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SC 36 Business Plan 2025

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ISO/IEC JTC 1/SC 36 "Information technology for learning, education and training"

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Final version of SC 36 business plan (2025-2026)

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Description

This documents will be submitted to JTC 1 for approval.



STRATEGIC BUSINESS PLAN ISO/IEC JTC 1/SC 36

Information Technology for Learning, Education and Training

1 Executive summary

ISO/IEC JTC 1/SC 36 develops international standards for information technologies (IT) used in Learning, Education and Training (LET). A key goal of SC36 standards is to provide for interoperability among different and distributed IT systems, tools and services used in LET contexts.

Digital technology impacts profoundly all aspects of LET, due largely to its growing ubiquity and constant innovation associated with it. While there is a close relationship between innovation and standardization, innovation takes place at many frontiers and is informed by practice and market needs. Maximizing the potential of such an environment requires that standards development is therefore agile and relevant.

SC36 operates within the constraint that predicting future innovations and market requirements is impossible; however, through monitoring key trends anticipating IT requirements is more realistic. Standardization work is never complete and can only ever represent documented consensus at a particular moment in time. Standardization relevant to ongoing development of a global IT infrastructure that supports and stimulates LET is therefore the key focus of SC36.

With the implementation and integration of information technologies, learning, education and training, we are experiencing a renaissance that has the potential not only to enhance human development to new levels but also to reach more individuals than ever before. Through innovations in eLearning, communities of learners have firsthand opportunities to interact and share their knowledge, skills, and insights with each other.

With over one trillion Euros per annum spent worldwide in the learning, education and training industry, educational institutions, companies, professional organizations, government ministries, and other stakeholders require information technologies that work well together and support and engage learners. Learning, education and training in the workplace and other forms of learning require information technologies that support multiple stakeholders in a manner that is both flexible and effective.

From curriculum development to delivery and assessment, educators, employers, governments, and other stakeholders need to consider privacy, adaptability and accessibility requirements. SC36 develops standards in these and related areas.

2 Environment

2.1 Context

The context for the use of information technology in learning, education and training has changed significantly over the last few years, particularly in the wake of innovation with Generative Artificial Intelligence (GenAI). Global requirements include systems interoperability, accessibility, privacy, shared vocabulary, and intercultural

collaboration Such requirements are informed by UNESCO's leadership in articulating sustainable development goals, in particular, sustainable development goal 4 (SDG4) with its focus on achieving quality education for all by 2030. To achieve this, accessibility requirements are legislated in many countries and must be supported by appropriate technology.

With the advent of cloud computing, content (including private and management data) can be hosted anywhere, out of the reach of local legislation. With the proliferation of big data and unregulated data mining, however, surveillance of citizens (such as teachers and learners) that may contravene national and international privacy rights and legislation. Thus, privacy of stakeholders within the education sector may be at risk when redundancy and backup systems are hosted in countries other than where the learner lives.

UNESCO recommendations on Open Science to make scientific knowledge openly available, accessible and reusable consist of key elements: open access to scientific knowledge (including open access to scientific publications, data, Open Educational Resources (OER), software and hardware); open infrastructures; open engagement with society and dialogue with Indigenous and traditional knowledge systems, among others., IT frameworks that align with these recommendations are a key focus for SC 36. In addition, provisions are needed so that procurement procedures reflect the requirements of learners, instructors, and others (e.g., accessibility, open-source and proprietary software that are interoperable, privacy protection, etc.). In addition, while Governments are becoming providers of big data and open data, data mining tools and expertise remain lacking, stressing the need for increased digital literacy.

Quality assurance methodologies are essential in contemporary educational contexts. Quality processes are typically implemented to ensure the efficacy of systems and the optimization of stakeholder experience.

2.2 Key Trends

In this environment several important trends are giving shape to technological innovation as well as stakeholder expectations. These include:

- Disruption of educational systems driven by advanced capabilities of GenAI.
- A growing stakeholder concern for the *safe, responsible, and ethical* use of IT infrastructure in learning, education, and training. With this is increasing concern for *trustworthiness* of IT systems and tools.
- Continued growth of Open Educational Resources (OER) evident in large scale free online courses such as Massive Online Open Courses (MOOCs).
- Emerging Open Educational Practices (OEP), such as open assessment and open peer review.
- Assessment and Teaching of 21st Century Skills – marking a shift from content-centric pedagogies.
- The mobile revolution continues the shift from desktop computing towards 'mobile first' design and delivery of online educational opportunities.
- A continued tension within educational institutions in terms of provision of a standardized operating environment (SOE) and the individual user making use of their own equipment -- described as bringing your own device (BYOD).

