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LIFE AFTER PUBLICATION



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LIFE AFTER PUBLICATION

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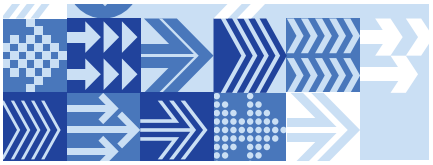
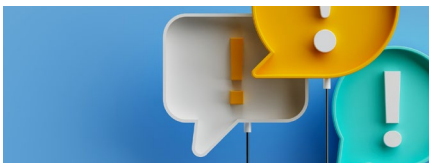
6  FROM CONSENSUS TO IMPACT: THE LIFE OF A STANDARD AFTER PUBLICATION

9  ODE TO A CORRIGENDUM

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BEYOND PUBLICATION: FROM U.S. ADOPTION TO INTERNATIONAL IMPACT

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Publication can feel like the finish line in developing an international standard, but it often marks the beginning of some of the most valuable learning. Once a standard is adopted and used nationally, we can see how its requirements work in our market, where national differences may still be necessary, and what those differences can teach us.

Our IEC adoption work gives us an opportunity to use that experience more intentionally. Some national differences are necessary to address U.S.-specific regulations, practices, or conditions and should remain national. Others may reflect technical solutions, safety considerations, or lessons that could benefit users beyond the U.S. Rather than carrying those differences forward automatically, we should consider whether important requirements should be proposed back into the IEC standard.

The process can work in both directions. By adopting an IEC standard in the U.S., applying it, and understanding why national differences are needed, we can identify lessons worth bringing back into the IEC standards development process. Over time, this can strengthen the international standard, support greater alignment, and potentially reduce the need for some national differences.

THE ADOPTION PROCESS

This feedback cycle is built into UL Standards & Engagement's (ULSE's) current adoption work. The adoption process begins by engaging industry and other affected stakeholders early to confirm there is support for the project, understand market needs, and identify the technical issues that should be addressed from the outset. The project team and technical experts then conduct a structured review of the IEC standard, comparing its requirements with applicable U.S. regulations, codes, installation practices, and market needs to determine whether national differences are necessary. Proposed differences are developed, reviewed with the appropriate harmonization partners, and circulated through ULSE's standards development process for stakeholder input and consensus. This early engagement helps build industry buy-in, brings

practical implementation experience into the work, and creates a stronger foundation for adoption. The review continues through maintenance of the adoption, creating opportunities to reconsider whether a national difference should remain, be revised, or be proposed back to IEC.

U.S. experts serving on the relevant USNC Technical Advisory Group (TAG) are important to this work. Their engagement in the harmonization committee helps connect national adoption experience with the U.S. consensus process, while their participation as experts in the relevant IEC working groups creates a pathway for bringing well-developed proposals and supporting technical rationale forward for international consideration. Because the national adoption follows its own maintenance cycle, stakeholders can raise concerns or suggest revisions as market needs and requirements evolve. The committee then considers whether an issue should be addressed through a national difference or whether the underlying IEC standard would benefit from a change submitted through the appropriate U.S. or Canadian IEC National Committee process.

BRINGING SAFETY STANDARDS ACROSS BORDERS

The adoption of IEC 62368-1 provides a practical example of this approach, from initial review and stakeholder engagement through ongoing maintenance. IEC 62368-1 is the hazard-based safety standard for audio/video, information and communication technology equipment. Because it covers a broad range of electronic products, ULSE and CSA do not develop separate requirements from the ground up. Instead, they adopt the IEC standard, add the national differences needed for the U.S. and Canadian markets, and publish the result as UL/CSA/IEC 62368-1. This joint adoption makes the international standard practical for manufacturers, regulators, testing organizations, and other stakeholders while maintaining a common technical foundation across both countries.

For IEC 62368-1, a technical harmonization committee reviews the IEC text against U.S. and Canadian regulations, codes, and installation practices, with the goal of limiting national differences to those justified by national needs. Proposed differences are then circulated to a broader group of U.S. and Canadian stakeholders through ULSE's and CSA's respective standards development processes and refined until consensus is reached. The fourth edition shows how that review translates into specific national requirements.

