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Secretariat: **ANSI**
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Updated SC 36 Business Plan 2020

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Description

This document is circulated for review and consideration at the November 2020 JTC 1 virtual Plenary

ISO/IEC JTC 1/SC 36 "Information technology for learning, education and training"
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Updated JTC1/SC 36 Business Plan (2020 to 2021)

Document type	Related content	Document date	Expected action
General document / Other		2020-09-28	

Description

The membership of SC 36 has been changed.

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 infra structure 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. Education, 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 take into account privacy, adaptability and accessibility requirements. The ISO/IEC JTC1 SC36 sub-committee develops standards in these and many other areas.

2. INTRODUCTION

2.1 SC36 Origins and Business Planning Cycle

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 SC36N3803.

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 a number of 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 a number of key IT specifications organizations in a complex business environment.

2.2 Scope of SC36

The scope of SC36 is "Standardization in the field of information technologies for learning, education, and training to support individuals, groups, or 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, when 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.

2.3 Strategies

Standards are developed to meet national bodies' requirements, meeting 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.

2.4   Liaison with Industry Consortia

Within ISO Directives and guidelines, SC36 welcomes liaison with industry consortia and standardization bodies, such as:

Group	Liaison type	Title
AUF	A	Agence Universitaire de la Francophonie
Infoterm	A	International Information Centre for Terminology
IEEE LTSC	A	IEEE Learning Technologies Standards Committee

Working in cooperation with such bodies enables a core value proposition of SC36 – internationalization – to be realized.

2.5   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.

2.6   Structure of SC36

Reference	Title	Note
SC36/WG1	Vocabulary	
SC36/WG3	Learner information	
SC36/WG4	Management and delivery	
SC36/WG7	ITLET - Culture, language and individual needs	
SC36/WG8	Learning Analytics Interoperability	
SC36/AG1	Business planning and communications	
SC36/AG2	Emerging Technologies (AGET)	Established in 2018
SC36/AG3	Study group on online course standards	Established in 2018
SC36/AHG5	Blockchain in Education	Established in 2019
SC36/TCG	Terminology Coordination Group	Established in 2018

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

3. BUSINESS ENVIRONMENT

3.1 Context

The context for the use of information technology in learning, education and training has changed significantly over the last few years. Global requirements include accessibility and privacy, shared vocabulary, and collaboration. For example, accessibility requirements are legislated in many countries and must be and must be supported by new tools.

With the advent of cloud computing, content (including private and management data) can be hosted anywhere, out of the reach of local legislations. However, many countries have surveillance programs that may contravene national and international privacy rights and legislation. As well, privacy of learners may be at risk when redundancy and backup systems are hosted in countries other than where the learner lives.

Though UNESCO does promote the use of open educational resources, policies meant to frame and respect instructors' and learners' contributions are still lacking. 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.).

Though Open Governments are becoming providers of Big Data, data mining tools and expertise remain lacking, stressing the need for increased digital literacy.

Quality assurance methodology is slowly gaining momentum in education. It can help learners, instructors, managers, administrators, and other stakeholders in their planning work.

3.2 Key Trends

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

- The "open" agenda, building upon the success of Open Source Software and now driven largely by the movement for Open Educational Resources (OER) and large scale free online courses in the form of Massive Online Open Courses (MOOCs).
- Assessment and Teaching of 21st Century Skills – marking a shift from content-centric pedagogies.
- The mobile revolution and the shift from desktop, or tethered, computing and the WIMP (Windows Icon Mouse Pointer) environment to a more flexible, mobile, and personal NUI (Natural User Interface).
- A growing 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 bring your own device (BYOD).
- Embedding of 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 through 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 as a consequence of the enormous and growing market for digital games.

- Consolidation of the Learning Management System (LMS) as the core learning platform within higher education while at the same time a questioning of this role as a consequence of growth in the provision of free and niche services on the open web.

- There are many innovative companies developing technology that drives the change in how technology facilitate and support better learning. There have been explosions of new startups and 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]

3.3   Complex dynamics of a large stakeholder base

The following dynamics describe the business environment of the LET sector and its products, services, and practices. They influence how the relevant standards development processes are conducted and the content of the resulting standards.