- Embedding social media in many facets of daily life, including professional, workplace, and learning contexts.
- The rise of the data-driven enterprise and data-driven classroom supported by Learning Analytics and Educational Data Mining.
- Strong market acceptance of “cloud-based” software as a service (SAAS), signaling a major shift from locally installed software solutions.
- Game-based learning is growing due to the enormous and growing market for digital games.
- Emergence of the Learning Experience Platform (LXP) alongside the Learning Management System (LMS) as a core learning platform within higher education while at the same time questioning of this role due to the growth in the provision of free and niche services on the open web.
- Emergence of Artificial Intelligence (AI) as a major driver of innovation in digital technology, extending the scope of entities within the digital environment – e.g., neither the ‘learner’ nor the ‘instructor’ is necessarily human anymore.
- Emergence of the Internet of Things (IoT) and installation of ‘smart’ environments – interconnecting an increasing array of devices and sensors that can share data and interact with systems and stakeholders.
- Augmented reality (AR) as an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory and olfactory. AR can be defined as a system that incorporates three basic features: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects.
- Virtual reality (VR) as a simulated experience that can be similar to or completely different from the real world. Applications for virtual reality include entertainment (e.g. video games), education (e.g. medical or military training) and business (e.g. virtual meetings).
- Mixed reality (MR) as the merging of real and virtual worlds to produce new environments and visualizations, where physical and digital objects co-exist and interact in real time.
- Growing capabilities of the Metaverse as a future iteration of the internet, made up of persistent, shared, 3D virtual spaces linked into a perceived virtual universe. The metaverse in a broader sense may not only refer to virtual worlds, but the Internet as a whole, including the entire spectrum of augmented reality.
- Innovation with Digital Twins as virtual representations that serve as the real-time digital counterpart of a physical object or process. Digital twins are the result of continual improvement in the creation of product design and engineering activities.
- Developments with Blockchain as a “trustless and fully decentralized peer-to-peer immutable data storage” that is spread over a network of participants often referred to as nodes. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data.

In addition, there are numerous innovative companies developing technology that drives the change in how



technology can facilitate and support learning. Often, a new 'startup' company becomes successful very quickly in offering an innovation that can sometimes function as a 'disruptor' to conventional practice. There has been rapid growth of new startups and research groups working on EdTech in the last years. For the EdTech industry to have a global impact, there is a need for standards that ensure interoperability among all the apps and tools being developed.¹

2.3 Opportunities with a large stakeholder base

The formal education and training sector worldwide consists of an extremely broad base of stakeholder organizations, jurisdictions, regulatory frameworks, and practices. It is also subject to political and economic conditions and the forces of globalization. Workplace requirements for lifelong learning and a growing global market for education and training products and services add to this complexity while also providing opportunities for innovation and growth.

Stakeholders range from small businesses providing a single service to huge organizations that perform continuous training of their professionals, such as the airline industry and the military complex. Our stakeholders within formal education contexts range from small private schools to large public universities – commercial schools to ministries of education, covering learners in all stages of their life from kindergarten, school, universities, to lifelong education requiring development of new skills for an active retirement, for all people from all cultures and regions. The standards developed by SC36 must meet the expectations of this large stakeholder base. This provides some challenges and opportunities for the standards we develop.

SC36 standards have been developed as foundational, and in their nature must be adapted to different use scenarios and use cases. Our standards provide some foundations that ensure a minimal level of interoperability that facilitate a graceful degradation of interoperability by design. Standards developed by SC36 should therefore be used as a base and starting point for the development of standards for use by all stakeholders in their local context.

However, with this base of stakeholders SC36 expects new work item proposals that address base functionality in the digital learning ecosystems that supports innovation and new services supporting the key “business” of our stakeholders.

ITLET is a domain of constant change. Therefore, a core focus of SC36 – digital learning – is now taking place in an increasing diversity of contexts which include emergent trends as well as established practice. Not so long ago 'self-paced, single learner, customized instruction' seemed revolutionary. That was prior to the social media revolution; and, in recent years, the mobile revolution. Today, in the 'anytime, anywhere' mobile-enabled world the early year of digital learning appears to be overly managed and desktop-bound. Thus, while learning management systems and managed learning environments have become established platforms common throughout higher education and professional on-the-job training, there are many innovations such as Massive Online Open Courses (MOOCs), the proliferation of apps on handheld devices, and an increasing desire of stakeholders for Open Educational Resources (OERs) that require standards development organizations to perform a balancing act between being responsive to real market requirements while also providing leadership in positioning for future sustainability

¹ <http://tech.ed.gov> , <http://edtecheurope.com>, <http://www.edtechsummitafrica.com>, <http://www.edtechasia.com/>



3 Achievements and benefits of SC36

The development of knowledge and skills in education, industry, and other fields is increasingly linked to efficient use of information technology. The development of competency frameworks and associated information technology systems by educational institutions, companies, professional organizations, associations, government ministries, and others can be leveraged and shared to better support learning outcomes.

Standards that focus on metadata for educational content and context, technical requirements and rights management can help learning resource providers to more meaningfully interact and more effectively support organizations and their respective educators, trainers, and learners to tailor and enhance teaching and learning experiences using materials from different sources (e.g., OER, publisher content, etc.).

With mobility, content delivery can happen everywhere, at any time, and with a wide variety of support. Content and systems interoperability as well as student tracking are critical issues for seamless integration of onsite and online activities, especially in an evolving information technology landscape where tens of thousands of learners have the opportunity to interact together in learning activities in online environments.

Benefits of adopting ISO/IEC SC36 standards on information technology for learning, education and training include:

- internationalization of standards and specifications.
- an information ecosystem that supports both open and proprietary formats and allows for content migration and sharing of information using new tools platforms, and solutions.
- interoperability, the ability to share content and data across multiple platforms.