For the fourth edition of UL/CSA/IEC 62368-1, key differences include scope clarifications for additive manufacturing and energy storage systems, updates tied to national fire codes, and references to UL 4200A, *Standard for Safety for Products Incorporating Button Batteries or Coin Cell Batteries*, for more stringent coin and button cell battery requirements. The result is an adoption that supports products designed, tested, and regulated for both markets with minimal additional burden, demonstrating how national implementation can strengthen safety without sacrificing simplicity.

HOW STANDARDS BENEFIT IN TURN

The IEC 62841 series provides another example of how this exchange of technical experience can work in practice. Early requirements developed in UL 2575 for *Lithium-Ion Battery Systems for Use in Power Tools and Other Appliances* (now UL 2595) eventually contributed to the battery requirements included in Annex K of IEC 62841-1. That history shows the value of considering national work not only in terms of what is needed for the U.S. market, but also in terms of what may have broader international value. As adoption and maintenance work continues across the IEC 62841 series, we have an opportunity to apply

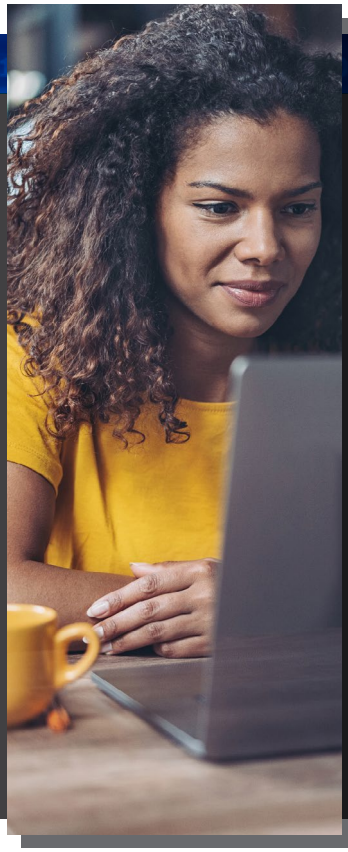
that same thinking to today's national differences and consider whether some should ultimately be brought back to IEC.

BEYOND PUBLICATION

Together, these examples are a reminder that publication does not have to be the end of the process. Adoption gives us another opportunity to contribute by determining how an IEC standard works for the U.S. market, understanding why national differences are needed, and considering whether the technical basis for a difference could also benefit the international community.

The goal is not to eliminate national differences simply for the sake of alignment. It is to be thoughtful about why those differences exist and whether some of them point to opportunities to improve the international standard itself.

This is what "beyond publication" should mean: developing international standards through consensus, learning from their national adoption and use, and bringing the best lessons back to the international process. When we do this well, publication is not the finish line, but another step in a continuous cycle of learning, improvement, and collaboration.



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FROM CONSENSUS TO IMPACT: THE LIFE OF A STANDARD AFTER PUBLICATION

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Developing a new standard can take anywhere from a few months to several years, requiring significant effort to build consensus among diverse stakeholders. While publication is an important milestone and a tangible output of a standards committee, it is not the ultimate goal. The real measure of success is what happens after publication: whether the standard is adopted, implemented, and used to enable innovation, support compliance, solve real-world problems, strengthen trust, and facilitate market access. In other words, the journey must move from publication as an output to impact as an outcome.

Here are three ways to create impact for standards after publication:

ADOPTION AND IMPLEMENTATION

The adoption of a standard often begins well before publication. Organizations and stakeholders participating in a standards committee have early visibility into the standard's development and are therefore well positioned to become its first adopters and implementers. This is one of the important benefits of standards participation: organizations can better understand emerging requirements, contribute practical perspectives, and prepare for implementation as the standard takes shape.

While most standards are voluntary, their use can become effectively mandatory when they are incorporated into laws or regulations, referenced in procurement requirements, or used as the basis for certification programs. Decisions to use a standard in these contexts may also begin during the development process rather than only after publication. Governments, for example, can rely on voluntary consensus standards to support regulatory and other governmental activities instead of developing separate technical requirements. Participation by government experts in standards development can also help ensure that standards reflect practical considerations and are suitable for potential governmental use.

