



STRATEGIC BUSINESS PLAN

ISO/TC 37

EXECUTIVE SUMMARY

ISO Technical Committee 37, "Language and Terminology" (ISO/TC 37) provides standards relating to terminology, natural language processing, translation, interpreting and other language-based activities in the multilingual information society. ISO/TC 37 was established in 1947 and initially focused on standards relating to terminology. Today, its mandate has been extended to the standardization of descriptions, resources, technologies and services related to the economic, academic or societal sectors.

ISO/TC 37 is one of nine committees at ISO which creates horizontal standards that serve other ISO committees of ISO and IEC. ISO thus requires all its technical committees to follow ISO 704 and ISO 10241-1 when documenting terminology in ISO standards.

Any digital device that connects to or interacts with the Internet uses the ISO 639 series of standards for language coding. ISO/TC 37 standards are used for terminology management (e.g., ISO 704, ISO 10241 parts 1&2), terminology data exchange (e.g., ISO 30042, ISO 16642), and linguistic annotation (e.g., the ISO 24617 family of standards).

ISO/TC 37 has also published standards that are widely used by companies and freelancers and their clients in the translation and interpreting industry (e.g., ISO 17100:2015/Amd 1:2017, ISO 13611:2014, ISO 20109:2016).

ISO/TC 37 standards are used by industry, public sector, academia and other organisations. Its work is important for areas such as the management of language resources and knowledge repositories. ISO/TC 37 develops standards that serve all fields and applications where multilingual communication takes place, both directly between humans and via computers, mobile devices, and various technologies.

1. INTRODUCTION

1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure that forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: [ISO](#) (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of [IEC](#) (International Electro technical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of [ITU](#) (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the [International Standard](#).

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its [Technical Committees](#) are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable that aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2. BUSINESS ENVIRONMENT OF ISO/TC 37

2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, and practices related to the scope of ISO/TC 37, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards.

The rapid development of globalization processes since the early 1990's was driven by technological innovation, especially with regards to the Internet, a digital economy, and free-market policies. However, globalization and internationalization would not have been possible without the support of the language industry. Dynamic economic development and market integration processes went hand-in-hand with the increase in importance and demand for affordable multilingual communication. This in turn generated global demand for various language-related services and standards that promote reliable quality and interoperability.

The use of internationally recognised standards gives organisations a competitive edge in today's increasingly competitive global markets. The same holds true for the language industry. Technological innovation was also a key factor in the rapid development of the industry segments that ISO/TC 37 deals with, namely: translation and localisation, interpreting, terminology management, language resource management, data mining etc. Society and business are so dependent on multilingual communication today that it is difficult to overestimate the importance of services related to translation, language resource, and terminology management in the context of fast changing expectations, delivery chains, e-commerce, organisational flexibility, knowledge-management, dissemination of information and content related to products and services globally in many languages, and preferably in real time.

Those processes and requirements apply equally to local and global entities, manufacturers and service providers. The quality and reliability of information provided with a product or service is of utmost importance nowadays and is usually considered a key to success on the global market. That is why businesses recognize that their sales depend not only on marketing, and the fulfilment of various security, reliability and quality requirements but also on the ability to satisfy user expectations. The need to speak the users' language and the quality and accessibility of this information are what ultimately impact consumer choices, standards are thus needed to facilitate related services and processes.

The language industry uses many technologies, resources and standards and therefore the development of ISO standards often involves collaboration with other organisations. A good example of this is the collaboration of ISO/TC 37 with ISO/TC 46 and the W3C, IETF, and Unicode for the language codes (ISO 639 series), the regular collaboration between ISO/TC 37/SC 4 standards and the TEI (Text Encoding Initiative) consortium, or the one with OASIS that resulted in the publication of XLIFF 2.0 as ISO 21720 XLIFF (XML Localisation interchange file format)

2.1.1 Core mission

The core mission of ISO/TC 37 is to support the development of the language industry and to provide guidance and principles for terminological work. . Specifically, this involves preparing standards that specify the principles, methods and technical specifications for developing and managing language resources (LR) and related tools, and providing translation, interpreting, terminology and related services.

ISO/TC 37 develops International Standards and Technical Reports covering terminological and lexicographical principles and methods, translation and interpreting, translation related technology, computer-assisted terminography, lexicography and language engineering.

ISO/TC 37 standards have contributed significantly to harmonizing the methods for developing and managing language resources, as well as establishing norms of practice for the language industry.

The Core Mission of TC 37 is aligned with ISO's fundamental mission of facilitating the exchange of goods and services through the elimination of technical barriers to trade. In fact, the standards

TC 37 is called upon to create eliminate the most significant barrier to human communication and, therefore, trade: Language.

2.1.2 Stakeholders

This section describes the stakeholders of ISO/TC 37 standards. The means whereby ISO/TC 37 serves some of these stakeholders are further elaborated in subsequent sections.

The globalized economy, technological development, and the Internet have made multilingual communication and cultural diversity more important than ever before. Standards produced by ISO/TC 37 address the needs of industry, international trade and global economy regarding cross-cultural technical communication and information management. The standardization of language resources, products, and services is becoming a key element in all regulatory and normative activities involving the exchange of information.

Any organization concerned with communication, its quality and efficiency is a potential stakeholder. Most of the organisations that have a significant stake in ISO/TC 37 work are liaison members and in most cases their experts contribute actively to ISO standards development. The deliverables produced by ISO/TC 37 assist stakeholders in preparing high-quality language resources (LRs) and tools for a wide variety of applications in professional and scholarly information exchange and communication, education, democratic processes, industry, trade, and so forth.

The language industry is of increasing economic and social significance. Commercial enterprises rely on the services of the language industry in order to sell good or service to multicultural and multilingual markets. Many governments, public institutions, educational institutions, and inter-governmental organizations (IGOs) such as the World Health Organization, and the World Bank, rely on the language industry to overcome language barriers with increasing efficiency in order to effectively deliver their services and fulfil their mandate. Access to information in one's native tongue is increasingly recognized as a basic right.

Language resource standards are contributing to the development of a wide range of industries, particularly emerging ones, such as information technology, automation/robotics, telecommunications, data mining, information retrieval, social media analytics, text mining and analytics, and for all sectors supported by information technologies: eCommerce, eHealth, eLearning, eGovernment, eEnvironment, and so on. They are critical for the development of an 'inclusive information society': for improving the efficiency of language-aware technologies that are used to create and localize content in multiple languages. Overcoming language barriers by enabling cross-lingual access to Web resources allows access to the Web for all people.

ISO/TC 37 standards provide rules and procedures for developing a coherent terminology in standards documents in many fields. Terminology commissions, committees and other terminological entities, thus use ISO/TC 37 standards to harmonize the terminology in their documents.