3.1 Application areas

ITLET standards have been developed in the following areas:

- Content: learning resource description, referencing and packaging.
- ISO/IEC 12785 series– Content Packaging
- ISO/IEC 19788 series –Metadata for learning resources
- ISO/IEC 29163 series – Sharable Content Object Reference Model
- ISO/IEC TR 18120 – Requirements for e-textbooks in education
- Programs and curriculum and competencies description to help tracking learner progress.
- ISO/IEC 20006 series – Information model for competency
- Technical data related to resource delivery (DRM, streaming and downloading,) and user data (identity, preferences, accessibility)
- ISO/IEC 23988:2007 – A code of practice for the use of information technology (IT) in the delivery of



assessments

- ISO/IEC 24751 series – Individualized adaptability and accessibility in e-learning, education and training
- ISO/IEC TS 29140 series – Nomadicity and mobile technologies
- ISO/IEC 20016-1:2014 – Language accessibility and human interface equivalencies (HIEs) in e-learning applications
- ISO/IEC 29187 series -- Identification of privacy protection requirements pertaining to learning, education and training (LET)
- Tracking data to collect learner output and support learning analytics
- ISO/IEC 24703:2004 – Participant Identifiers
- ISO/IEC 19778 series – Collaborative technology
- ISO/IEC 19780 series – Collaborative learning communication
- ISO/IEC 36000 series – Quality management, assurance and metrics
- ISO/IEC 20748 series – Learning analytics interoperability

3.2 Users of SC36 standards

Learning, education, and training within the digital environment are increasingly complex, consisting of countless tools and services. The challenge for standardization is to support key stakeholders such as learners, instructors, and administrators within their workflows and within these broader 'ecologies', providing authentication, responding to user inputs, and collecting usage data.

SC36 standards can form the basis for development, implementation, and evaluation of information technologies used for learning, education, and training initiatives by educational institutions, companies, professional organizations, government ministries, and other stakeholders. They also can be used to support assessments of learning and evaluations of Return on Education (ROE), agreements (e.g., service level and operational level agreements (SLA/OLA)), purchasing processes, and evaluation of digital services supply chains, among other things.

Learning, education, and training directors can benefit from standards to choose sustainable, efficient and interoperable delivery tools for content and apply quality assurance to support the whole educational process, including online learning and learning analysis.

Learning, educational, and training counsellors can use competencies and portfolio reference models for recognition of acquired competencies. As well, these standards can be used to ensure guidelines and other supports are in place for individual learners and to enhance and improve conformance with accessibility legislation.

Instructors, teachers, and trainers can share educational resources and provide a rich variety of learning experiences through social networks and collaborative tools in safe, secure environments that respect the



privacy of learners.

Information technology vendors, online content developers, and other professionals can be informed by and provide input into an integrated set of standards that are modular and adaptable to better meet the needs of their respective communities.

4 Participation and cooperation

4.1 Analysis of the participation

The participation and activity in SC36 represents a high level of engagement since inception, with many new projects established and new projects in the preparation. However, most active partners are from industrialized countries, with well-established educational systems and institutions ITLET is seen by many as a means for spreading and engaging education in less developed regions and countries. But while digital technology promises efficiencies, these are not always realised.

To develop standards that meet a variety of use scenarios and to ensure that the standards meet the needs and requirements for all countries continues to be a challenge. Engagement in international standardization comes at a cost; however, SC36 P-Members can establish twinning and other liaison arrangements to get more involvement and contributions from these countries.

4.2 P-Members and O-Members

P-Members: 22

Australia (SA), Canada (SCC), China (SAC), Finland (SFS), France (AFNOR), Germany (DIN), India (BIS), Iran, Islamic Republic of (INSO), Italy (UNI), Japan (JISC), Kazakhstan (CTRM), Republic of Korea (KATS), Netherlands (NEN), Norway (SN), Philippines (BPS), Portugal (IPQ), Russian Federation (GOST R), South Africa (SABS), Spain (UNE), Ukraine (SE UkrNDNC), United Kingdom (BSI), Zimbabwe (SAZ)

O-Members: 28

Algeria (IANOR), Argentina (IRAM), Austria (ASI), Belgium (NBN), Bosnia and Herzegovina (ISBIH), Colombia (ICONTEC), Czech Republic (UNMZ), Ethiopia (IES), Ghana (GSA), Greece (NQIS ELOT), Hong Kong Special Administrative Region of China (ITCHKSAR), Hungary (MSZT), Indonesia (BSN), Ireland (NSAI), Kenya (KEBS), New Zealand (SNZ), Pakistan (PSQCA), Romania (ASRO), Rwanda (RSB), Saudi Arabia (SASO), Serbia (ISS), Slovakia (UNMS SR), Sweden (SIS), Switzerland (SNV), Tunisia (INNORPI), Türkiye (TSE), Uganda (UNBS), Uzbekistan (O'ZTTSA)

4.3 Liaison committees to ISO/IEC JTC 1/SC 36

Reference	Title	ISO/IEC
ISO/IEC JTC 1/SC 24	Computer graphics, image processing and environmental data representation	ISO/IEC



