A. Background

The characterization of radioactive waste and waste packages plays an important role during the different stages of the predisposal management of radioactive waste. By understanding the characteristics of such waste, it is possible to establish the necessary adjustment, treatment, conditioning or suitability for further handling, processing, transport, storage or disposal. Waste characterization involves all aspects related to the physical, chemical and radiological properties of the waste.

Therefore, the safe management and disposal of radioactive waste is, in part, reliant upon its accurate and quality-assured characterization by non-destructive and destructive methods, and upon determination of the radionuclide inventory. Relevant procedures, standards and laboratory practices have been developed and refined over the years in expert laboratories in those Member States of the International Atomic Energy Agency (IAEA) with mature operating nuclear facilities and laboratories. However, several Member States with less developed programmes do not have such facilities and laboratories. For these countries, establishing fit-for-purpose characterization programmes is a complex technical challenge requiring both intellectual and financial resources.

Over the past decade significant progress has been achieved in the development of waste characterization, control procedures and equipment as a direct response to ever-increasing requirements for quality and reliability of information on waste characteristics. However, some aspects of radioactive
waste characterization remain challenging, such as the estimation of the activity of long lived, difficult-to-measure radionuclides, adequate sampling methodologies, refining the characterization method to achieve more accurate results, the development of scaling factors adapted to the specificity of waste streams, and the characterization of waste for the verification of waste activity before clearance.

This event is being organized by the IAEA as part of the activities planned within the framework of the IAEA’s International Network of Laboratories for Nuclear Waste Characterization (LABONET) in order to increase efficiency in sharing international experience in the application of proven, quality-assured practices for the characterization of radioactive waste and waste packages. The exchange of information and best practices in the operation of characterization laboratories is expected to underpin both public and regulatory confidence in the secure management and responsible storage and disposal of radioactive waste.

**B. Purpose**

The purpose of the event is to share comprehensive state-of-the-art technical information and current guidance on the achievements and challenges related to the characterization of low and intermediate level radioactive waste and waste packages under LABONET.

This meeting will concentrate on the on-going LABONET activities, their status and way forward: Characterization Wiki, Catalogue of Characterization Methodologies for Demonstrating Compliance with Waste Acceptance Criteria and Characterization Handbook.

Participants feedback on the ongoing activities of LABONET and suggestions for new activities, particularly those reflecting the needs of Member States in this area will represent a valuable input in planning the topical activities for the next years.

**C. Scope**

1. Updates on: Characterization Wiki, Catalogue of Characterization Methodologies for Demonstrating Compliance with Waste Acceptance Criteria, Characterization Handbook and planned hands-on-training workshop under TCP. Establishing working groups (WG) for further development of the related work.

2. Roundtable discussion on options and scope of future LABONET Network Meetings for consideration for further development by the Steering Committee.

**D. Meeting format and agenda**

The meeting will be conducted through a series of 3-hour virtual meetings. In total 4 virtual meetings are envisioned, conducted via Microsoft Teams/WebEx.

The meetings will be scheduled as follows (all times are given in local Central European Time, GMT+2):
Monday, 2 August 2021 from 10.00 a.m. to 12.00 p.m.
  o Update on the LABONET home page
  o Update on work performed to complete the Characterization Wiki (within the IAEA OneWiki)
  o Roundtable discussion on the wiki articles to identify the gaps (if any) and editable format

Tuesday, 3 August 2021 from 10.00 a.m. to 12.00 p.m.
  o Updates on Catalogue of Characterization Methodologies for Demonstrating Compliance with Waste Acceptance Criteria
  o Roundtable discussion on the next steps to be conducted to accomplish the work – the target is to develop a comprehensive Wiki article on the topic.

Thursday, 5 August from 10.00 a.m. to 12.00 p.m.
  o Updates on Characterization Handbook
  o Roundtable discussion on the next steps to be conducted to accomplish the work – requirements for publication, format.

Friday, 6 August from 10.00 a.m. to 12.00 p.m.
  o Updates on the planned activities under TC regarding radioactive waste characterization
  o Conclusions.

E. Expected Outputs

The expected output includes sharing international experiences and best practices for the development and implementation of the ongoing and planned activities in characterization of low and intermediate level radioactive waste and waste packages under LABONET network.

Specific desired outputs include:

- Decisions regarding the further development of the ongoing activities and identification of network target activities for the next multi-year cycle;
- Identification of needed support for targeted activities (e.g., working groups)

F. Target Audience

The event is targeted at experts and representatives of laboratories or organizations in Member States who are responsible for the characterization of low and intermediate level waste and waste packages, as well as the members of LABONET Steering Committee.
G. Working language(s)

The working language of the event will be English with no interpretation provided. All communications, reviews and discussion papers must be submitted in English.

H. Venue

The meetings will be conducted virtually via Microsoft Teams/WebEx.

I. IAEA Contacts

Official correspondence regarding technical aspects of the meeting should be addressed to the Scientific Secretary:

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