Specifically, the users and target groups of ISO/TC 37 include:

- Terminologists;
- Developers of standards in all technical, scientific, and industrial domains
- Librarians, documentalists, archivists
- Language-related professionals - translators, interpreters, technical writers, linguists, lexicographers, terminologists, and so forth
- Consumers of translation and interpreting language services, products, and tools;
- Developers and implementers of ontologies and classification systems, such as SNOMED and EuroVoc.
- Government and other policy makers and decision-makers;
- Developers of software, such as for controlled authoring, computer-aided translation, machine translation, content management, automatic classification and knowledge management, language data exchange formats, cataloguing, indexing, and so forth.
- Other personnel supporting government, industry, or other acquisition of language services, products, and tools (e.g., through bids and contracts).

2.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

The market for outsourced language services and supporting technology grew 6.97% to US\$43.08 billion from 2016 to 2017. It is predicted to grow an average of 2.45% over the next four years, at a conservative cumulative growth rate of 9.82%. Regions will grow at different rates, affected by local conditions. (Source: CSA Research, *The Language Services Market: 2017*, page 2)

The use and implementation of ISO/TC 37 standards are significant, as exemplified by some particularly successful publications.

ISO/TC 37's ISO 639 series of language codes represents one of the most fundamental and successful of ISO standards, without which the representation of linguistically based content in computers and smartphones, as well as online content publication, would be impossible. Usage statistics for the ISO 639-3 website, from March 1, 2017 to March 1, 2018 indicate there were 458,669 total page views for ISO 639-3 pages, and 376,843 unique page views. The top countries accessing the site were the United States, Russia, India, Indonesia, Germany and South Korea, which shows it is truly international. In the United States, it is used by the health care industry to determine needs for translators, and by some court systems for the same purpose. Finally, The language coding standards (ISO 639 series) are used by millions of Internet users and by the computer industry at large. ISO 639 is cited in 7810 publications as identified in Google Scholar and 899 patents (source: Google patents).

A key standard for the translation industry, 17100:2015/Amd 1:2017, developed by ISO/TC 37/SC 5, has been adopted as EN 17100:2015/Amd 1:2017 to replace EN 15038:2006. 17100:2015/Amd 1:2017 requirements aim to ensure that any translation performed according to this standard should reliably meet the client's specifications and quality expectations. Since its publication, various certification bodies have reported that over 5000 translation service providers worldwide have become independently certified to 17100:2015/Amd 1:2017, and at least 15,000¹ translation service providers have declared that they comply with 17100:2015/Amd 1:2017.

Another key standard from the ISO/TC 37 portfolio is ISO 24613:2008 (Language resource management - Lexical markup framework (LMF)), which has become a reference for both academia and industry for the modelling of interoperable lexical data. Initiated in 2004, the LMF project built upon the experience gained since the early 1990s to define an interoperability framework for lexical resources (see, for example, Ide and Véronis, 1995; Monachini and Calzolari, 1999; Atkins *et al.*, 2002). Since its publication, it has been seminal for further initiatives in other standardisation groups such as W3C with Ontolex (See McCrae *et al.*, 2017) or the Text Encoding Initiative (see Romary, 2015a). It is also the basis for a major EU initiative, ELEXIS², an infrastructure for modern and historical lexicography. ISO 24613 is the most cited SC 4 standards in scholarly publication (822 citations in Google Scholar, as of December 2018) and has been implemented for a variety of languages and dialects. Its on-going revision as a multipart standard should make it even more flexible for a variety of applications in the domain of human cultural heritage in particular.

As a whole, ISO/TC 37 standards:

- Support standardization in all areas of human activity by providing the means to harmonize domain-specific terms and concepts;
- Support cultural and linguistic diversity;
- Protect consumers of language services;

¹ Data valid as of 2017 – based on the 2017 EUATC & TM-Global surveys, and data collected directly from various certification bodies by the PSBT Association.

² <http://www.elex.is>

- Increase international trade by reducing language barriers through a wide variety of language services and related technologies;
- Facilitate consistent information flow over national borders;
- Support the development of language planning policies;
- Foster the training of language professionals;
- Lead to the development of multipurpose and interoperable LRs;
- Increase the efficiency of content retrieval systems, such as search engines and indices;
- Support innovation and development in natural language processing technologies and language engineering, which are critical to the future evolution of computing;
- Support e-commerce and e-health by providing guidelines on concept modelling and metadata.

In general, the application of ISO/TC 37 standards will help to

- Enhance the overall quality of language resources in all subject fields;
- Improve information management within various industrial, technical, commercial and scientific environments;
- Reduce costs, and increase efficiency and quality in technical standardization and professional communication;
- Increase international trade by reducing language barriers through the provision of professional language services;
- Leverage language resources to deliver content-mining solutions that have global impact such as reducing global health risks and protecting the environment.

3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC

3.1 Supporting standards in all areas of human activity

Standardizing domain-specific terminology is a prerequisite for developing effective standards in all areas of human activity. ISO/TC 37 standards provide the framework for standardizing terminology in technical committees within ISO, IEC and other standardizing bodies, as well as for standardizing terminology to support a wide range of industrial, commercial or public sector processes. This contributes to an increased coherence, consistency, and harmonization of concepts and terms, thus increasing the quality of information in standards, other regulatory documents and in IT systems. This is critical to common understanding and effective application of standards in every area of human activity.

3.2 Interoperability and open data

All the areas where the language industry figures predominantly have at least one thing in common: the computer is the primary means of information exchange. In order for language to be understood and processed by computerized applications, it must be structured in a predictable fashion. To ensure that LRs can thus be “interoperable” across geographical boundaries and in diverse computerized environments, they need to have a standard structure. Interoperability of resources is the extent to which they, and the systems used to manage them, are compatible, so as to allow, for instance, the merging of data coming from different sources. These requirements involve the use of standards.

Today open, collaborative, shared data is the core of any sound Language Technology (LT) strategy. A recurrent request from industrial players is: “Give me the standards and give me open data.” This way services can become interoperable across countries, in the vision of a single digital market. Standards at the level of linguistic representations are fundamental to achieving this interoperability. Interoperability of resources and data is also an essential prerequisite for successful exploitation of the enormous amount of data that the advent of the Internet has been making available for more than two decades. Data access and links within and across this data are as important as the actual quantity.

Language industry companies need this sort of language strategy oriented towards interoperability, because if they cannot interoperate with their clients and suppliers, they would go out of business: “The lack of interoperability costs the translation industry a fortune”³, referring to the high cost of adjusting file formats and the like, especially when handing off tasks in workflows. It is estimated that buyers and providers of translation lose 10% to 40% of their budgets or revenues because of the lack of compliance with standards, i.e. because language resources are not stored in compatible standard formats. ISO/TC 37 is aiming to fill the role of compliance and interoperability facilitator along with its collaborating liaisons.