ISO/IEC JTC 1/SC 27	Information security, cybersecurity and privacy protection	ISO/IEC
ISO/IEC JTC 1/SC 34	Document description and processing languages	ISO/IEC
ISO/IEC JTC 1/SC 35	User interfaces	ISO/IEC
ISO/IEC JTC 1/SC 42	Artificial intelligence	ISO/IEC
ISO/TC 176	Quality management and quality assurance	ISO
ISO/TC 232	Education and learning services	ISO
ISO/TC 37/SC 2	Terminology workflow and language coding	ISO

Reference	Title	ISO/IEC
ISO/IEC JTC 1	Information technology	ISO/IEC
ISO/IEC JTC 1/SC 24	Computer graphics, image processing and environmental data representation	ISO/IEC
ISO/IEC JTC 1/SC 32	Data management and interchange	ISO/IEC
ISO/IEC JTC 1/SC 34	Document description and processing languages	ISO/IEC
ISO/IEC JTC 1/SC 41	Internet of things and digital twin	ISO/IEC
ISO/IEC JTC 1/SC 42	Artificial intelligence	ISO/IEC
ISO/TC 37	Language and terminology	ISO
ISO/TC 46	Information and documentation	ISO
ISO/TC 215	Health informatics	ISO
ISO/TC 232	Education and learning services	ISO
ISO/TC 260	Human resource management	ISO

4.4 Liaison committees from ISO/IEC JTC 1/SC 36



4.5 ORGANIZATIONS IN LIAISON (CATEGORY A AND B)

Reference	Title	ISO/IEC
AUF	Agence Universitaire de la Francophonie	A
Infoterm	International Information Centre for Terminology (Infoterm)	A
IEEE LTSC	IEEE Learning Technology Standards Committee	A
1EdTech	1EdTech Consortium	A

5 Objectives and strategies to achieve them

Through this document, SC36 aims to be responsive to a changing business environment and to review and align its work program accordingly. In maintaining its relevance and value to its stakeholders SC36 updates its business plan on a two-yearly basis. Previous versions are available at SC36N4411.



5.1 SC36 Origins and Business Planning Cycle

ISO/IEC JTC 1/SC36 (hereafter "SC36") was established by JTC1 in 1999 to serve as a peak international forum for standards development in Information Technology for Learning, Education, and Training (ITLET). In fulfilling this, SC36 serves both its constituent members, national standards bodies, as well as key liaison organizations internal and external to ISO.

As expressed by ISO, the foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade. For SC36, this means contributing to the development of an IT infrastructure that is robust, interoperable, and relevant to the needs of stakeholders within Learning, Education, and Training (LET). It also means that SC36 needs to work cooperatively with several key IT specifications organizations in a complex business environment.

5.2 Scope of SC36

"Standardization in the field of information technologies for learning, education, and training to support individuals, groups, and organizations, and to enable interoperability and reusability of resources and tools.

Excluded from this scope are:

- standards or technical reports that define educational standards (competencies), cultural conventions, learning objectives, or specific learning content.
- work done by other ISO or IEC TCs, SCs, or WGs with respect to their component, specialty, or domain. Instead, appropriate, normative or informative references to other standards shall be included. Examples include documents on special topics such as multimedia, web content, cultural adaptation, and security."

5.3 Strategies

Standards are developed to meet national bodies' requirements and stakeholders' needs and concerns. The drafting of standards is a collaborative effort of experts from national member bodies that is led by an individual editor or a team of editors chosen among those national experts who attend the plenary and interim meetings.

5.4 Study groups

In addition to drafting standards, SC36 activities involve study groups on specific topics. Study reports describe best practices and provide guidance. Use case collections are used to ascertain the need, scope and specifications for new standards in the field of information technology for learning, education and training.

5.5 Structure of SC36

Reference	Convenor	Title	Terms of Reference
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SC36/WG3	Rosa Maria Gomez de Regil (FR) Romuald Verrier(FR, secretary)	Learner information	Standardization with respect to information about roles and organizational positions held by participants within an ITLET system and personal information about participants using an ITLET system
SC36/WG4	Yong-Sang CHO(KR) Yuntao YU(CN, vice)	Management and delivery	IT-related standardization for the management and delivery of learning, education and training and supporting technologies
SC36/WG7	Jyotsna Kumar Mandal (IN)	ITLET - Culture, language and individual needs	The development of standards that ensure that relevant features and processes of ITLET are adaptable to the requirements of individual users, including the requirements of users with disabilities
SC36/WG8	Yong-Sang CHO(KR)	Learning Analytics Interoperability	Standardization about data and process in relation to the conduct of analytics for technical, semantic, and organizational interoperability in ITLET domain.
SC36/WG9	Jing Du(CN)	Online course information model	Standardization on interoperability requirements in the process of organization, construction, development, utilization and implementation of online courses.
SC36/AG1	Sung-Wook SHIN(KR)	Business planning and communications	Assist the SC36 Chair and Secretariat in the review and update of the SC36 Business Plan and support SC36 in the creation and elaboration of business, communication, and marketing strategies, directions, and plans.
SC36/AG2	Jon Mason(AU)	Emerging Technologies (AGET)	Identifying Emerging Technologies that will have a likely impact on ITLET, and Providing advice to SC36 on Emerging Technologies that need to be considered in developing New Work Items
SC36/AHG5	Frederic Andres (JP)	Blockchain in Education	To explore the work of other ISO committees on blockchain and ledger technologies