For international standards, national adoption provides another important pathway from publication to

implementation. When the United States nationally adopts an international standard, it can make the standard more readily available to U.S. stakeholders while maintaining alignment with the internationally agreed technical content, subject to any necessary national differences. This can be particularly valuable for small- and medium-sized enterprises, helping reduce barriers to accessing and implementing international standards.

A good example is ISO/IEC 23894:2023, Artificial intelligence — Guidance on risk management, developed by ISO/IEC JTC 1/SC 42. In the United States, the international standard was nationally adopted as INCITS/ISO/IEC 23894:2023, an identical national adoption of the ISO/IEC standard. This illustrates how an international standard can move from consensus at the ISO/IEC level into the U.S. national standards system while maintaining the internationally agreed technical content.

COMMUNICATION

A standard cannot generate impact if its intended users are not aware of it or cannot meaningfully understand how to apply it. Communication after publication is therefore critical to moving a standard from publication to practical use. Effective outreach should explain what the standard is, why it matters, what problem it addresses, who should use it, and how it can be implemented.

Importantly, communication should focus not only on the technical content of the standard, but also on the value and practical outcomes that its use can deliver. Different audiences may also require different forms of communication. An engineer implementing a standard, a policymaker considering referencing it, and a business leader evaluating its relevance may each need the information presented in a different way.

Communication can take many forms, including plain-language summaries, explanatory materials, webinars, training, implementation guidance, use cases, and practical examples. Increasingly, standards can also be made available through digital standards platforms in machine-readable formats, allowing their content to be more easily integrated into digital tools and workflows rather than being consumed solely as a traditional PDF document.

The IEC and ISO SMART Standards program provides an example of how the way standards are communicated and delivered is also evolving. The program is intended to make standards more accessible and effective for both people and technology-based users. One component, standard information management, seeks to transform standards content and data into well-structured provisions that can be understood by digital systems, making standards more accessible, discoverable, and usable across digital applications and services. This represents an important evolution from thinking of a standard primarily as a document to thinking about how its content can be effectively consumed and applied by its users.

FUTURE ITERATIONS

The strongest standards respond to a clear market, regulatory, safety, interoperability, or technology need. But those needs do not remain static, and neither should the standards developed to address them. After publication, practical experience provides an important source of information for future iterations. Feedback from users, implementation experience, market developments, and advances in technology can reveal opportunities to clarify requirements, address gaps, and ensure that a standard continues to meet its intended purpose.

For this reason, standards committees should view adoption and implementation not only as measures of a standard's success, but also as inputs into its continued evolution. Communication with users is particularly important because it creates a feedback loop between those who develop a standard and

those who apply it in practice. The lessons learned after publication can help committees determine whether a standard should be maintained as written or whether changes are needed in a future edition.

Within the IEC system, this concept is built into the standards life cycle through the use of a stability date, which indicates how long a publication is expected to remain valid without revision. The responsible technical committee uses its technical expertise to determine when a document should be reviewed or updated. IEC committee dashboards and individual publications identify these stability dates, making the anticipated maintenance point visible as part of the publication's life cycle.

The IEC 62443 series also demonstrates how standards continue to evolve after publication. For example, IEC 62443-2-1 was first published in 2010 and was replaced by a second edition in 2024. IEC identifies significant technical changes in the newer edition, including a revised requirements structure, removal of duplication with information security management systems, and the introduction of a maturity model for evaluating requirements. Other parts of the series have similarly evolved through amendments and subsequent editions; IEC 62443-2-4, for example, was published in 2015, amended in 2017, and replaced by a second edition in 2023.

