



Technical Meeting on Digital Technologies to Advance Decommissioning of Nuclear Facilities

IAEA Headquarters Vienna, Austria
and virtual participation via Microsoft Teams

04 - 08 September 2023

Ref. No.: EVT2205220

Information Sheet

Introduction

The typical age profile of global fleets of nuclear facilities is such that many nuclear facilities are likely to be shut down over the next 1-2 decades and require subsequent decommissioning, resulting in increased needs for timely and cost-effective implementation of decommissioning programmes in line with stringent safety standards. In this context, an increasing number of Member States are exploring options for making greater use of new and emerging technologies, such as digitalization and associated technological developments. Use of such technologies may bring a range of benefits:

- Ensuring greater efficiency in the implementation of decommissioning work, making optimal use of available human, financial and technological resources;
- Minimizing radiation exposure of the workforce;
- Facilitating the provision of information to regulatory agencies and the public to improve understanding of decommissioning activities;
- Facilitating the effective transfer of knowledge and experience gained between current and future workforces.

A collaborative project to share experience on the above issues was launched at a Technical Meeting on New and Emerging Technologies to Advance Decommissioning Projects held in August-September 2022 (EVT2103801). Terms of Reference for the new project ('NET4D' – New and Emerging Technologies for Decommissioning) were developed at this meeting and three Working Groups were established for the following areas of collaboration:

- Technologies for conversion of unstructured legacy data into a structured format connected to digital model of facility.
- Emerging technologies for the generation of detailed digital models from Point Cloud data including the use of automated digital tools
- Digital Model selection for variety of different decommissioning challenges during planning and implementation.

A Steering Group comprising the leaders of each Working Group and an overall project Chair has been established to oversee the implementation of the project. The Steering Group met in November 2022 (November 2022, EVT2205462) to finalize the project Terms of Reference.

Objectives

The purpose of the event is to share with Member States the preliminary results of the collaborative project launched in August 2022 on new and emerging digital tools and technologies, used in data management, planning, licensing and implementation of decommissioning.

The event will provide an opportunity for the exchange of information and lessons learned from the practical application in Member States of new and emerging technologies to support decommissioning projects.

Target Audience

Representatives on national and international organizations concerned with this topic are invited to participate in the event, including:

- government officials with policy responsibility for decommissioning and associated waste management;
- managers of regulatory authorities;
- managers of the nuclear facility operating organizations;
- managers and planners from decommissioning organizations/projects;
- researchers such as in universities or research institutions developing the e-tools for capacity building of workers for decommissioning and environmental remediation;
- officials from concerned international organizations.

Topics

Three specific topics are envisaged to be addressed at the outset, though discussion at the meeting will not be limited to these:

1) Digital model selection for variety of different decommissioning challenges during planning and implementation

Scope: to select and apply the most appropriate digital technologies to meet a variety of decommissioning challenges.

Challenge being addressed: new facilities that are being constructed on the site are generally utilizing the latest Building Information Modelling (BIM) methodologies, but these are typically based on a detailed digital model that is generated during the design stage of the project. For legacy facilities such detailed models are not available, so consideration needs to be given to whether a digital model will provide benefits for the decommissioning and waste management and if so, which type of model is suited to which of each type of facility and decommissioning challenge.

2) Technologies for conversion of unstructured legacy data into a structured format connected to digital model of facility

Scope: capturing case studies and lessons learned on the conversion of the unstructured data to structured format by using digital tools. Case studies may include the connection of the data to the facility models and their use for compliance or configuration management.

Challenge being addressed: many older sites have large amounts of legacy unstructured data in various formats. There is currently significant interest on the optimal approaches to management of and extraction of value from legacy data. Progress has been made in this area with the use of methods to extract and structure this data using tools such as artificial intelligence, natural language processing and optical character recognition.

3) Emerging technologies for the generation of detailed digital models from Point Cloud data including the use of automated digital tools

Scope: to select and apply the most appropriate digital technologies to generate detailed digital models from Point Cloud data using of automated processes where possible

Challenge being addressed: there exist a number of emerging technologies e.g., providing capability to model pipework represented on Point Clouds to 3D computer-aided design (CAD) type models. This collaboration area will seek to identify and test a number of these new and emerging technologies by practical application.

