The IEEE Computer Society Standards Activity Newsletter

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Welcome to the third IEEE Computer Society Standards Activity newsletter. As the newsletters are increasingly forwarded around, they are generating more enquiries and expressions of interest in standards under development. Let's hope for more of the same this time! This will also be the first newsletter which is forwarded to the Technical Activities Committee ExCom, so that we can start bridging the divide between the two parts of the Computer Society.

As per last time, please can all Standards Committee Chairs/Vice-Chairs cascade this to the membership, so that we can improve the communication and awareness across our different working groups. If there is anything that is of interest, then please either contact the WG leads, the standards committee chairs or myself, so that we can put you in contact as needed. Note that in the tables below, PARs which are entity based rather than individual are explicitly called out.

Thank you for all of your efforts in developing new standards – together we can be even more successful.

Darren Galpin

2026 SAB VP for Standards Activities

New PARs

1. Artificial Intelligence Standards Committee

Project Number	Project Title	Scope	Purpose
P3123	Standard for Artificial Intelligence and Machine	The standard defines specific terminology utilized in artificial intelligence and machine learning (AI/ML). The standard provides	The purpose of this standard includes: a) improving communication between

	Learning (AI/ML) Terminology	clear definition for relevant terms in AI/ML.	research groups via an established lexicography, and b) facilitating improved communication among academics and practitioners.
P3488 (Entity)	Standard for Technical Requirements of Artificial Intelligence-Based Data Sample Labeling and Management for Transmission and Distribution Lines	This standard specifies a framework for Artificial Intelligence (AI) based labeling and management of samples applicable to image data of transmission and distribution lines. The framework applies to the power industry, especially to organizations that wish to optimize the monitoring, maintenance, and fault diagnosis of transmission and distribution lines using AI. The standard provides a description of process and technical requirements for AI-based sample labeling and management, including sample labeling objectives, sample labeling requirements, sample labeling methods, and sample management. The framework model employs AI algorithms to automate the process of sample labeling, helping to ensure high-quality data while also using an intelligent permission management system to maintain data security. The model not only streamlines the task of sample labeling but also enables real-time monitoring and comprehensive analysis of transmission and distribution lines, offering robust decision-making support for power system operations and maintenance. Furthermore, the framework offers guidance on data	Intelligent monitoring and identification of anomalies of transmission, distribution, and power lines require precise sample labeling. This standard helps to improve the reliability of these samples thereby preempting potential security risks thus enhancing the overall efficiency and safety of the power grid.

		analysis, helping power companies extract valuable information from large amounts of data for line optimization and risk prevention.	

2. Software & Systems Engineering Standards Committee

Project Number	Project Title	Scope
P26636	Software and systems engineering -- Framework of low-code development tools	This document outlines the framework of low-code development tools (LCDT), proposes specific tool capabilities and method requirements, and aims to guide the practice of LCDT in the software development process. This document is applicable to the acquirers, suppliers, maintainers, and independent evaluators of low-code development tools. It presents requirements and recommendations for the utilization of LCDT in the processes of software development, including requirements engineering, design, integration, and testing and evaluation. It provides requirements for tools management and support, including quality assurance.
P26044	Software and systems engineering -- Reference model on capabilities of generative artificial intelligence tools for software engineering	This document provides a reference model on capabilities of generative artificial intelligence (gen-AI) tools for software engineering. The reference model serves as a foundational framework for understanding and applying gen-AI tool capabilities to support software engineering processes. The reference model specifies a structure of processes and sub-processes that can apply gen-AI tools for software engineering. The document also includes tool integration points and interrelationships between gen-AI tool capabilities, ISO/IEC/IEEE 12207 software life cycle processes and ISO/IEC/IEEE 15288 system life cycle processes. The structured reference model organizes gen-AI tool capabilities across four key process areas: -- governance processes for directing gen-AI tool usage within software engineering workflows; -- project processes for planning, enabling, and managing gen-AI tool integration in software

		engineering projects; --technical process with tool capabilities supporting the software engineering lifecycle: requirements engineering, architecture and design, implementation, verification and validation, system integration, and maintenance; -- organizational process with tool integration capabilities for quality assurance, human resource management, infrastructure management, process management, and knowledge management; Discussion of each selected process is divided into sub-processes, and each sub-process is described in terms of the following attributes (harmonized with ISO/IEC/IEEE 12207 and ISO/IEC/IEEE 15288): title, purpose, inputs, tasks (supported by methods and tool capabilities), and outcomes. This document does not specify: • requirements for AI systems themselves; • AI model development, training, or deployment processes; • AI system life cycle processes; • specific tool implementations or technologies.

3. Standards Activities Board Standards Committee

Project Number	Project Title	Scope	Purpose
P4117 (Entity)	Standard for Scientific Intelligence Systems Reference Architecture	This standard establishes a reference architecture for Scientific Intelligence Systems (SISs) and defines the core terminology and conceptual boundaries of the field. It specifies the core modules of SISs, and delineates the core functions and the interaction mechanisms between modules. This standard applies to the design, development and integration of SISs across key scientific and engineering disciplines including bio-medicine, new materials and meteorology. It provides an architectural framework for the integration of Scientific Intelligence (SI) models in such systems.	This standard facilitates effective collaboration and accelerates the adoption of SI across various disciplines.