3.3 Basic human rights and social equity

Equitable access to information is increasingly being perceived as a human right. Inequitable access to information caused by language barriers can contribute to “economic and social discrimination.” For example, a developing country may experience unfair disadvantages competing in global markets due to factors relating to language, such as misunderstanding due to a lack of technical terminology in their language, the availability of fewer educational resources to train its workforce or reduced access to or increased costs for translation services. Such inequities may have been more or less tolerated in the distant past, but with the Internet turning the world into a global community, expectations of peoples worldwide as regards basic human rights and prosperity expectations are reaching a common level. A healthy, sustainable language industry is

³ TAUS survey, 2011, as reported in [TAUS Quality Management White Paper](#), 2017

needed to reduce such inequities. Standards help to reduce inequities in language service availability and quality, and support the development of LRs in less resourced languages.

Particular consideration is needed to meet special linguistic and terminological needs of developing countries and to co-operate with specialized regional and international organizations. Therefore, in order to enhance the applicability of such standards in language planning and knowledge transfer environments, socio-linguistic aspects of the role of language in society are also included in the work programme of ISO/TC 37. ISO 29383 "Terminology policies – Development and implementation" is such an example.

3.4 Training of language professionals

To support a country's economic development, language-related service providers render services to help bridge communication barriers. One can therefore find, in any country, universities that offer degrees in language-related disciplines such as translation and interpreting, localization, international relations, business communication, terminology management, lexicography, (applied) linguistics, computational linguistics, structured information architecture, and so forth. Language Service Providers (LSPs) as well as their customers need well-trained language professionals to support a variety of demands in an increasing number of languages and language combinations. Bridging these diverse vocations and their training programs to ensure coherency across the full range of communications skills and tasks requires language standards.

3.5 Health, welfare, and the environment

Standardized terminology plays an essential role in the fields of health, welfare, and the environment. Miscommunications in health services may lead to injury or even death, people may not be able to access lifesaving services in the welfare system, and major catastrophes could occur due to breakdowns in communication in environmental programs and systems.

Beyond these obvious concerns, let us consider access to opportunities afforded by digital communications. Google and other search engines track search patterns of Internet users across the planet. The information that can be mined from such search patterns can be used to predict serious threats to human health and welfare such as Ebola. Data collected over the Internet can reveal relative key performance indicators with respect to compliance with environmental treaties such as the Kyoto Protocol. Proactive measures can then be taken to prevent further damage to human health and the environment.

Techniques for information mining are in the early stages of development. Standards with respect to semantics, syntax, morphology, and their associated annotations, will help to accelerate progress in these areas.

3.6 Fostering research and innovation

Digital language resources of various kinds, as well as high-quality tools to create, access and process them, are essential to support the present and future needs of the emerging knowledge and content management industries, which are dominated by sophisticated information technologies. As stated earlier, ISO/TC 37 standards enable LRs to be structured in a predictable and rigorous manner. These LRs are in turn used to engineer language processing tools. Such well designed language processing tools are in turn used to create additional structured LRs. Standards support the creation of sound data, the data supports the creation of effective tools, and the tools generate more useful data. It is a win-win situation that is a catalyst accelerating the development of the language industry which, as stated earlier, supports the global economy, social equity, human welfare, and other global concerns such as the environment.

To be globally relevant, language-related research and technological innovation to address future needs require standards. ISO/TC 37 standards are relevant to a number of extended applications experiencing intensive growth and innovation such as search engine optimization (SEO), controlled authoring, sentiment analysis and opinion mining, text analytics, voice recognition, machine translation, automatic content classification, the semantic web, crowd sourcing, human factors (computer-human interfaces) and so forth. In general, the methodologies laid down in ISO/TC 37 documents facilitate the development of more efficient and effective modes of access to information, which has inestimable applications and benefits. Compared to ISO/TC 37's

traditional focus areas (translation, terminology management), these areas are relatively young in maturity and are therefore going to be a major focus of ISO/TC 37's future work plan.

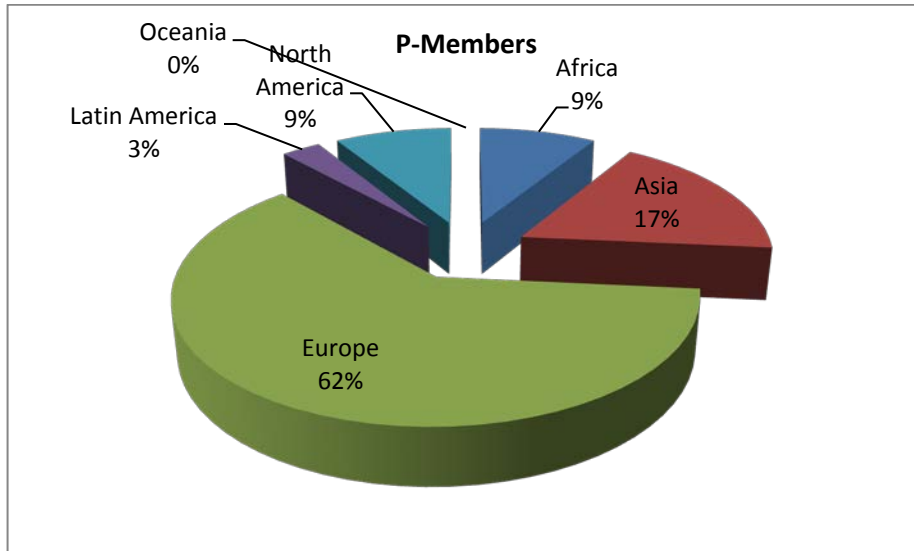
4. REPRESENTATION AND PARTICIPATION IN THE ISO/TC

