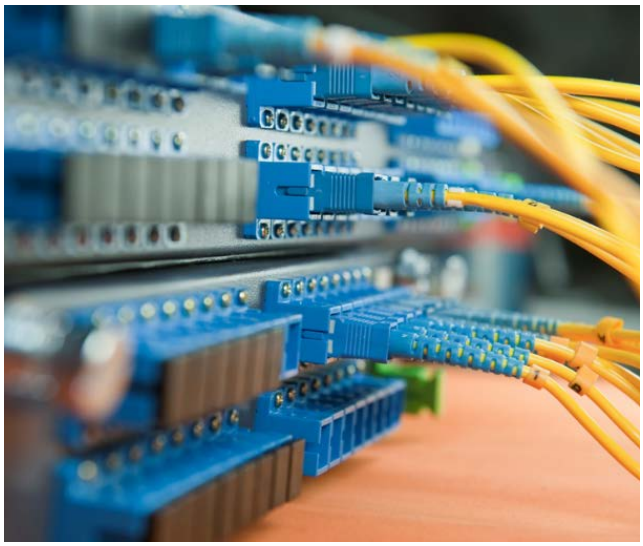
EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Digital Systems Engineering Users Group



Integration of digital control and monitoring technology into nuclear power facilities has lagged behind other industries and hindered the evolution of improved safety and business practices. Adoption of EPRI methodologies can support a sustainable digital systems engineering strategy.

This users group will provide the following benefits:

- Online forum to share digital operating experience (OE) and best practices
- Forum for sharing common digital design packages
- Forum for sharing cyber security evaluations
- Maintenance of EPRI guidelines based on OE and user feedback

Background and Objectives, and New Learning

Over the last several years, EPRI has developed, published, and begun training industry engineering practitioners on a modern systems engineering based methodology for implementing digital technology in control and monitoring applications. This performance-based, risk-informed methodology is comprised of several guidelines that are used in an integrated manner:

- DEG - Digital Engineering Guide
- DRAM - Digital Reliability Analysis Methodology
- TAM - Cyber Security Technical Assessment Methodology
- HAZCADS - Hazards and Consequence Analysis for Digital Systems
- EMCAM - Electromagnetic Compatibility (EMC) Assessment Methodology
- HFAM - Human Factors Analysis Methodology

The Digital Systems Engineering Users Group will create a community and environment where users of these guidelines and the associated training products can share their experiences with one another. The group also will enable users to share common design packages, cyber security assessments, training needs, and other digital engineering output that does not contain third-party IP.

An easy-to-use, online environment hosted by EPRI will facilitate this sharing and allow EPRI staff to interact with group members to collect insights, help solve problems, and compile feedback for revisions to the method guidelines. In addition, the users group will facilitate the timely update of the method guidelines as usage evolves and improvements are identified.

Proposed activities in the 2022–2024 period include:

- Establishing the online sharing and collaboration community
- Completing signup and access for the user base
- Scheduling and conducting biannual users group forum meetings
- Updating and revising the digital system engineering method guidelines periodically
- Moderating the sharing environment to ensure value is achieved
- Curating and summarizing digital OE

Benefits

The interactive community will provide participants with access to focused digital best practices and operational experience, helping to drive continuous improvement in digital technology implementation and business processes.

Access to usable common digital design material as well as other contributed engineering products will improve engineering staff efficiencies, reducing the cost and time required for digital engineering activities. Moreover, by improving overall industry utilization of modern digital technology, new business practices and strategies can be enabled to address the growing complexity of power markets.

Regular, timely updates to the EPRI digital methodologies will ensure EPRI products are aligned with current operational experience, regulatory feedback, and standards advancement.

Project Summary

The Digital Systems Engineering Users Group will provide member value through enhanced information sharing, collective access to digital expertise, and a sustaining mechanism to keep the EPRI digital system engineering methodologies current and aligned with user needs.

Deliverables

1. Participation in Digital Systems Engineering Users Group meetings
2. Access to curated digital OE as contributed by user group members
3. Access to shared engineering products and insights as contributed by users group members
4. Revised and updated EPRI digital methodology guidelines (For non-EPRI members, the methodologies and revisions are available separately at a nominal cost)
5. Participation in an interactive online community to share ideas and insights with fellow digital practitioners
6. Access to EPRI staff for problem solving or information sharing activities.

Price of Project

For participants with operating nuclear units, the price of the users group is based on the number of sites, per the table below:

1 Site	$10,000/yr.
2 Sites	$19,000/yr.
3 Sites	$27,000/yr.
4 Sites	$34,000/yr.
5 Sites	$40,000/yr.
6 Sites	$45,000/yr.
7 or more Sites	$50,000/yr.

Non-utilities (equipment suppliers, engineering services companies, etc.) are priced at $10,000/yr. Participation in the users group requires a three-year commitment.

Project Status and Schedule

The activities planned for this users group will commence in January 2022. Two group meetings will be held in 2022, and continuous OE sharing opportunities will be available throughout the year. The first subscription will run three years (2022–2024), with renewal available.

Who Should Join

Nuclear power plant owners, equipment suppliers, and engineering services companies who are involved in or planning to be involved in implementing digital control and monitoring technology in a current or advanced reactor application.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

Technical Contacts

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