attendees and relevant organizations would include:

- Technical experts (from research institutions, academia and the private sector) in domains currently relevant to safeguards as well as those with potential future relevance;
- Safeguards practitioners in national or regional safeguards authorities, nuclear facilities or other organizations;
- Researchers and academics in fields relevant to the Symposium's technical programme;
- Administrators and teaching/research staff from universities, institutes and research centres;
- Representatives of technical and scientific support organizations, vendors and supplier trade organizations that support verification activities;
- Analysts and researchers from non-governmental organizations, think tanks and civil society;
- The nuclear industry;
- Leaders of national and international organizations that are concerned with topics related to international safeguards;
- Members of professional associations dealing with nuclear issues; and
- Representatives of the next generation of safeguards professionals.

G. Call for Papers

Contributions on the topics listed in Section C are welcome as oral or poster presentations. All submissions, apart from invited papers, must present original work, which has not been published elsewhere.

G.1. Submission of Abstracts

Anyone wishing to submit a paper to the Symposium is requested to submit first an abstract of not more than 300 words. The abstract should give enough information on the contents of the proposed paper to enable the Programme Committee to evaluate it. Authors should state to which of the topics outlined in Section C their contribution relates.

Abstracts should give enough information on the content of the proposed paper to enable the Programme Committee to evaluate it. Anyone wishing to present at the conference must submit an abstract in electronic format using the Symposium's file submission system ([IAEA-INDICO](#)), which is accessible from the Symposium web page (see Section Q) in January 2022. The abstract can be submitted through this system until **31 March 2022**. Specifications for the layout will be available on IAEA-INDICO. The system for electronic submission of abstracts, IAEA-INDICO, is the sole mechanism for submission of contributed abstracts. Authors are encouraged to submit abstracts as early as possible. In addition, the abstracts must be sent electronically to: Safeguards2022@iaea.org. Introductory and general matters should not be included.

In addition, authors must register online using the InTouch+ platform (see Section H). The online registration together with the auto-generated Participation Form (Form A) and Form for Submission of a Paper (Form B) must reach the IAEA no later than **31 March 2022**.

IMPORTANT: The Programme Committee will consider uploaded abstracts only if these two forms have been received by the IAEA through the established official channels (see Section H).

G.2. Acceptance of papers for oral or poster presentation

The abstract will be considered only if the Participation Form (Form A) and Form for Submission of a Paper (Form B) have been received by the above-mentioned deadline and through the established official channels.

A limited number of abstracts will be selected for oral (slides) or poster (pre-recorded narration of a digital poster) presentation. Authors of all accepted abstracts are requested to submit full papers, not longer than four to eight pages.

Oral presentations should be delivered during the sessions of the Symposium using slides, and will be limited to 15 minutes. Posters should be pre-recorded narrations and may take the form of a narrated power point presentation or a multimedia presentation and are limited to 7 minutes.

Authors will be notified by **27 May 2022** as to whether their abstracts have been accepted and, if so, whether the full papers should be delivered as oral or poster presentations.

Authors will be asked to provide their paper (a maximum of four to eight pages) by **31 August 2022**. Guidelines and a template for the preparation and submission of full papers will be provided on the Symposium web page and INDICO system. The papers will be available to all participants on the IAEA Meetings and Conferences app and on the Symposium web page.

The Secretariat reserves the right to exclude abstracts or papers that do not comply with its quality standards or that do not apply to one of the topics outlined in Section C above and elaborated more specifically in the INDICO system.

G.3. Proceedings

Following the Symposium, the IAEA will publish the papers and summary report on the Symposium webpage.

H. Participation and Registration

All persons wishing to participate in the event must be designated by an IAEA Member State or should be member of an organization that has been invited to attend. The list of IAEA Member States and invited organizations is available on the event web page (see Section Q).

Registration through the InTouch+ platform:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):

- Persons with an existing NUCLEUS account can [sign in here](#) with their username and password;
- Persons without an existing NUCLEUS account can [register here](#).