4.1 Membership

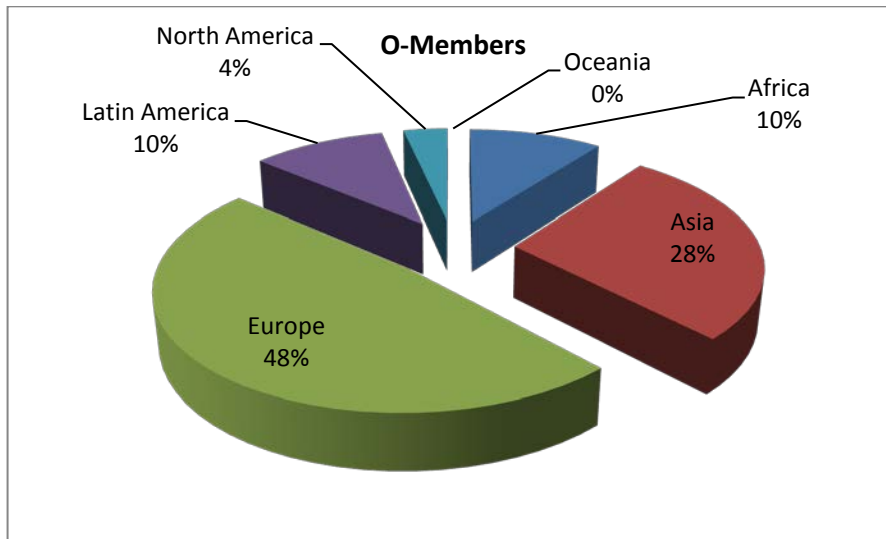
[Please click this link to know the Countries/ISO member bodies that are P and O members of ISO/TC 37.](#)

4.2 Analysis of the participation

ISO/TC 37 currently has 34 P-members and 29 O-members. The following diagrams show the structure of both P-members and O-members at the TC level.



Distribution of the P-members of ISO/TC 37



Distribution of the O-members of ISO/TC 37

ISO/TC 37 has its widest influence in Europe and North America, Western and Southeastern Asia, Latin America, Africa, Oceania are areas where ISO/TC 37 should have more members. The increasing importance of the Language Industry and related services are a factor for the TC which has built up expertise in this area.

There are 344 registered experts in the working groups of ISO/TC 37. The following is a breakdown of where these experts work:

- A - Industry and commerce 127/344=36.9%
- B - Government 27/344=7.8%
- C - Consumers 3/344=0.9%
- E - Academic and research bodies 78/344=22.7%
- F - Standards application 13/344=3.8%
- G - Non-governmental organization (NGO) 11/344=3.2%

ISO/TC 37 also has a wide influence through its liaison network. With 47 international organisations, ISO/TC 37 liaisons cover professional organisations (e.g. AIIC - L'Association Internationale des Interprètes de Conférence, AILA - International Association of Applied Linguistics, EAFT - European Association for Terminologie, or IFLA - International Federation of Library Associations and Institutions), as well as higher education and research organisations or infrastructures (e.g. CERN - European Organization for Nuclear Research or CLARIN ERIC - Common LAnguage Resources and Technology INfrastructure). A specificity of ISO/TC 37 is also to comprise numerous international organisations such the UNESCO - United Nations Educational, Scientific and Cultural Organization, FAO- Food and Agriculture Organization of the United Nations, CJEU- Court of Justice of the European Union, WIPO - World Intellectual Property Organization or WHO - World Health Organization together with the United Nations, European Parliament and the European Union (EU).

As a typical example, the European Commission language services (Directorate-General for Translation and Directorate-General for Interpretation) have been active in SC1 and SC2 in the past and are currently active in SC5. The volume of their work, generated by the fact that the EU has 24 official languages, and performed both by staff and freelance translators, interpreters and terminologists, is unique in the world. Both services are convinced that international standards are crucial to uphold the quality of their work, and facilitate the many public procurement processes they are involved in, ensuring a level playing field for all those involved. They invest their experience and expertise in the development of standards serving this purpose.

ISO 4043:2016 " Simultaneous interpreting -- Mobile booths -- Requirements " and ISO 20109:2016 " Simultaneous interpreting -- Equipment -- Requirements " are crucial when publishing a call for tenders for the rental of interpreting booths and equipment when European Commission interpreters work outside the Brussels premises with permanent booths and interpreting equipment.

5. OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

5.1 Defined objectives of the ISO/TC

ISO/TC 37 has its objective to set up standards for the interoperability among technological approaches and methodologies for developing and managing language resources, as well as establishing norms of practice for the language industry. Each of its SCs works in a specific domain under the scope of the TC.

5.1.1 SC 1- PRINCIPLES AND METHODS

5.1.1.1 Objective

ISO/TC 37/SC 1, the first SC created under ISO/TC 37, has a long history of standard development and its standards are among the most established.

The objective of ISO/TC 37/SC 1 is to:

- Prepare standards laying down the basic principles and methods for preparing, updating and harmonizing terminologies, terminological concept models and other LRs
- Develop guidelines for elaborating and implementing terminology policies

These standards and guidelines (as listed below this paragraph) address the needs of industry, trade and administration concerning cross-cultural communication and information management.

- ISO 704:2009 Terminology work—Principles and methods
- ISO 860:2007 Terminology work—Harmonization of concepts and terms
- ISO 1087-1:2000 Terminology work—Vocabulary—Part 1: Theory and application
- ISO/TR 20694:2018 A typology of language registers
- ISO 24156-1:2014 Graphic notations for concept modelling in terminology work and its relationship with UML—Part 1: Guidelines for using UML notation in terminology work
- ISO 29383:2010 Terminology policies—Development and implementation

The mission of SC 1 is to provide language professionals with standards and guidelines to assist them in creating high-quality terminologies and other LRs as well as elaborating and implementing viable terminology policies.

SC 1 documents also include standards stipulating methods for carrying out terminology work and terminography within both normative environments, which have a standardization focus, and, more recently, non-normative environments, which are more focussed on efficiency and productivity of communication processes.

The standards and guidelines produced by SC 1 provide the theoretical and methodological approaches for developers of a wide range of terminological resources. SC 1 standards focus on methods of compiling, processing and presenting terminologies and for developing terminological concept models. This SC also publishes documents of relevance for language planning and policy development, which must take into account cultural, linguistic, and social particularities. SC 1 standards are used by commercial enterprises for establishing sound terminology management practices, and, in recent years, IT developers have used SC 1 standards to model fundamental concepts when designing IT systems.

Many of the standards developed by other ISO/TC 37 subcommittees as well as by other ISO technical committees refer to SC 1 standards as their normative references. SC 1 standards are also widely used in academic and professional terminology training programs.

5.1.1.2 Impact and economic value

Among the numerous areas where the principles of terminology have had an impact are the domains of railway safety and health informatics. Members of SC1 have also been called upon to provided advice and assistance regarding terminological principles and concepts in two note worthy cases: ISO TC20 - Aircraft and space vehicles, and The Radio-communications sector of the International Telecommunications Union (ITU-R).

It is within the ISO/IEC community itself that the general terminological principles established by SC 1 have been implemented for the purposes of standardization in various industrial sectors. In particular, ISO 704:2009 *Terminology work—Principles and methods*, and ISO 1087-1 *Terminology work—Vocabulary—Part 1: Theory and application*, are horizontal standards that apply across all ISO technical committees and are frequently cited as normative references in other committee standards. As a case in point, these two standards have been implemented during the revisions of the ISO/IEC Guide 2:2004 *Standardization and related activities — General vocabulary*, a key document in standards development in general.