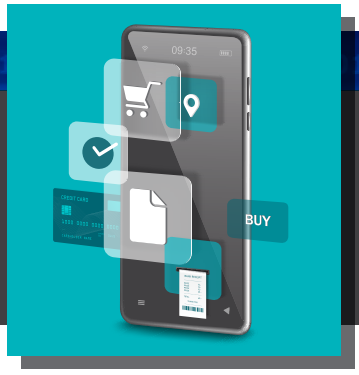
CONCLUSION

Publication is an important milestone, but it should not be viewed as the finish line. The true value of a standard is realized through what happens next: how widely it is understood, adopted, implemented, and ultimately used to address the needs it was created to solve. Achieving that impact requires continued engagement among standards developers, industry, government, and users long after the document is published.

Standards committees therefore have an important role beyond developing consensus. By promoting adoption, communicating the value of their work, listening to implementation experience, and using that feedback to inform future iterations, they can help ensure that standards remain relevant and useful in a changing world.

THANK YOU TO OUR OCTOBER 2026 USNC MANAGEMENT MEETING HOST, UL STANDARDS & ENGAGEMENT!

On October 20–22, the three USNC policy committees (the USNC Council, the Technical Management Committee, and the Conformity Assessment Policy Coordination Committee) met in Durham, North Carolina, at the UL Standards & Engagement facilities for three days of fruitful meetings. Thank you to ULSE for hosting us!



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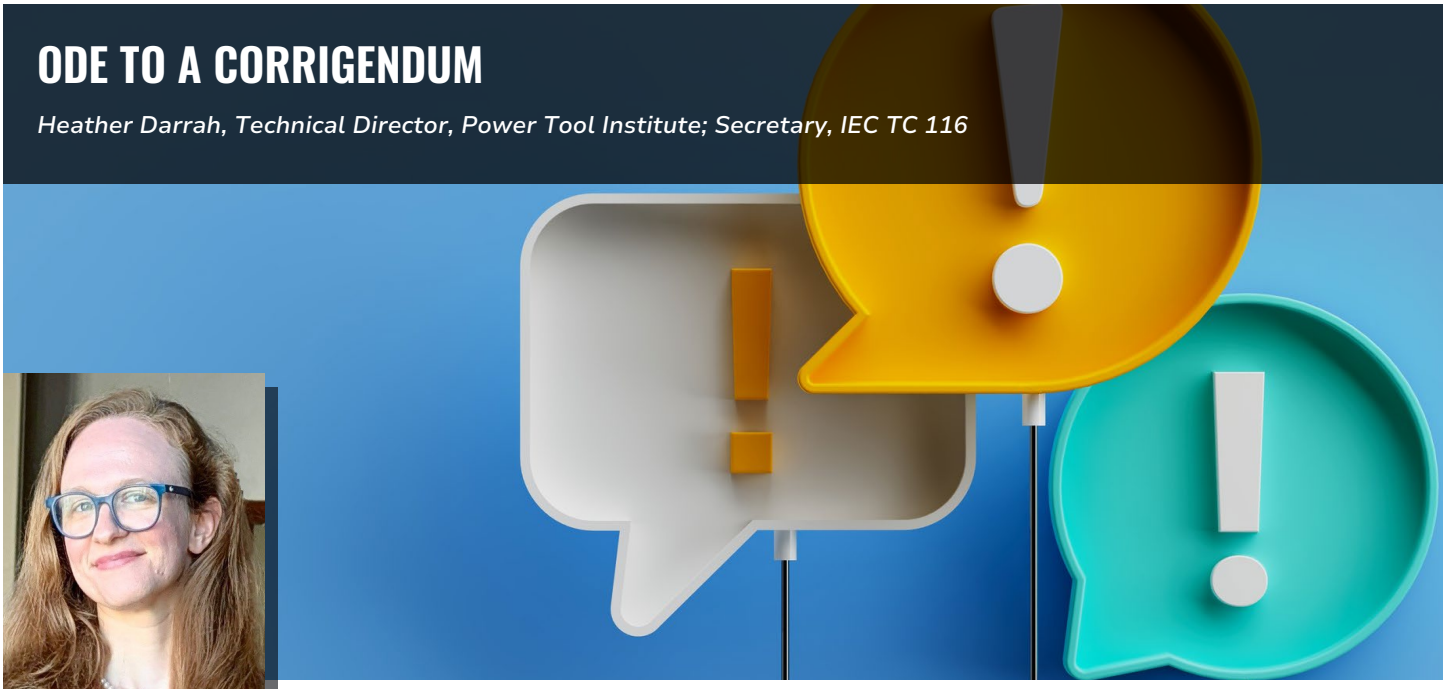
ODE TO A CORRIGENDUM