SC36/AHG6	Jaeho, Lee(KR)	Artificial Intelligence for Education (AIEd)	Monitoring of, and liaison with, organizations, projects and other initiatives working in the field of AI, including: - open source communities - industry consortia/association - public/private sector initiatives - internal/external liaison organizations
SC36/TCG	Jaeho, Lee(KR)	Terminology Coordination Group	To ensure that the vocabulary of all of SC36 WGs and AGs is monitored and managed during all stages of their development including reviewing terms and definitions in already published standards.

* WG: Working Group, AG: Advisory Group, AHG: Ad-hoc Group

Joint working group under the responsibility of another committee

Reference	Convenor	Title	Terms of Reference
JTC1/SC24/JWG12	Myeong Won Lee(KR) Erlend Øverby (NO)	Joint ISO/IEC JTC1/SC 24 - ISO/IEC JTC1/SC 36 WG: VR/AR/MR based ICT Integration Systems standards	Analyze and develop use cases to support requirements for work items in the area of VR/AR/MR based ICT integration systems, and develop standards related to VR/AR/MR based ICT integration systems.

5.6 Main achievements of SC36

Reference	Title	Main achievements
SC36/WG3	Learner information	- SC36/WG3 has effectively finalized the development of eight international standards and one technical report - ISO/IEC 23127-1:2021 Information technology — Learning, education, and training — Metadata for facilitators of online learning — Part 1: Framework - ISO/IEC 29140:2021 Information technology for learning, education and training — Nomadicty and mobile technologies - ISO/IEC 20013:2020 Information technology for learning, education and training — Reference framework of e-Portfolio information - ISO/IEC 22602:2019 Information technology — Learning, education and training — Competency models expressed in MLR - ISO/IEC 19479:2019 Information technology for learning, education, and training — Learner mobility achievement information (LMAI) - ISO/IEC 20006-2:2015 Information technology for learning, education

		and training — Information model for competency — Part 2: Proficiency level information model • ISO/IEC 20006-1:2014 Information technology for learning, education and training — Information model for competency — Part 1: Competency general framework and information model • ISO/IEC 29187-1:2013 Information technology — Identification of privacy protection requirements pertaining to learning, education and training (LET) — Part 1: Framework and reference model • ISO/IEC TR 24763:2011 Information technology — Learning, education and training — Conceptual Reference Model for Competency Information and Related Objects ■ The ongoing project of SC36/WG3 is the 2nd edition of ISO-IEC 29187-1 - ITLET — Identification of privacy protection requirements pertaining to learning, education and training Project Editor: Frederic Andres (JP) Co-Editor: Jake Knoppers ■ This project uses OSD and its publication as an international standard is expected in 2025.
SC36/WG4	Management and delivery	■ SC36/WG4 has successfully concluded two major IS projects: the ISO/IEC 19788-1 2nd edition and ISO/IEC 4932. The ISO/IEC 19788-1 2nd edition, officially titled *Information technology — Learning, education and training — Metadata for learning resources — Part 1: Framework*, serves as the framework and horizontal standard for the ISO/IEC 19788 series. Its revision has been driven not only to maintain technical equivalence with previous editions but also to incorporate the latest advancements in technology, education, and societal changes—ensuring that the standard remains robust, relevant, and beneficial for implementers. ■ In parallel, the working group is advancing several high-impact projects. The second editions of ISO/IEC 19788-2, ISO/IEC 19788-3, and ISO/IEC 19788-4 are currently underway, each building on the established framework to enhance technical precision and consistency. Additionally, the group is progressing with ISO/IEC PWI 25468, *Metaverse service for LET*, a pioneering initiative that aims to set a new benchmark for emerging metaverse services.
SC36/WG7	ITLET - Culture, language and individual needs	■ WG 7 conducted 6 meetings during this period. In the kick-off meeting of 16278 on 25th February, WG7 instructed SC36 to change 16248 project title to “Information technology — Learning, education, and training — Access-for-All (AfA) cognition accessibility core properties”. The convener requested for creation of an entry of the same in the OSD. The same has also been created in OSD. For the DIS resolution for the ISO/IEC 20016-1 project, 2e edition, WG 7 organized another meeting on December 19, 2024 at 12:00 UTC for one and half hours. In this meeting WG 7 requests the completion of ISO/IEC 20016-1, 2e edition DIS resolution by January 7th, 2025, in this meeting WG 7 nominate Frederic Andres, Japan as co-