SC 1 terminological standards are part of various training programs in terminology management. They are taught on a regular basis to translators, terminologists, students and professionals in various educational venues from university courses to professional seminars.

As shown in the case studies (Section 4), SC 1 standards have an impact in all sectors where communication needs to be clear.

5.1.1.3 Future activities and research

The objective of clear cross-domain communication can be further achieved by formalizing the ISO 704:2009 principles in a modeling language such as the Unified Modeling Language. The use of a user-defined profile of UML has been proposed in ISO 24156-1:2014 to represent terminological definitions, and generic and partitive relations between concepts (Manz and Schnieder 2009:473). Another attempt is the GRAIL concept modeling language for medical terminology (Rector et al.: 1997), which is used to create concept models in order to visualize concepts and their characteristics, and relations between the concepts, such as advocated by the SC 1 standards.

It has become clear that the SC 1 standards bring a positive contribution when it comes to using terms and describing concepts in interdisciplinary domain-specific communication. It is in this vein that Schnieder, Schnieder and Ständer (2009), Manz and Schnieder (2009), Hargittai (2007) and Hardiker and Coenen (2007) adopt ISO terminological principles with a view of clear and “safe” communication.

5.1.2 SC 2 - Terminology workflow and language coding

5.1.2.1 Objective and scope

SC 2 has existed since 1952. Its standards cross all borders and permeate every industry by virtue of their fundamental nature. SC 2 standards increase coherence and consistency in definitions of technical terms thereby improving the effectiveness of all standards. Terminology that has been standardized according to SC 2 principles contributes to quality control processes implemented in businesses, thereby increasing reliability and usability of products and services.

The standards and guidelines produced by SC 2 address the application of principles and methods of terminology work to terminography and lexicography, language coding, cultural diversity management, assessment and quality management. Standards in terminology work and terminology management establish the baseline for the development of terminological data and tools to efficiently process terminological data. Terminology management methodologies developed by SC 2 can be applied to content management processes in general.

The target groups of SC 2 include industry at large, governments, standardization organizations, educational institutions and, in the case of language coding, every software developed has embedded the 639 language codes.

Language codes are a core component of the SC 2 programme of work. The ISO 639 series of standards specifies machine-readable codes for languages and linguistic regions that are critical to the entire software industry. ISO 639 is one of the most popular standards listed on ISO’s website and is in constant use worldwide.

SC 2 also specifies requirements for the drafting and structuring of terminological entries in standards as a whole, such as those found in ISO and IEC documents. One of its standards (ISO 10241 part 1) demonstrates how diverse cultural and linguistic communities can standardize their own terminology, and how regional and national standardizing bodies can adopt -- with

adaptations as necessary -- internationally standardized terminology. These guidelines are essential for inter-lingual communication in support of international trade.

Ways to describe language varieties, and suitable metadata for capturing such information, is another priority for the language industries. Therefore, a standard on "Identification and description of language varieties " is in progress. Such a standard is relevant for the sustainability of structured and formalised information on human communication resources (HCR).

In response to changing market needs, the mandate and scope of SC 2 will be enlarged to cover "the standardisation of terminological methods and applications for languages and linguistic content", allowing new areas with potential market value to be considered.

The following SC 2 standards are widely applied in many cross-disciplinary areas:

- ISO 639 Codes for the representation of names of languages, parts 1 to 5 are used worldwide in all computer applications
- ISO 1951 Presentation /representation of entries in dictionaries, serves the dictionary publishing industry
- ISO 10241-1 "Terminological entries in standards -- Part 1: General requirements and examples of presentation"and ISO 10241-2 "Terminological entries in standards -- Part 2: Adoption of standardized terminological entries" apply to all ISO and IEC standards as well as others (e.g. UN, WIPO, FAO, WHO, etc).
- ISO 15188 Project management guidelines for terminology standardization is very valuable in ISO standards development and is widely used elsewhere

5.1.2.2 Impact and economic value

The commercial value of the ISO 639 language code series of standards is beyond financial measure. However, this standard increases the efficiency with which languages are identified and appropriate tools applied.

The standardization of terminology and the development and maintenance of uniform terminology practices for all the ISO and IEC standards sets a benchmark for quality standards in all industry sectors.

5.1.3 SC 3 – Management of Terminology Resources

5.1.3.1 Objective

Today, managing language resources (LRs) effectively requires the use of computer-based database technologies. SC 3 defines standards and best practices for using computers to manage LRs, with a focus on terminology resources.

The objective of SC 3 is to develop standards and other deliverables containing specifications and modelling principles for computer systems to manage terminology, knowledge and content with respect to semantic interoperability.

5.1.3.2 Impact and economic value

The stakeholders of SC 3 standards include providers and users of terminology databases: governments, commercial enterprises, language service providers, and educational institutions, as well as software companies that develop terminology tools. SC 3 standards also support the preparation and use of high-quality LRs and tools.

Software developers use SC 3 standards to design terminology management systems and applications for managing other types of language resources that adhere to the principles defined by SC 1, the methods defined by SC 2, the structural schemes defined by SC 4 and the guidelines or requirements defined by SC 5. The users of these applications benefit by being able to expect -- or require -- a certain level of quality and predictability in the software that they purchase, thus protecting their investments. Thus, virtually every government, commercial entity, individual and NGO which maintains terminology or other language data, or plans to do so in the future, benefits from SC 3 standards.

Language professionals use SC 3 standards to develop skills and knowledge in the areas of database modelling and management.

Today, the commercial entities involved in managing LRs are no longer restricted to Language Service Providers, but include many companies in other industries. SC 3 standards can be used to design and implement terminology resources with different foci: research, production, and standardization. Terminological data can be used increasingly in new ways, such as in term extraction, controlled authoring and search engine optimization, as well as chatbots, machine learning and artificial intelligence (AI), trends that are challenging SC 3 to explore new directions for its standards work. The evolution of computer tools for translation hybridized to include machine translation ushers in a need for terminological resources to straddle the boundary between MT lexica and human-oriented terminology management.

Applying SC 3 standards can lead to decreased costs and improved quality in the following areas:

- Design, development, and maintenance of terminology databases, and related software
- Separation of data from tools, allowing for the interchange of data between different databases and platforms
- Repurposing terminology from terminology databases in other computerized applications
- Content retrieval in navigation systems, search engines, indexes, and so forth.

Standards developed by SC 3 level the playing field for developers of software that interact with language resources, by giving them guidelines for software design. Software based on standards are predictable in their management of language data, which means that consumers of such software products have more choice and competition in the market is more fair. SC 3 standards help to avoid the need to re-engineer poorly designed terminology resources, which result in unnecessary costs and loss of revenue.

