



# **Technical Meeting on Systems Engineering: Requirement Engineering and Management**

**IAEA Headquarters, Vienna, Austria**  
and virtual participation via Microsoft Teams

**30 September - 3 October 2024**

**Ref. No.: EVT2303679**

## **Information Sheet**

### **Introduction**

Requirements specify the characteristics to be met by the system design. The increased complexity of used technologies, such as the digitalization and the I&C architecture lead to reinforce the importance of precise and appropriate requirement engineering for the nuclear industry. The characteristics of the nuclear engineering add challenges to requirement engineering as systems have to comply with a specific set of safety and security requirements.

Experience in the nuclear power industry and other industries shows that misunderstandings and incoherencies in requirements specification has led to the implementation of systems that do not meet real needs.

These misunderstandings and incoherencies can undermine defense in depth and facilitate the occurrence of potential common cause failures. They can also impact the quality and performance and contribute to a significant increase in costs and delays.

During their 2023 meeting, the Technical Working Group on Nuclear Power Plant Instrumentation and Control (TWG-NPPIC) failed to identify any existing practical and effective guide on the subject.

Recognizing the relevance of the above-mentioned issues, the members of the TWG-NPPIC at their 2023 meeting recommended that the IAEA should develop guidance on the implementation of requirements engineering and management (RE&M) principles in the nuclear power plant instrumentation and control area for its Member States.

In response, the IAEA is developing a new Technical Document (TECDOC) provisionally entitled *Requirement Engineering in the Life Cycle of Instrumentation and Control Systems in Nuclear Power Plants* to share best practices and to provide guidance in this area.

## Objectives

The purpose of the event is to finalize the new IAEA Technical Document entitled *Systems Engineering: Requirement Engineering and Management to strengthen the ability of Member States to perform requirement engineering during the life cycle of instrumentation and control systems*.

## Target Audience

In view of the subject of the event, participation is limited to IAEA Member States that currently operate NPPs or are constructing their first NPP units or embarking on a new nuclear power programme. Participation is solicited from representatives of nuclear facilities and regulatory bodies, utilities, technical support organizations, designers, developers, vendors, and research organizations engaged in the field of I&C design and the application of such systems at NPPs. To ensure maximum effectiveness in the exchange of information, participants should be persons actively involved in the subject matter of the event.

The event is, in principle, open to all officially designated persons. The IAEA, however, reserves the right to limit participation due to limitations imposed by the available facilities. It is therefore recommended that interested persons take the necessary steps to secure their official designation as early as possible.

## Working Language(s)

English

## Structure

The draft manuscript of the new IAEA TECDOC provisionally entitled *Requirement Engineering in the Life Cycle of Instrumentation and Control Systems in Nuclear Power Plants*, will be provided to the participants prior to the event. This draft will serve as the basis for dialogues at the event. Participants will be requested to review selected parts of the document and to provide their remarks and comments.

## Topics

Presentations are invited on key challenges, overall strategy on RE&M. The following list provides examples of presentation topics that would be appropriate for the event:

- Motivations of RE&M in Nuclear facilities
- Challenges and lessons learned related to RE&M;
- Important to plant safety and performance;

- RE&M in the Context of Nuclear Facilities lifecycle;
- Interactions with Systems Engineering;
- Requirements in Different Levels of I&C Design;
- Requirement Attributes, semantics and artefacts associated with requirements;
- Graded approach;
- Generic requirement engineering process
- Verification and Validation, Requirement set completeness;
- Requirements management processes;
- Traceability and compliance assessment;
- Tools for RE&M;
- Quality assurance;
- Lessons learned from experience (case studies, operating experience, proven practices, etc.).

## 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 or invited organization, participants are requested to submit their application via the InTouch+ platform (<https://intouchplus.iaea.org>) to the competent national authority (Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or organization for onward transmission to the IAEA by **31 July 2024**, following the registration procedure in InTouch+:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):
  - Persons with an existing NUCLEUS account can sign in to the platform 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 ‘Complete Profile’ and upload the relevant supporting documents;
  - Search for the relevant event 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 [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org));
  - 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 the Participation Form (Form A) and/or the 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 applicable form(s), will automatically be sent to the IAEA through the online platform.

NOTE: The application for financial support should be made, together with the submission of the application, by **31 July 2024**.

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](mailto:InTouchPlus.Contact-Point@iaea.org).

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

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. Further information can be found in the [Data Processing Notice](#) concerning the IAEA InTouch+ platform.

## **Presentations**

Presentations should be prepared as Microsoft Power Point (ppt) or Portable Document Format (pdf) files. Computer-based projection facilities will be provided. Authors are requested to provide the Scientific Secretary with electronic copies of their presentation files in advance of their scheduled presentation slot so that the files can be duly uploaded. Electronic versions of the presentations are also necessary to ensure timely issuance of the proceedings to be prepared and distributed in electronic form.

It is not mandatory for all participants to submit a presentation. However, the IAEA welcomes and encourages contributions in this format. Time for the presentations will be limited to 25 minutes followed by a 5-minute discussion period.

The abstract of the presentation should be submitted to the Scientific Secretary by **31 July 2024**.

## **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 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, together with the submission of the application, by **31 July 2024**.

## 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:

<https://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.

## Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least 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.

## Additional Information

The event will start on Monday, 30 September 2024, at 9.30 a.m. and end on Thursday, 3 October 2024, at 2.00 p.m.

The event agenda, together with information on local arrangements, will be sent to the designated participants in due course.

General information on hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page: <https://www.iaea.org/events/hotel-list>.

Additionally, participants may elect to make their own bookings at hotels in the area of the event location.

# Organization

## Scientific Secretary

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