		project editor of the project 16248 and the request send to the ISO secretariat accordingly and added Frederic as co-project editor of the project 16248. DIS resolution completed on January 7th, 2025, and WG7 resolved to clarify use of gender as grammatical gender in 20016-1, 2e edition. On 29th of January, WG 7 discussed profile properties based on available documents. On 12th February WG 7 monitored the progress of WG7 standardization processes. WG 7 taken initiatives for preparing the draft of AWI 16248 and WG 7 completed the DIS consultation of ISO/IEC 20016-1, 2e edition and requested the Community Manager Sun Young to move to FDIS and requests ISO 639 document and ISO/IEC 25964 – Part I and II documents. As per suggestion of Community Manager, the editors of the project ISO/IEC 20016-1, 2e edition took initiative to convert figures in editable format.
SC36/WG8	Learning Analytics Interoperability	■ WG8 is actively advancing two key projects that are set to redefine the standards in their respective fields: ■ The ISO/IEC AWI 23988 2nd edition, officially titled “A code of practice for the use of information technology (IT) in the delivery of assessments”, is undergoing revision to incorporate cutting-edge technologies such as artificial intelligence and to reflect the dramatically evolving assessment environments. Since its first edition, rapid advancements in IT along with significant social and educational changes have necessitated this update, ensuring that the standard remains both technically robust and contextually relevant. ■ In parallel, ISO/IEC CD TR 9858 “Use cases on advanced learning analytics services using emerging technologies” is being developed to capture and analyze innovative use cases emerging from the rapid evolution of IT and learning analytics technologies. The insights gathered from this project will lay the groundwork for the future revision of the ISO/IEC 20748 series, driving forward more innovative and responsive standards for the industry.
SC36/WG9	Online course information model	■ SC36/WG9 has pushed the ISO/IEC AWI 8808 with title “Information technology for learning, education and training — Online course” to DIS stage. This project may be the first project of SC36 to be fully implemented on the OSD platform. ■ SC36/WG9 has pushed SC36 to approve a technical report project ISO/IEC AWI TR25470 in 2024, which is titled with “Information technology — Learning, education and training — Generative AI application for online courses” and under development. ■ SC36/WG9 also obtained a newly approved work item ISO/IEC AWI 25278 from SC36 in 2024, which is titled with “Information technology for learning, education and training — Evaluation of the quality of online learning: Maturity model and methodology” and under development.

SC36/AG1	Business planning and communications	■ Keep updating of SC36 Business plan ■ Maintaining of SC36's websites(including Wikipedia) ■ Managing of structure of SC36
SC36/AG2	Emerging Technologies (AGET)	■ The remit of AG-2 is to serve as a brainstorming forum focused on the implications of emerging technologies on the field of ITLET. We do not really aspire to achieve specific outputs but rather aim to advise SC36 on developments that need to be considered within our evolving work plan. AG-2 consistently attracts broad participation from National Body experts. As of March 2025 we have held 14 meetings within the 6-monthly plenary meetings.
SC36/AHG5	Blockchain in Education	■ AHG5 has reviewed to how to evaluate whether AI + Blockchain can make education more trustworthy, personalized, equitable, efficient, and globally interoperable, while ensuring data integrity, privacy, and accountability. ■ This review follows the potential work items: ■ Assessing Trustworthiness in AI-Driven Blockchain Systems ■ Assessment Principles of AI-driven Blockchain Systems ■ Specification of Assessment Principles of AI-driven Blockchain System ■ Ontological rules based assessment of AI-driven Blockchain System
SC36/AHG6	Artificial Intelligence for Education (AIEd)	■ AHG6 has reviewed the use cases of Artificial Intelligence in education across Korea, China, and Japan, along with major reports on AI for education. This review underscores the need to establish a new Working Group (WG) with the following potential work items: ■ Generative AI for Education ■ Risk Management Framework for Safe AI in Education ■ Development Guidelines for AI Digital Textbooks ■ The Complex Dynamics of Human-Machine Teaming in Learning and Education Technology (LET)
SC36/TCG	Terminology Coordination Group	■ Created in 2019 to continue the work of WG1 (disbanded in 2020) on ITLET vocabulary, ■ Keep working on defining an appropriate Vocabulary Management System to harmonize new terms and definitions in SC36 standards ■ Production of an SC36 Template for Vocabulary Quality Checklist (36 N 4800) ■ Collaboration with IEC to insert Terms and Definitions of ISO/IEC 2382-36:2019 into Electropedia as subsection 736

6 Factors affecting completion and adoption of the work program

The completion and adoption of international standards can be influenced by various factors, considering the global nature and broader impact of these standards. These factors include:

- **Relevance and Applicability:** The degree to which the international standard addresses real-world challenges and meets the needs of various industries and countries will impact its adoption. Standards

that are perceived as practical and relevant are more likely to be embraced.