For instance, ISO 16642 (Terminology markup framework) and ISO 20042 (terminology data exchange) standards facilitate the archiving terminology data, the development of tool-independent data and the exchange of information between systems dedicated to authoring, translation or data mining.

SC 3 has also produced ISO 22274:2013 "Systems to manage terminology, knowledge and content -- Concept-related aspects for developing and internationalizing classification systems" . This standard improves the usability of product classifications, thereby supporting e-commerce and other computerized applications for processing product data.

5.1.4 SC 4 - LANGUAGE RESOURCE MANAGEMENT

5.1.4.1 Objective

Over the last two decades, there has been significant growth in research and development focussing on the representation, annotation, and manipulation of language resources, and SC 4 supports these activities by producing standards and best practices in these areas. SC 4 standards aim towards the ideal of an Interoperability Framework, i.e. a dynamic environment for language standards and guidelines, intended to support language service interoperability which is the ability of information and communication systems to exchange data, and communities and applications to share information and knowledge.

The objective of SC 4 is to specify principles, methods, and data structures for creating, coding, processing and managing LRs, particularly written and speech corpora, lexical resources, and resources representing morphology, semantics, syntax, and so forth. These standards also cover the data manipulated by natural language processing (NLP) applications.

The goal of SC 4 is also to ensure that new developments in language engineering, knowledge management and information engineering satisfy the norms of international standardization to:

- Maximize the applicability and reusability of language resources,
- Enable language resources of different kinds to be machine-processable,

- Support innovation leading to development of methods and tools for managing language resources.

5.1.4.2 Impact and economic value

SC 4 standards address multilingual information retrieval, technical communication and information management. In the past two decades, there has been increasing awareness of the need to define common practices and formats for LRs, due to the robustness and industrial-scale utilization of Natural Language Processing (NLP) technology.

While it is generally acknowledged that standards are key to resource sharing, re-usability, maintainability and long-term preservation, language resource providers are still lagging behind in implementing SC 4 standards. As a result, many types of resources and many levels of information and annotations are not yet standardized.

Most LRs use proprietary representation formats and conventions, so one needs to first understand the format and then build ad hoc conversions in order to use the language resource for specific purposes. This makes it especially difficult to leverage different sources of data to construct on-demand resources needed by emerging web technologies. The lack of standardization also makes it difficult to evaluate the quality and value of resources for a given application.

Standards will ensure operability and interoperability in cases where workflows are needed that chain together tools that were not originally designed to work in a pipeline. Today workflows are typically run with tools that were already designed to work together, or they can be enabled by using format converters. Experience has shown that using a common standardized format will facilitate integration⁴.

SC 4's program of work focuses on introducing standards in areas that are mature and will produce benefits for the field and for industry, such as massive increases in the use of data, combination of language resources and tools into new collections and workflows, and infrastructure development. It also aims to address gaps in the current standards and best practices and focus attention on where the industry should be moving in order to further improve efficiency and effectiveness, such as for the multilingual Web.

Currently, some ISO/TC 37/SC 4 standards have gained wide consensus. They are increasingly recognized as fundamental for real-world interoperability and exchange. A clear example is the ISO 24613:2008 Lexical markup framework (LMF) standard; it is currently used by hundreds of projects in many different areas. LMF can be seen as a flexible framework that allows researchers to build lexica of varying complexity where the individual attributes need to point to a registered reference category. A set of other standards focusing on specific aspects of linguistic representation are also currently in place and officially established, such as ISO/DIS 24615-1:2014 Syntactic annotation framework (SynAF) and ISO 24611:2012 Morpho-syntactic annotation framework (MAF), ISO24617-1-8 Semantic annotation framework (SemAF), with sub-parts dedicated to temporal annotation (TimeML), spatial annotation (ISO-Space), semantic roles, dialogue acts, discourse structure, and others. Standards such as the latter facilitate innovation in areas such as sentiment analysis and opinion mining, which are greatly in demand today.

5.1.4.3 Future activities and research

In certain areas under the purview of SC 4, stable standards have already been defined. However, in other areas, work is still on going in response to emerging new areas or technologies, such as multimodal systems, that have specific requirements not covered by existing formats and established practices.

We can therefore observe a continuum of standardization initiatives at various stages of consolidation, together with new proposals for standards as various areas of language technology

⁴ See Technology and Corpora for Speech to Speech Translation (www.tcstar.org/) and Panacea (www.panacea-lr.eu/)

mature. While some standards are “official”, i.e. designed and promoted by standardization bodies such as ISO or W3C, others are so-called de-facto standards or “best practices”, i.e. widely-used formats and representation frameworks that have gained community consensus (e.g. CoNLL (Nivre et al. 2007)).

Indeed, such de-facto standards or industry best practices are developing on an ongoing basis. Standardization projects have been initiated, focusing mainly on recently maturing areas of linguistic analysis and on emerging technologies such as the semantic web. To compare the results of different methods, approaches, or technologies, data must be encoded and annotated in a common format that different groups can process and use. Here standards clearly play a fundamental role. In fact, many de-facto standards start from evaluation campaigns or shared tasks and then spread through the community in question (e.g. CoNLL). Collaborative ways of creating, updating and enhancing language resources represent a recent trend, which is supported by standards that facilitate the sharing of data and annotation and editing tools. SC 4 monitors these developments and encourages these communities to work under the ISO aegis.

Semantic/content interoperability is an emerging focus area of ISO/TC 37 standardization. Most of the existing SC 4 standards address syntactic interoperability by providing pivot formats (e.g. ISO 24612:2012 Linguistic annotation framework (LAF)), which enable formats to be merged and converted easily. Syntactic interoperability is the ability of different systems to process (read) exchanged data either directly or via trivial conversion. Semantic interoperability, on the other hand, is the ability of systems to interpret shared linguistic information in textual, spoken, multimedia content in meaningful, consistent ways. Finding ways to achieve semantic interoperability is one of the greatest challenges for the next generation of computing technologies.

The emergent Linked Open Data, which is related to semantic interoperability, is another new focus area of SC 4. Linked Open Data could, for example, link objects in one field or application with corresponding objects in other fields or applications, and thereby achieve both in-domain and extra-domain convergence. Linked Open Data complements the Semantic Web by increasing data interoperability between information systems and applications belonging to various communities, and enables the sustainable maintenance of free, open and interoperable data sets and services that are relevant for content analytics.

Using a collaborative paradigm to create language resources, such as crowd sourcing, could accelerate standardization efforts, and at the same time distribute the cost of resource creation. This is another area that SC 4 is paying attention to. Crowd-sourcing with respect to shared resources may be linked to interoperability, as it requires commonly accepted specifications. Such a collaborative development of resources would ultimately create a new culture of joint research.