P4116 (Entity)	Standard for General Requirements of Computational Models in Scientific Intelligence Systems	This standard specifies general requirements for computational models used in Scientific Intelligence Systems (SISs). The standard covers the functional capabilities, quality attributes, and lifecycle management that are essential for computational models to help ensure their reliability, trustworthiness, and effectiveness in supporting scientific discovery and engineering workflows, including tasks such as prediction, generation, reasoning, and domain adaptation. The standard applies to computational models intended for scientific research applications, and provides guidance for their development, evaluation, and integration in scientific and engineering fields to help ensure compliance with the stringent requirements of scientific research applications.	By defining requirements that bridge computational modeling paradigms while aligning with scientific and engineering constraints, this standard provides a unified framework for the development, evaluation, and integration of diverse computational models. It further underpins the construction of robust, standardized Scientific Intelligence (SI) ecosystems.
P4126 (Entity)	Standard for Coolant Distribution Unit of Server Liquid Cooling Systems	This standard applies to Coolant Distribution Units (CDUs) that are one of the components in liquid cooling systems for liquid-cooled servers. The standard specifies general, functional (including operation and maintenance functions)-, connection-, performance-, reliability-, safety-, and environmental adaptability-related requirements to help ensure normal operation of servers. Also, the standard describes corresponding test methods, quality assessment procedures, labeling, packaging, transportation, and storage of a CDU.	

4. Smart Manufacturing Standards Committee

Project Number	Project Title	Scope	Purpose
P4128 (Entity)	Standard for General Requirements of Manufacturing Deviation Management Platform with Artificial Intelligence (AI) Capability	This standard specifies the general principles and requirements for deviation management (detection, "identification of a responsible person, analysis, recovery, quality assurance) in manufacturing processes with Artificial Intelligence (AI) capability. It defines the framework and associated functional requirements, data requirements, process elements, and performance indicators from deviation detection, deviation owner identification, response for the alert, root cause analysis, and deviation recovery throughout the manufacturing lifecycle. The standard provides guidance for manufacturers, AI solution providers, and research organizations on how to integrate AI technologies seamlessly into manufacturing environments. It supports the development of next-generation smart manufacturing by enabling interoperability across equipment, shopfloor systems, and enterprise platforms. The standard helps to improve manufacturing quality, product reliability, productivity, cost efficiency, and development speed.	Deviation management is the primary problem that workshop managers in manufacturing enterprises address on a daily basis. Artificial intelligence represents a key area where machines replace human labor and embodies the intelligent component of smart manufacturing. The purpose of this standard is to establish a unified framework for effectively managing manufacturing deviations by integrating AI capabilities into every step of the deviation-management process. This framework elevates manufacturing performance by enabling faster issue resolution, higher productivity, and more consistent quality across all manufacturing operations.
P3945.3 (Entity)	Standard for Classification and Maturity	This standard applies to industrial intelligent agents used in manufacturing activities and	

	Assessment of Industrial Intelligent Agents in Manufacturing Systems	interacting with manufacturing software systems, industrial automation systems, production equipment, production processes, or human operators. The standard describes these agents in a vendor-neutral manner. The description encompasses classification dimensions and maturity levels. The standard incorporates a framework for assessing an agent's maturity level for industrial deployment and operation. By defining classification rules tied to manufacturing roles, system integration context, and operational responsibilities, together with maturity levels, the standard supports consistent requirement specification, capability declaration, procurement, testing, deployment, and lifecycle governance across heterogeneous manufacturing environments.	
P4122 (Entity)	Standard for Integration Protocol between Industrial Packaging Robots and Vision Systems	This standard specifies an application level protocol that integrates vision systems into industrial packaging robots. The protocol uses the Transmission Control Protocol (TCP) and defines connection establishment, data transmission procedures, message formats, and connection termination. This standard applies to all types of industrial packaging robots in various industrial application scenarios, including those for sorting, palletizing, case packing, as well as industrial packaging robots integrated with vision systems.	This standard unifies key technical requirements and clarifies frame structures, byte order, functions of various frames, and communication maintenance rules. It addresses issues such as insufficient compatibility, inconsistent data transmission between industrial packaging robots and vision systems produced by different manufacturers, reduces equipment integration difficulty, improves the

			collaborative efficiency and data interaction of robots and vision systems in packaging operations, and provides standardized support for the packaging automation industry.

5. Learning Technology Standards Committee

Project Number	Project Title	Scope	Purpose
P2247.2	Standard for Interoperable Adaptive Instructional Systems (AISs)	This standard defines interactions and exchanges between systems and components that provide adaptive instruction. Collectively these components and systems comprise an Adaptive Instructional System (AIS). This standard defines the data and data structures used in interactions and exchanges involving any conformant AIS. This standard also establishes requirements and guidance for the use and measurement of the data, data structures, and parameters.	This standard enables producers of AISs to describe the overall operation of an AIS in terms of interactions and exchanges between AIS components (e.g., learner models, instructional models, domain models, and user interface models) and other AISs; to specify its approach and method of interoperation; and to identify the methods used to implement specific components, models, and interfaces. This standard enables consumers of AISs to make comparisons to inform purchasing and deployment decisions and serves a reference for technical standards that support the exchange of components and data among AISs and between AISs and other education and training systems. This standard incorporates and promotes the principles of ethically aligned design for the use of Artificial Intelligence (AI) in AIS.

6. Knowledge Engineering Standards Committee

Project Number	Project Title	Scope	Purpose
P4123 (Entity)	Standard for Requirements for Domain Ontology Construction and Integration	This standard defines the process and the technical requirements for construction and integration of domain ontologies. The technical requirements for construction include the identification, definition, establishment, and maintenance of domain ontologies. The technical requirements for integration include the integration of domain ontologies with existing large-scale models and intelligent agents.	The purpose of this standard is to enhance the stability and availability of domain ontologies and associated knowledge bases. In addition, this standard aims to promote the efficiency of integration among domain ontologies, large-scale models and intelligent agents.

Completed Standards

There were no completed standards this round.