Heather Darrah, Technical Director, Power Tool Institute; Secretary, IEC TC 116



Congratulations. You've done the hard work of writing a standard through countless hours of comment review, national committee discussion, and death by a thousand redline edits from an editor. The document is finally published and sent out into the world.

Then, months or sometimes years later, someone comes back with a comment:

"This doesn't make sense. I think I found an error."

At that moment, you may be looking at a corrigendum.

Before anyone starts drafting the correction, however, there is a more important question: is it actually an error?

WHAT IS A CORRIGENDUM?

Because who doesn't love a good definition?

Merriam-Webster defines a corrigendum as:

"An error in a printed work discovered after printing and shown with its correction on a separate sheet."

The IEC Directives take a more restrictive approach. Under subclause 4.6.3, Corrections:

"A correction is only issued to correct an error or ambiguity inadvertently introduced and which could lead to the incorrect or unsafe application of the document. Corrections are not issued to update information that has become outdated since publication."

In other words, not every problem deserves a corrigendum. Few do.

ARE CORRIGENDA FOR CORRECTING EDITORIAL ERRORS?

Usually not.

Did someone discover a missing period? Is there a missing space between a number and its unit?

Congratulations. You're one of those wonderful grammar people. You're in exactly the right line of work.

If the issue survived all the way through publication, it will likely wait for the next maintenance project.

But suppose a figure has become so distorted during publication that it resembles a corrupted Microsoft Word document. Now you may have a problem that a corrigendum can solve.

SO YOU'VE FOUND A POSSIBLE ERROR. NOW WHAT?

This is where the real work begins.

A potential correction needs more than a statement that something looks wrong. You need evidence of what the committee originally intended.

Was there a comment that was accepted but never properly implemented?

Was there a national committee decision that supports the proposed correction?

Does the published text conflict with the surrounding requirements, instructions, or terminology used elsewhere in the document?

Can the rationale be traced through comment sheets, drafting instructions, or national committee votes?

This is where standards development occasionally becomes standards archaeology.

The challenge is often not identifying the suspected error. The challenge is proving what the committee intended years earlier. By the time a possible correction reaches a secretary or technical officer, someone usually needs to start digging through historical records to understand how the published text came to be.

Sometimes the answer is straightforward. Sometimes the trail disappears into years-old comment sheets and editorial instructions.

WHEN IS A CORRIGENDUM APPROPRIATE?

Once a committee determines that a correction may be justified, the next question is whether a corrigendum is the appropriate tool.

The correction must be tied to a demonstrable error or ambiguity that could lead to incorrect or unsafe application of the document. The proposed change should be supported by evidence of the committee's original intent rather than a desire to improve the text after publication.

A corrigendum is not a shortcut for making technical changes that failed to make it into the published document.

Did the published text introduce an unintended burden on manufacturers or test houses? Is it inconvenient? Does everyone agree it could have been written better?

Those concerns may be valid, but inconvenience alone does not justify a corrigendum. Don't try to use a corrigendum to make a backdoor technical change. Your secretary and, very quickly, your technical officer will shut that idea down.

WHAT ABOUT CLARIFICATIONS?

Sometimes the issue is not that the standard is wrong. The issue is that people disagree about how it should be applied.

That is a different tool entirely.

What were formerly called Interpretation Sheets (ISHs) are now addressed as Clarifications under the IEC Directives, clause 4.7. If the published text accurately reflects committee intent but users need additional explanation, a clarification may be the more appropriate path.

HOW DOES SOMEONE KNOW A STANDARD HAS A CORRIGENDUM?