Making standards operational also means grounding them on an interoperability framework of and for web services. SC 4 is looking at the possibility of defining such an interoperability framework. In this respect the project Knowledge Yielding Ontologies for Transition-based Organization (KYOTO)⁵ is both a case study and a success story. The solid working relationship that SC 4 maintains with other standardization bodies is advantageous for establishing this framework. The W3C is a key player in this sphere, producing key standards such as the Emotion Markup Language (EmotionML), Extensible MultiModal Annotation markup language (EMMA), RDF (Resource Description Framework), RDF-S (Schema extension), SKOS (Simple Knowledge Organization System) and OWL (Web Ontology Language).

Thus we believe that for some new areas we must look for an agreement between ISO and W3C, to help create synergies and reduce fragmentation.

⁵ <http://kyoto-project.eu/xmlgroup.iit.cnr.it/kyoto/index.html>

5.1.5 SC 5 - TRANSLATION AND INTERPRETING

5.1.5.1 Objective

SC 5's objective is to develop International Standards and other ISO deliverables in the field of translation and interpreting, translation-related and interpreting-related technology, technical writing, content management, localization, globalization and internationalization. It is the aim of this committee to look at the future of translation and interpreting needs, which will include more and more technology. The duty of SC 5 over the next five years will be to include more members worldwide as well as include more segments of the translation and interpreting industry in its standardization work.

SC5 currently has three working groups and a terminology coordinating group. These are:

- Working group 1 which deals with standards for translation;
- Working group 2 which deals with standards for interpreting;
- Working group 3 which deals with standard for facilities and equipment for interpreting services

Terminology Coordinating Group which is a vertical committee providing coordination of the terminology within the SC.

The standards developed by SC 5 aim to:

- improve the quality of the services rendered by language service providers in a wide range of text-types and registers
- encourage the training and continuing professional development (CPD) of all persons involved in the provision of translation and interpreting services;
- facilitate communication and interaction between Language service providers and their customers;
- raise awareness of the different needs and expectations of Language service providers and customers;
- stimulate competition;
- ensure evaluability by providing benchmark standards that give customers and clients confidence when they have to select from a range of offers;
- enable Language service providers to focus on in-house processes with a view to
 - rationalizing working procedures;
 - identifying and implementing appropriate preventive action;
 - establishing their position in the market, and thereby
 - increasing their market sustainability.

Looking at current developments, particularly concerning the digital transformation, SC 5 will work on International Standards covering topics like:

- Machine translation and
- Data protection, especially taking into account the EU *General Data Protection Regulation*, which is in force since May 2018.

5.1.5.2 Impact and economic value

Translation and interpreting services have a significant role to play horizontally across the global economy. The size of the market for translation and interpreting services is difficult to estimate. The Common Sense Advisory, a research company specialising in industry surveys and reports, estimated in 2018 that the language sector is worth US \$43 billion in revenues. Given the fact that a factual study of the size of EU translation and interpreting industry commissioned by the Directorate General for Translation of the European Commission and conducted by LTC estimated the value of the language industry within the European Member States at 8.4 billion € for 2008, the CSA's current global estimates seem realistic. However, the impact of the language industry is larger than its revenues would suggest. The global economy is currently estimated at US \$78.28 trillion. A large part of this is traded across borders and the language industry is an enabler of this trade.

Language service providers (LSPs) are interested in delivering high quality services, to sustain and hopefully grow their business, and their clients are obviously interested in receiving quality services. The standards developed by SC 5 address the needs of all stakeholders in the translation industry. They address the needs of the translation and interpreting industry, and in particular focus on the following aspects: assurance of service quality, process and project management, requirements for service quality criteria, guidelines on how to carry out a wide range of language service projects, and provisions for ensuring the effectiveness and efficiency of related technical and technological resources.

SC 5 standards help to generate confidence, among both Language service providers and their clients, that the service rendered is effective.

SC 5 is therefore committed to the developing of:

- requirements standards, which in turn will establish assurances that the services are fit for purpose,
- recommendations of best practice in service delivery, and
- requirements for ensuring that supporting technological resources are of a high quality and interoperable.

5.2 Identified strategies to achieve the ISO/TC's defined objectives

5.2.1 STRATEGIES TO INCREASE ADOPTION

Standards and guidelines are not effective in achieving their objectives unless they are recognized and adopted. Many ISO committees experience challenges in deploying their standards. ISO/TC 37 needs to take special measures because it develops standards that:

- are horizontal standards (standards that need to be applied in other standards)
- have wide-ranging technological applications
- can support a wide range of economic and social objectives
- provide a foundation for innovation in emerging fields such as in language engineering, language resource management, text mining, sentiment analysis, opinion mining, and machine translation

To increase adoption levels, ISO/TC 37 committee members believe that standards should be open, that is, widely available without restrictions. In drafting standards, ISO/TC 37 has therefore adopted the principle whereby the standard contains the essential, core content, while ancillary content is produced and distributed in the public domain by stakeholders. Ancillary content includes implementation guides, descriptions of specific implementations, XML schemas and other machine readable code, use cases, educational material, and so forth. Tools that help users apply standards are also developed and made available by researchers and enterprises.

Language service providers are the primary market for companies that develop language tools, and as such, they have great power to influence the pace and direction of innovation in language technology. They should encourage -- or rather insist -- that their software suppliers comply with standards, so as to increase the availability of sharable, exchangeable data. Funding agencies, on the other hand, should bear responsibility for promoting standards by requiring funded projects to be standards-compliant. Government agencies can promote quality work and promote best practices by citing standards in their requests for proposals.

ISO/TC 37 is adopting the following strategies to help realize the objectives of its standards

- Develop standards that are specifically geared to user needs;
- Maximize usefulness, applicability and implementation, by consulting with all stakeholders;
- Promote the application of recognized methods and tools;
- Promote efficient liaison, collaboration and communication among the five SCs to avoid overlap;
- Prioritize the work plan to meet the most urgent needs;
- Improve the implementation of ISO policy on the use of languages (ISO/IEC Directives, Annex F);

- Identify constraints limiting access to language resources and language processing tools and propose solutions for overcoming them;
- Organize awareness campaigns to promote ISO/TC 37 standards;
- Establish and maintain liaisons with other standards bodies and relevant organizations to avoid duplication and ensure industry support.