Working Language(s)

English

Participation and Registration

All persons wishing to participate in the event have to be designated by an IAEA Member State or should be members of organizations that have been invited to attend.

In order to be designated by an IAEA Member State, participants are requested to send the **Participation Form (Form A)** to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) for onward transmission to the IAEA by **10 July 2022**. Participants who are members of an organization invited to attend are requested to send the **Participation Form (Form A)** through their organization to the IAEA by the above deadline.

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and financial matters.

Expenditures and Grants

No registration fee is charged to participants.

Online participants will not be considered for receipt of financial support.

The IAEA is generally not in a position to bear the travel and other costs of participants in the event. The IAEA has, however, limited funds at its disposal to help meet 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 event.

The application for financial support should be made using the **Grant Application Form (Form C)**, which has to be stamped, signed and submitted by the competent national authority to the IAEA together with the **Participation Form (Form A)** by **10 July 2022**.

Venue

The event will be held at the Vienna International Centre (VIC), where the IAEA's Headquarters are located. Participants must make their own travel and accommodation arrangements.

General information on the VIC and other practical details, such as a list of hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page:

www.iaea.org/events.

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.

Organization

Scientific Secretary

Mr Masahiro Yagi

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Administrative Secretary

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries and correspondence on other matters related to the event to the Administrative Secretary.

Event Web Page

Please visit the following IAEA web page regularly for new information regarding this event:

www.iaea.org/events/evt2205220

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.

Participation Form

Technical Meeting on Digital Technologies to Advance Decommissioning of Nuclear Facilities

Hybrid Event

Virtual participation via Microsoft Teams

4 to 8 September 2023

To be completed by the participant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary, Mr Masahiro Yagi, Division of Nuclear Fuel Cycle and Waste Technology, Department of Nuclear Energy (Email: M.Yagi@iaea.org) and to the Administrative Secretary, Ms Nichola Cannavan, (Email: N.Cannavan@iaea.org).

Participants who are members of an invited organization can submit this form to their organization for subsequent transmission to the IAEA.

Deadline for receipt by IAEA through official channels: 10 July 2023

Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms
Institution:		
Full address:		
Tel. (Fax):		
Email:		
Nationality:	Representing following Member State/non-Member State/entity or invited organization:	

If/as applicable:

Do you intend to submit a paper? Yes No

Would you prefer to present your paper as a poster? Yes No

Title:

I plan to attend virtually: Yes No

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. The IAEA may also use the contact details of Applicants to inform them of the IAEA's scientific and technical publications, or the latest employment opportunities and current open vacancies at the IAEA. These secondary purposes are consistent with the IAEA's mandate.

Form for Submission of a Paper

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IAEA Headquarters Vienna, Austria and virtual participation via Microsoft Teams
4 to 8 September 2023

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Deadline for receipt by IAEA through official channels: 10 July 2023

Title of the paper:		
If applicable: Abstract ID in IAEA-INDICO:		
Family name(s) and first name(s) of all author(s): e.g. Smith, John	Scientific establishment(s) in which the work has been carried out	City/Country
1.		
2.		
3.		
Family name and first name(s) of author presenting the paper: e.g. Smith, John	Mr/Ms:	
Mailing address:		
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Date:

Signature of main author:

Grant Application Form

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Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms:
Mailing address:	Tel.:	
	Fax:	
	Email:	
Date of birth (yyyy/mm/dd):	Nationality:	

1. Education (post-secondary):

Name and place of institution	Field of study	Diploma or Degree	Years attended from to	

2. Recent employment record (starting with your present post):

Name and place of employer/ organization	Title of your position	Type of work	Years attended from to	

3. Description of work performed over the last three years:

4. Institute's/Member State's programme in field of event:

Date: _____ **Signature of applicant:** _____

Date: _____ **Name, signature and stamp of Ministry of Foreign Affairs,
Permanent Mission to the IAEA or National Atomic Energy
Authority**