When published, an IEC corrigendum is issued as a separate document and is available through the IEC Webstore. The applicable corrections are also incorporated into IEC versions of the standard. However, they are not automatically incorporated into all national adoptions.

This means that users should always pay attention to whether corrections have been issued after publication, particularly when working with older editions.

HOW DO YOU REDUCE THE CHANCES OF A CORRIGENDUM?

Attention to detail. Plain and simple.

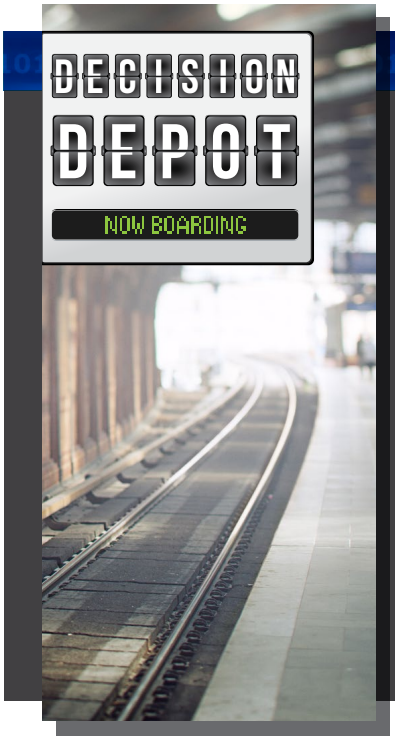
The IEC staff and committee officers preparing these documents are professionals, but they are also human. Errors happen.

One of the best investments a committee can make is maintaining strong documentation throughout the development process. Keep good records of comments, resolutions, drafting decisions, and editorial instructions. Years later, those records may be the only evidence available when someone asks what the committee originally intended.

If you have a co-op student or a young engineer looking to learn the process, ask them to compare the approved comment resolutions against the final published text. They gain valuable exposure to standards development, and the committee gains another opportunity to catch an issue before publication.

Most corrigenda are not the result of dramatic technical failures. Often they begin as small oversights that slipped through a complex international process involving hundreds of comments and multiple rounds of review.

The best corrigendum is the one you never have to write. A careful review today can save a great deal of standards archaeology tomorrow.



DECISION DEPOT

This column provides a list of recent decisions that have been made regarding IEC and USNC policies and procedures that directly affect our members.

See the Decision Lists below for decisions made at the following meetings:

IB/660/DL: Confirmed IB decisions taken at the September 2026 IB meeting

BAC/369/DL: Confirmed BAC decisions and recommendations from the BAC 14/15 October 2026 meeting

BAC/345/DL: Confirmed BAC decisions and recommendations from the BAC 5 August 2026 meeting

All decisions can be accessed via www.iec.ch.

LIFE AFTER PUBLICATION: FROM CYBERSECURITY REQUIREMENTS TO RESILIENT RAILWAY SYSTEMS

Gnouma Diagana, Senior Systems Engineer, Vehicle & Wayside Architecture; USNC TAG IEC TC 9

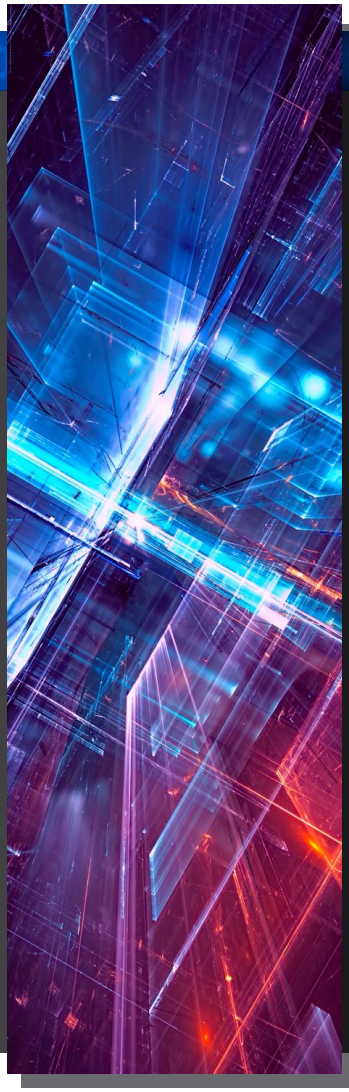


The publication of OT cybersecurity standards represents an important milestone for the railway industry, providing a common framework for addressing cybersecurity across increasingly digital and interconnected railway systems. While the release of an international standard is often viewed as the culmination of years of collaboration, consensus building, and technical development, it actually marks the beginning of a much longer journey: transforming requirements on paper into resilient railway systems in operation.