- **Inclusivity and Consensus Building:** The process of developing international standards should involve diverse stakeholders, including governments, industry experts, NGOs, and consumer representatives. Achieving consensus among these stakeholders is crucial for widespread acceptance and implementation.
- **Support from Governments and Regulatory Bodies:** The support and endorsement of international standards by governments and regulatory bodies can encourage their adoption at the national level. This may include incorporating standards into legislation or regulatory frameworks.
- **Voluntary vs. Mandatory Adoption:** Some international standards are voluntary, while others may be made mandatory through regulations. The approach chosen can significantly impact the rate of adoption.
- **Implementation and Compliance Costs:** The cost of implementing the standard and ensuring compliance can be a significant factor in its adoption, especially for smaller organizations or developing countries.
- **Technical Complexity and Feasibility:** Standards that are technically complex or require extensive changes in infrastructure may face challenges in adoption due to the difficulty of implementation.
- **Language and Cultural Barriers:** Clear and easily understandable language, as well as considering cultural differences, can facilitate the adoption of international standards in diverse regions.
- **Training and Capacity Building:** Providing training and capacity building to stakeholders can enhance their understanding of the standards and their ability to implement them effectively.
- **Interoperability and Compatibility:** If the standard promotes interoperability and compatibility with existing systems or processes, it is more likely to be adopted as it minimizes disruptions during implementation.
- **Incentives and Benefits:** Demonstrating the benefits and incentives of adopting the standard, such as improved quality, safety, efficiency, or market access, can motivate organizations to embrace it.
- **Transparency and Accessibility:** Ensuring that international standards are publicly available and transparently developed fosters trust and encourages broader adoption.
- **Political and Geopolitical Factors:** Geopolitical considerations, including international relations and trade dynamics, can influence the adoption of international standards across different countries.
- **Time and Timing:** The time required for the development and release of standards, as well as the timing of their release concerning market needs, can affect their adoption rate.

7 STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC

This section gives an overview of the ISO/IECJTC1 SC36's structure, scope, projects and publications. All of this information is updated regularly and is available on ISO's website, ISO Online (Click on the links below to find the following information).

- [About \(Secretariat, Secretary, Chair, Date of creation, Scope, etc.\)](#)



- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Work programme (published standards and standards under development)

<Annex>

SC36 contribution to UN SDGs

The list of SC36 projects and publications that support and are consistent with the UN Sustainable Development Goals

Reference No.	Document title	WG	SDGs
ISO/IEC AWI 23988	Information technology — A code of practice for the use of information technology (IT) in the delivery of assessments	WG8	4, 9
ISO/IEC CD 19788-2	Information technology — Learning, education and training — Metadata for learning resources — Part 2: Dublin Core elements	WG 4	4, 9
ISO/IEC DIS 8808	Information technology for learning, education and training — Online course information model	WG9	4
ISO/IEC CD TR 9858	Information technology — Use cases on advanced learning analytics services using emerging technologies	WG8	4
ISO/IEC DIS 20016-1	Information technology for learning, education and training — Language accessibility and human interface equivalencies (HIEs) in e-learning applications — Part 1: Framework and reference model for semantic interoperability	WG7	4, 10
ISO/IEC DIS 29187-1	Information technology — Identification of privacy protection requirements pertaining to learning, education and training (LET) — Part 1: Framework and reference model	WG 3	4, 9, 16
ISO/IEC DIS 4932	Information technology — Learning, education and training — Access for All Metadata: Accessibility Core Terms (AfA-core-terms)	WG 4	4, 10
ISO/IEC PRF 19788-1	Information technology — Learning, education and training — Metadata for learning resources — Part 1: Framework	WG 4	4, 9
ISO/IEC 12785-1:2009	Information technology — Learning, education, and training — Content packaging — Part 1: Information model	WG 4	4
ISO/IEC 12785-2:2011	Information technology — Learning, education, and training — Content packaging — Part 2: XML binding	WG 4	4
ISO/IEC 19479:2019	Information technology for learning, education, and training — Learner mobility achievement information (LMAI)	WG 3	4, 5, 8
ISO/IEC 19788-3:2011	Information technology — Learning, education and training — Metadata for learning resources — Part 3: Basic application profile	WG 4	4, 9
ISO/IEC 19788-4:2014	Information technology — Learning, education and training — Metadata for learning resources — Part 4: Technical elements	WG 4	4, 9
ISO/IEC 19788-5:2012	Information technology — Learning, education and training — Metadata for learning resources — Part 5: Educational elements	WG 4	4, 9
ISO/IEC 19788-7:2019	Information technology — Learning, education and training — Metadata for learning resources — Part	WG 4	4, 9

Reference No.	Document title	WG	SDGs
	7: Bindings		
ISO/IEC 19788-8:2015	Information technology — Learning, education and training — Metadata for learning resources — Part 8: Data elements for MLR records	WG 4	4, 9
ISO/IEC 19788-9:2015	Information technology — Learning, education and training — Metadata for learning resources — Part 9: Data elements for persons	WG 4	4, 9
ISO/IEC 20006-1:2014	Information technology for learning, education and training — Information model for competency — Part 1: Competency general framework and information model	WG 3	4, 8
ISO/IEC 20006-2:2015	Information technology for learning, education and training — Information model for competency — Part 2: Proficiency level information model	WG 3	4, 8
ISO/IEC 20013:2020	Information technology for learning, education and training — Reference framework of e-Portfolio information	WG 3	4, 5, 8, 9, 11
ISO/IEC 22602:2019	Information technology — Learning, education and training — Competency models expressed in MLR	WG 3	4,8
ISO/IEC 23126:2021	Information technology for learning, education and training — Ubiquitous learning resource organization and description framework	WG 4	4
ISO/IEC 23127-1:2021	Information technology — Learning, education, and training — Metadata for facilitators of online learning — Part 1: Framework	WG 3	4, 9, 10
ISO/IEC 2382-36:2019	Information technology — Vocabulary — Part 36: Learning, education and training	SC 36	4
ISO/IEC 24703:2004	Information technology — Participant Identifiers	WG 3	4, 16
ISO/IEC 24751-1:2008	Information technology — Individualized adaptability and accessibility in e-learning, education and training — Part 1: Framework and reference model	WG7	4, 5, 10
ISO/IEC 24751-2:2008	Information technology — Individualized adaptability and accessibility in e-learning, education and training — Part 2: "Access for all" personal needs and preferences for digital delivery	WG7	4, 5, 10
ISO/IEC 24751-3:2008	Information technology — Individualized adaptability and accessibility in e-learning, education and training — Part 3: "Access for all" digital resource description	WG7	4, 5, 10
ISO/IEC 24751-4:2023	Information technology — Individualized adaptability and accessibility in e-learning, education and training — Part 4: "Access for all" framework for individualized accessibility and registry server application programming interface (API)	WG7	4, 5, 10
ISO/IEC 29140:2021	Information technology for learning, education and training — Nomadicity and mobile technologies	WG 3	4, 9
ISO/IEC TR 12785-3:2012	Information technology — Learning, education, and training — Content packaging — Part 3: Best practice and implementation guide	WG 4	4