2. Once signed in, prospective participants can use the InTouch+ platform to:

- Complete or update their personal details under ‘Basic Profile’ (if no financial support is requested) or under ‘Complete Profile’ (if financial support is requested) and upload the relevant supporting documents;
- Search for the relevant event (**EVT2005412**) under the ‘My Eligible Events’ tab;
- Select the Member State or invited organization they want to represent from the drop-down menu entitled ‘Designating authority’ (if an invited organization is not listed, please contact Conference.Contact-Point@iaea.org);
- If applicable, indicate whether a paper is being submitted and complete the relevant information;
- If applicable, indicate whether financial support is requested and complete the relevant information (this is not applicable to participants from invited organizations);
- Based on the data input, the InTouch+ platform will automatically generate Participation Form (Form A), Form for Submission of a Paper (Form B) and/or Grant Application Form (Form C);
- Submit their application.

Once submitted through the InTouch+ platform, the application together with the auto-generated form(s) will be transmitted automatically to the required authority for approval. If approved, the application together with the form(s) will automatically be sent to the IAEA through the online platform.

NOTE: Should prospective participants wish to submit a paper or request financial support, the application needs to be submitted by the specified deadlines (see Section O).

For additional information on how to apply for an event, please refer to the [InTouch+ Help](#) page. Any other issues or queries related to InTouch+ can be sent to InTouchPlus.Contact-Point@iaea.org.

If it is not possible to submit the application through the InTouch+ platform, prospective participants are requested to contact the IAEA’s Conference Services Section via email: Conference.Contact-Point@iaea.org.

Participants are hereby informed that the personal data they submit will be processed in line with the [Agency’s Personal Data and Privacy Policy](#) and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

I. Expenditures and Grants

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of participants in the Symposium. The IAEA has, however, limited funds at its disposal to help cover the cost of attendance of certain participants. Upon specific request, such assistance may be offered to normally one participant per country, provided that, in the IAEA's view, the participant will make an important contribution to the Symposium.

If participants wish to apply for a grant, they should submit applications to the IAEA using the InTouch+ platform through their competent national authority (see Section H). Participants should ensure that applications for grants are:

1. Submitted by **27 April 2022**;
2. Accompanied by Grant Application Form (Form C); and
3. Accompanied by Participation Form (Form A).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance**.

J. Distribution of Documents

A preliminary and final programme will be made available on the Symposium web page (see Section Q) prior to the start of the conference. The electronic compilation of abstracts will be accessible free of charge to participants registered for the Symposium.

K. Exhibitions

A limited amount of space will be available for commercial vendors' displays/exhibits during the Symposium. Interested parties should contact the Scientific Secretariat by email Safeguards2022@iaea.org by **3 May 2022**.

L. Working Language

The working language of the Symposium will be English. All communications must be sent to the IAEA in English.

M. Venue and Accommodation

The Symposium will be held at the Vienna International Centre (VIC), where the IAEA's Headquarters are located. Participants are advised to arrive at Checkpoint 1/Gate 1 of the VIC one hour before the start of the event on the first day in order to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the VIC premises.

Participants must make their own travel and accommodation arrangements. Hotels offering a reduced rate for participants are listed on <https://www.iaea.org/events>. Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying fees for cancellations, re-bookings and no-shows.

N. Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria as early as three months but not later than four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

For more information, please see the Austria Visa Information document available on <https://www.iaea.org/events>.

O. Key Deadlines and Dates

Submission of abstracts through IAEA-INDICO	31 March 2022
Submission of Form B (together with Form A) through the InTouch+ platform	31 March 2022
Submission of Form C (together with Form A) through the InTouch+ platform	27 April 2022
Notification of acceptance of abstracts for oral or poster presentation	27 May 2022
Submission of accepted full papers (four to eight pages max.)	31 August 2022
Submission of Form A only (no paper submission, no grant request) through the InTouch+ platform	No deadline

P. Symposium Secretariat

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary and correspondence on administrative matters to the IAEA's Conference Services Section.

Q.Symposium Web Page

Please visit the IAEA Symposium www.iaea.org/events/sg-2022 regularly for new information regarding this Symposium.