The formal education and training sector worldwide consist 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 glob al market for education and training products and services add to this complexity while also providing opportunities for innovation and growth.

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 years 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

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[1] http://tech.ed.gov , http://edtecheurope.com, http://www.edtechsummitafrica.com, http://www.edtechasia.com

3.4   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 interoperability and 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:

- sustainability, through the use of investment strategies that support data migration.

- 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.

3.5   Application areas

ITLET data can be divided into four types each requiring a specific set(s) of specifications and standards. Below are some published standards developed within the SC36 sub-committee, addressing each type. As of 2020, More than 14 other standards, currently under development, are not listed here.

3.5.1 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

3.5.2 Programs and curriculum and competencies description to help tracking learner progress.
- ISO/IEC 20006 series – Information model for competency

3.5.3 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)

3.5.4 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

3.6   Users of SC36 standards

We now train and study within learning ecologies that are complex and made of a large number of tools and services. The challenge for standardization is to support the learner's flow within these ecologies, providing authentication, responding to user inputs, and collecting usage data.

ISO/IEC JTC1 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 have the opportunity to 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 will have access and input to an integrated set of standards that are modular and adaptable to better meet the needs of their respective communities.

4. REPRESENTATION AND PARTICIPATION IN SC36

4.1 Participation

The following countries are participating in SC36.

- **P-Members: 20**

Australia(SA), Canada(SCC), China(SAC), Finland(SFS), France(AFNOR), Germany(DIN), India(BIS), Italy(UNI), Japan(JISC), Kazakhstan(KAZMEST), Republic of Korea(KATS), Netherlands(NEN), Norway(SN), Portugal(IPQ), Russian Federation(GOST R), Slovakia(SOSMT), South Africa(SABS), Spain(AENOR), Ukraine(DSTU), United Kingdom(BSI)

- **O-Members: 25**

Algeria(IANOR), Argentina(IRAM), Austria(ASI), Belgium(NBN), Bosnia and Herzegovina(BAS), Colombia(ICONTEC), Czech Republic(UNMZ), Ghana(GSA), Greece(NQIS ELOT), Hong Kong(ITCHKSAR), Hungary(MSZT), Indonesia(BSN), Islamic Republic of Iran(ISIRI), Ireland(NSAI), Kenya(KEBS), New Zealand(SNZ), Pakistan(PSQCA), Romania(ASRO), Saudi Arabia(SASO), Serbia(ISS), Sweden(SIS), Switzerland(SNV), Tunisia(INNORPI), Turkey(TSE), Uganda(UNBS)

4.2 Analysis of the participation

The participation and activity in SC36 is good, 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.

Learning Technology (ITLET) is seen by many as a mean for spreading and engaging education in less developed regions and countries. The use of learning technology bears the promise of providing education at a less cost, and maybe more efficient to areas where education institutions and systems are not so well

established, or in regions where educational systems and institutions are being established.

To develop standards that meet a variety of use scenarios and to ensure that the standards we develop meet the needs and requirements for countries that are in the process of establishing and developing their educational systems we would appreciate greater involvement from stakeholders and educational industry from countries in these processes.

In SC36 we are encouraging current active P-Members to reach out to such countries and try to establish twinning and other liaison arrangements to get more involvement and contributions from these countries.

Many universities have departments that do research on the development and impact of learning technologies. In SC36 we would also like to see more involvement and engagement from these research institutes, so that results from relevant research could be developed as IT standards for better dissemination of the research results, but also to have new standards established that better meet current and future requirements.

5. 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.)

- Contact details

- Structure (Subcommittees and working groups)

- Liaisons

- Meetings

- Tools

- Work programme (published standards and standards under development)

6. BIBLIOGRAPHY

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- UNESCO working paper series on mobile learninghttp://www.icde.org/en/icde_news/news_archive/2012/may/UNESCO+working+paper+series+on+mobile+learning.b7C_wJzI1-.ips