As railway systems become more connected, cybersecurity can no longer be considered in isolation. Signaling systems, train control, communications networks, wayside infrastructure, operational technology, cloud services, and enterprise systems increasingly exchange information to support safe and efficient operations. While this connectivity delivers significant operational benefits, it also introduces dependencies that can amplify the consequences of cyber incidents. A vulnerability in one system may have cascading impacts across multiple functions, organizations, and operational boundaries.

The challenge following publication of standards such as IEC 62443 and IEC 63452 is therefore not simply achieving compliance but establishing resilience. Organizations must translate high-level requirements into system architectures, procurement specifications, engineering processes, verification activities, and operational procedures. This requires close collaboration among railway operators, system integrators, product suppliers, and cybersecurity practitioners to ensure cybersecurity responsibilities are clearly defined and effectively managed.

Experience has shown that cybersecurity is not a one-time project deliverable. Maintaining secure and resilient railway operations requires continuous vulnerability management, change control, monitoring, and periodic reassessment throughout the system life cycle. International cybersecurity standards provide the framework, but their real value is realized only when organizations transform published requirements into sustainable practices that enable railway systems to withstand, respond to, and recover from an evolving cyber threat landscape.



JUST PUBLISHED

Check out the latest and greatest recently published standards by the IEC. A complete list of recently published documents can be found here. Here's just one (of many!) we think you'll find interesting:

IEC TS 60071-4:2026- INSTRUCTIONS FOR SIMULATION-BASED INSULATION COORDINATION AND MODELLING OF ELECTRICAL NETWORKS

IEC TS 60071-4:2026, which is a technical specification, gives guidance on conducting insulation co-ordination studies which propose internationally recognized recommendations:

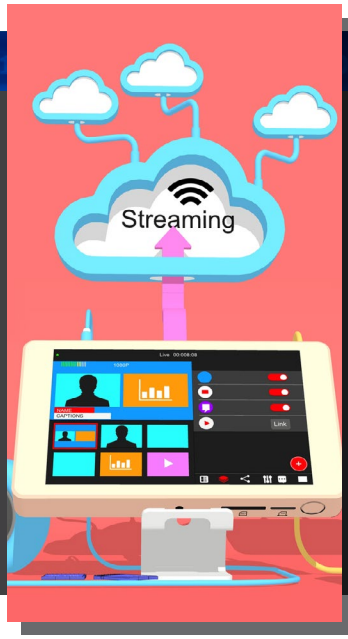
» for the computational modelling of electrical systems, and

» for the implementation of deterministic and probabilistic methods adapted to the use of numerical programmes

Its objective is to give information in terms of methods, modelling and examples that support the application of the approaches presented in IEC 60071-2:2023, and for the selection of insulation levels of equipment or installations, as defined in IEC 60071-1:2019.

This edition cancels and replaces IEC TR 60071-4, published in 2004. This edition constitutes a technical revision.

Developed by TC 99 Insulation co-ordination and system engineering of high voltage electrical power installations above 1,0 kV AC and 1,5 kV DC



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United States National Committee of the IEC

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ABOUT THIS PUBLICATION

The USNC *Current* newsletter is distributed to the constituency of the U.S. National Committee (USNC) of the International Electrotechnical Commission (IEC). It provides updates on technical activities and other information of interest to members of the electrotechnical community. Some articles are reprinted with permission from the IEC News log.

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Contributions are gladly accepted for review and possible publication, subject to revision by the editors. Submit proposed news items to: Catherine Pilishvili (cpilishvili@ansi.org).