



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

Hybrid Event: Technical Meeting on Verification and Validation of Software Related to Nuclear Power Plant Instrumentation and Control

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

19 – 23 October 2026

Ref. No.: EVT2503480

Information Sheet

Introduction

IAEA Technical Reports Series No. 384, titled "*Verification and Validation of Software Related to Nuclear Power Plant Instrumentation and Control*", has been published in 1999. It provides practical guidance on methods for software verification and validation (SW V&V) used in nuclear power plant I&C systems. It covers SW used in safety, safety-related and non-safety applications within nuclear power plants.

Since its original publication in 1999, there have been significant developments in digital technologies, SW engineering practices and instrumentation and control (I&C) systems. Updating the report ensures it reflects current tools, methodologies, and standards.

Regulatory frameworks and safety standards have evolved to address new challenges in digital I&C systems, cybersecurity, and SW reliability. An updated report can align with these changes and provide relevant guidance.

Modern nuclear power plants increasingly rely on digital systems for both safety and non-safety functions. Updated guidance helps ensure robust verification and validation (V&V) practices are applied to these systems.

New operational modes require more sophisticated control systems. Updated SW V&V guidance can support the safe implementation of these capabilities.

Updating the report allows the IAEA to incorporate international experience, lessons learned, and best practices from Member States, promoting harmonization across the nuclear industry.

Recognizing the relevance of the above-mentioned issues, the members of the Technical Working Group on Nuclear Power Plant Instrumentation and Control (TWG-NPPIC) at their 2025 meeting recommended that the IAEA should update the Technical Reports Series No. 384, titled *"Verification and Validation of Software Related to Nuclear Power Plant Instrumentation and Control"* to integrate recent developments in the field and current practices, and discuss innovative technologies.

The outcomes of this event will provide valuable insights into the needs of the Member States in this area.

Objectives

The purpose of the event is to share good practices and lessons learned from SW V&V for I&C technologies in NPPs as well as to identify the emerging trends and to provide a forum for the international exchange of information, experiences, challenges and lessons learned on RE&M of I&C systems in a systems engineering approach. The event will also provide an opportunity to review a draft new revision of Technical Reports Series No. 384, titled *"Verification and Validation of Software Related to Nuclear Power Plant Instrumentation and Control"*.

This event aims to explore the practical applications, challenges, and benefits associated with SW V&V.

By sharing operating experiences and effective practices, this event will provide valuable insights for professionals in the field. Attendees will have the opportunity to engage with experts, explore case studies and discuss strategies to effectively SW V&V.

Ultimately, this event seeks to foster a collaborative environment where knowledge and experiences can be exchanged to drive innovation and improve the reliability and performance of I&C systems paving the way for advanced reactors.

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. 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 in small, medium and large power plants. 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

English.

Structure

The draft manuscript of the new revision of IAEA Technical Reports Series No. 384, titled *"Verification and Validation of Software Related to Nuclear Power Plant Instrumentation and Control"*, 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, effective practices, lessons learned, and broader perspectives related to software V&V. The following list provides illustrative examples of topics suitable for the event:

- Applicable codes and standards;
- V&V standards harmonization;
- V&V processes and strategies;
- Requirements verification;
- Configuration management and version control;
- Quality assurance & oversight;
- V&V methods, techniques and analysis;
- Simulation techniques;
- Tools and supporting infrastructure;
- Independent V&V;
- V&V of software during operation and maintenance;
- V&V for different software;
- V&V for smart devices, HMI;
- V&V for computer security;

- Computer security of V&V;
- V&V challenges in digital modernization projects;
- V&V for new types of reactors;
- Case studies and lessons learned from experience (e.g. completed projects, proven practices);
- Common non-conformances observed in practice;
- Practical challenges and associated mitigation strategies;
- Regulatory perspectives;
- Economics of V&V;
- Advanced and emerging topics in SW V&V (e.g. artificial intelligence, Agile).

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 **15 July 2026**, 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);
 - 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 **15 July 2026**.

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.

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 IAEA InTouch+ platform.

Presentations

Presentations should be prepared as Microsoft PowerPoint (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 the Scientific Secretary by **15 July 2026**.

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 **15 July 2026**.

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.

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, 19 October 2026, at 9.30 a.m. and end on Friday, 23 October 2026, at 4.00 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.

IAEA Contacts

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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.