5.2.2 INVOLVEMENT IN EXTERNAL ACTIVITIES

The evolution of ISO 12620 has resulted in a parallel project driven by SC 3 to establish a Data Category Registry (DCR) for language resources. The DCR, called [datcatinfo](http://www.datcatinfo.net)⁶, is a Web-based repository of language-related data categories (types of data for managing LRs). Linguists world-wide have contributed to the DCR. The DCR is a tangible example of an implementation of ISO/TC 37 standards in partnership with industry (Interverbum Technologies) which is influencing the development of structured LRs world-wide.

Totally 47 international organizations are liaisons with ISO/TC 37 or one of its 5 SCs, including:

- AIIC International Association of Conference Interpreters
- AILA International Association of Applied Linguistics
- CERN European Organization for Nuclear Research
- CJEU Court of Justice of the European Parliament
- CLARIN ERIC Common LAnguage Resources and Technology INfrastructure
- EAFT European Association for Terminologie
- EC - European Commission European Commission
- ELRA European Language Resources Association
- EP European Parliament
- ETSI European Telecommunications Standards Institute
- EUATC European Union of Associations of Translation Companies
- EULITA European Legal Interpreters and Translators Association
- FAO Food and Agriculture Organization of the United Nations
- FIT International Federation of Translators
- GALA Globalization and Localization Association (GALA)
- GTW GTW - Association for Terminology and Knowledge Transfer
- IFLA International Federation of Library Associations and Institutions
- IIF International Institute of Refrigeration
- IITF International Institute for Terminology Research
- ISKO International Society for Knowledge Organization
- ITU International Telecommunication Union
- IUPAC International Union of Pure and Applied Chemistry
- Infoterm International Information Centre for Terminology (Infoterm)
- KPI Kamusi Project International
- LAS League of Arab States
- LSA Linguistic Society of America
- LTAC/TerminOrgs Language Terminology/Translation and Authoring Consortium / Terminology for Large Organizations
- OASIS Organization for the Advancement of Structured Information Standards (OASIS)
- OMG - BSL Business Semantics Ltd
- OMG Object Management Group
- REALITER Réseau panlatin de terminologie
- RIFAL Office québécois de la langue française
- RITerm Réseau ibéro-américain de terminologie
- TEI Text Encoding Initiative Consortium
- TERMNET International Network for Terminology, TermNet
- UATI International Union of Technical Associations and Organizations

⁶ www.datcatinfo.net

- UEA - Esperanto Universala Esperanto-Asocio
- UIC International Union of Railways
- UN United Nations
- UNECE United Nations Economic Commission for Europe
- UNESCO United Nations Educational, Scientific and Cultural Organization
- UNICODE The Unicode Consortium
- UPU Universal Postal Union
- WHO World Health Organization
- WIPO World Intellectual Property Organization
- WMO World Meteorological Organization
- eCI@ss e.V. eCI@ss e.V.

ISO/TC 37 representatives participate in these organizations and initiatives to promote standards. Some ISO/TC 37 delegates lead terminology standardization initiatives in their country. Some ISO/TC 37 delegates participate in the development of standards through other standards bodies. Some ISO/TC 37 representatives participate in regional standardization organizations. ISO/TC 37 representatives regularly attend related events and conferences.

6. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME

Experts from around the world participate in developing ISO/TC 37 standards through their national member bodies. In addition to national membership, a number of high-ranking international organizations and professional associations - some of which develop standards themselves - have a liaison status with ISO/TC 37. In addition, a number of other ISO Technical Committees also have a liaison status with ISO/TC 37 so that they can stay abreast of the latest standards and best practices for harmonizing their own terminology. Interaction with other ISO/TCs as well as with other standardization bodies and stakeholder organizations is essential to receive feedback on ISO/TC 37 documents and to ensure industry-side consensus.

Cooperation and mutual understanding among experts is supported by compliance with ISO/IEC Directives and serve as a guarantee for achieving compromises and for establishing consensus, which ensures the success of standards.

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

The current structure of ISO/TC 37 reflects the key aspects of language industry and services, which include the fundamental principles and methods, structured content, content management technologies, working processes controls, the requirements of services. More details the TC could be found by following the link below.

[ISO/TC 37 on ISO Online](#)

Click on the following lines for related information:

- [Overview \(Secretariat, Secretary, Chair, Date of creation, Scope, Structure, etc.\)](#)
- Work programmes (SC's published standards and standards under development)

[ISO/TC 37/SC 1 Principles and methods](#)

[ISO/TC 37/SC 2 Terminology workflow and language coding](#)

[ISO/TC 37/SC 3 Management of terminology resources](#)

[ISO/TC 37/SC 4 Language resource management](#)

[ISO/TC 37/SC 5 Translation, interpreting and related technology](#)

Reference information

[Glossary of terms and abbreviations used in ISO/TC Business Plans](#)

[General information on the principles of ISO's technical work](#)

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Terms and definitions used in this business plan

language industry (LI)

Any professional, commercial, or research-oriented activity concerned with the provision of language services or the development of language resources.

Note: The language industry includes translation, interpreting, natural language processing, computational linguistics, text mining (term extraction, content classification, etc.), corpora annotation, management of language resources, and related software and tools development.

language resource (LR)

Set of speech or language data and descriptions in machine readable form, used for building, improving or evaluating natural language and speech algorithms or systems, or, as core resources for the software localization and language services industries, for language studies, electronic publishing, international transactions, subject-area specialists and end users.

Examples: computational lexicons and other lexical resources, terminology databases, terminology files, speech collection and processing, terminologies, language-based commercial data (names, properties, catalogues, etc., of products and services), signs and symbols, codes and formulae, corpora (text, speech, audio), thesauri, taxonomies, ontologies, translation memories, authoring memories.

language service (LS)

Any service concerned with language.

Note: Language services include translation, interpreting, terminology management, language-related consultancy, language training, language planning, product localization, and others.

language service provider (LSP)

person or organization who provides language-related services⁷

Note: An LSP can be a dedicated language service company, such as a translation service, a service within a company, such as a language service within a large multinational manufacturer, or an individual professional, such as a translator or interpreter.

translation service provider (TSP)⁸

language service provider (2.4.1) that provides professional translation services (2.1.6)

EXAMPLE Translation companies, individual translators, or in-house translation departments.

Note: Language service provider (LSP) is a more general term involving other language-related and value-added services but for the purposes of this International Standard, LSPs are considered to be TSPs when they are providing translation services.

interpreting service provider (ISP)⁹

person or organization supplying interpreting services

Note: An ISP may be a single independent community interpreter (2.3.3), an agency, a private or public company, an institution, or a department within an institution such as an interpreting department within a hospital.

⁷ Definition is quoted from ISO 17100:2015 Translation services -- Requirements for translation services

⁸ Definition, example and note are quoted from ISO 17100:2015.

⁹ Definition, example and note are quoted from ISO 13611:2014 Interpreting — Guidelines for community interpreting