Reference No.	Document title	WG	SDGs
ISO/IEC TR 19788-11:2017	Information technology — Learning, education and training — Metadata for learning resources — Part 11: Migration from LOM to MLR	WG 4	4, 9
ISO/IEC TR 20748-1	Information technology for learning, education and training — Learning analytics interoperability — Part 1: Reference model	WG 8	4, 9, 16
ISO/IEC TR 20748-2	Information technology for learning, education and training — Learning analytics interoperability — Part 2: System requirements	WG 8	4, 9, 16
ISO/IEC TR 23842-1:2020	Information technology for learning, education and training — Human factor guidelines for virtual reality content — Part 1: Considerations when using VR content	WG7	4, 10
ISO/IEC TR 23842-2:2020	Information technology for learning, education, and training — Human factor guidelines for virtual reality content — Part 2: Considerations when making VR content	WG7	4, 10
ISO/IEC TR 23843:2020	Information technology for learning, education and training — Catalogue model for virtual, augmented and mixed reality content	WG 4	4, 9
ISO/IEC TR 23844:2023	Information technology for learning, education, and training — Immersive content and technology	WG 4	4, 9
ISO/IEC TR 24763:2011	Information technology — Learning, education and training — Conceptual Reference Model for Competency Information and Related Objects	WG 3	4, 8, 9
ISO/IEC TR 4339:2022	Information technology for learning, education and training — Reference model for information and communications technology (ICT) evaluation in education	SC 36	4, 9, 11
ISO/IEC TS 20748-3:2020	Information technology for learning, education and training — Learning analytics interoperability — Part 3: Guidelines for data interoperability	WG 8	4, 9, 16
ISO/IEC TS 20748-4:2019	Information technology for learning, education and training — Learning analytics interoperability — Part 4: Privacy and data protection policies	WG 8	4, 9, 16
ISO/IEC TR 18120:2016	Information technology — Learning, education, and training — Requirements for e-textbooks in education		4, 10
ISO/IEC TR 18121:2015	Information technology — Learning, education and training — Virtual experiment framework		4, 9, 10
ISO/IEC 19778-1:2015	Information technology — Learning, education and training — Collaborative technology — Collaborative workplace — Part 1: Collaborative workplace data model		4, 9, 11
ISO/IEC 19778-2:2015	Information technology — Learning, education and training — Collaborative technology — Collaborative workplace — Part 2: Collaborative environment data model		4, 9, 11
ISO/IEC 19778-3:2015	Information technology — Learning, education and training — Collaborative technology — Collaborative workplace — Part 3: Collaborative group data model		4, 9, 11
ISO/IEC 19780-1:2015	Information technology — Learning, education and		4, 11



Reference No.	Document title	WG	SDGs
	training — Collaborative technology — Collaborative learning communication — Part 1: Text-based communication		
ISO/IEC 19796-3:2009	Information technology — Learning, education and training — Quality management, assurance and metrics — Part 3: Reference methods and metrics		4, 9, 16
ISO/IEC TR 20821:2018	Information technology — Learning, education and training — Learning environment components for automated contents adaptation		4, 5, 9, 10
ISO/IEC TR 29163-1:2009	Information technology — Sharable Content Object Reference Model (SCORM®) 2004 3rd Edition — Part 1: Overview Version 1.1		4, 9
ISO/IEC TR 29163-2:2009	Information technology — Sharable Content Object Reference Model (SCORM®) 2004 3rd Edition — Part 2: Content Aggregation Model Version 1.1		4, 9
ISO/IEC TR 29163-3:2009	Information technology — Sharable Content Object Reference Model (SCORM®) 2004 3rd Edition — Part 3: Run-Time Environment Version 1.1		4, 9
ISO/IEC TR 29163-4:2009	Information technology — Sharable Content Object Reference Model (SCORM®) 2004 3rd Edition — Part 4: Sequencing and Navigation Version 1.1		4, 9
ISO/IEC 40180:2017	Information technology — Quality for learning, education and training — Fundamentals and reference framework		4, 9, 16