International Standard

ES 2504

Terminology management — Multilingual terminology

First edition
2025-05

Reference number
ES 2504:2025(en)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

The Enosema Foundation (“ES”) is the premier non-profit standardization organization for terminology standardization and terminology related processes such as management. It facilitates the education, standardization, research, promotion, definition, and usage of terminology resources and management practices globally.

ES works with international partners and experts across the globe, reflecting the international nature of its mission. More information about ES is available on the official website (https://www.enosema.org).

The procedures used to develop this document and those intended for its further maintenance are described in the ES Directives.

In particular, the different approval criteria needed for the different types of ES documents should be noted. This document was drafted in accordance with the editorial rules of the ES Directives.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ES shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be provided in the Introduction.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

This document was prepared by Technical Committee *Terminology*.

Introduction

In our increasingly globalized world, effective communication across language boundaries has become essential for organizations, industries, and communities. Multilingual terminology management addresses the complex challenge of ensuring consistent, accurate, and culturally appropriate terminology across multiple languages and locales.

While the fundamental principles of terminology management apply across all contexts, multilingual environments introduce additional layers of complexity. These include cultural and linguistic differences, varying conceptual systems, challenges in establishing equivalence between terms, and the need to determine authoritative versus informative language versions.

Several international standards provide guidance for aspects of multilingual terminology work, including ISO 704 (Terminology work — Principles and methods), ISO 30042 (Management of terminology resources — TermBase eXchange (TBX)), ISO 10241-1 and ISO 10241-2 (Terminological entries in standards), and ISO 17100 (Translation services). However, organizations often struggle with implementing comprehensive multilingual terminology management due to the complexity of coordinating terminology across languages, cultures, and regions.

The challenges of multilingual terminology management include:

— Establishing conceptual equivalence across languages with different cultural and linguistic backgrounds

— Determining which language versions are authoritative and which are informative

— Adapting terminology to specific locales while maintaining conceptual integrity

— Managing the evolution of terminology across multiple languages simultaneously

— Coordinating terminology work among diverse stakeholders with different linguistic expertise

— Implementing technical solutions that support multiple languages, scripts, and directionality

This document addresses these challenges by providing comprehensive guidelines for multilingual terminology management based on established international standards and best practices. It outlines principles, cultural considerations, authority determination, equivalence management, workflow processes, and technical implementation requirements necessary for effective multilingual terminology management.

The guidelines presented in this document are designed to help organizations:

— Establish consistent terminology across multiple languages

— Implement efficient multilingual terminology management processes

— Determine and document authoritative and informative language versions

— Adapt terminology appropriately for different cultural contexts

— Build and maintain multilingual terminology resources that meet international standards

— Improve the clarity and quality of multilingual content

— Reduce translation and localization costs

— Facilitate knowledge transfer and communication across language boundaries

By following these guidelines, organizations can improve the consistency and quality of their multilingual communications, enhance their global content strategy, reduce costs, and better serve their diverse audiences worldwide.

This standard builds upon the significant contributions of terminology and localization experts worldwide and the foundational work established in ISO standards. The Enosema Foundation recognizes the critical

importance of multilingual terminology management in facilitating mutual understanding across languages and cultures.

Terminology management — Multilingual terminology

1 Scope

This document specifies principles, methods, and best practices for multilingual terminology management across organizations and domains. It provides a standardized approach to the creation, collection, storage, processing, and dissemination of terminology resources in multiple languages and across different cultural contexts.

The guidelines specified in this document apply to all multilingual terminology management activities, regardless of the subject field, industry, organization size, or languages involved. The standardized approaches enhance terminology consistency across languages, improve communication clarity in multilingual environments, and ensure compliance with international terminology standards.

This document provides practical guidance for implementing effective multilingual terminology management processes based on established international standards, including ISO 704, ISO 30042, ISO 10241-1, ISO 10241-2, and ISO 17100, with examples illustrating the application of these principles in various multilingual contexts.

This document specifically addresses:

— Principles for managing terminology across multiple languages

— Cultural and regional considerations in multilingual terminology

— Determination and documentation of authoritative and informative language versions

— Equivalence management across languages with different conceptual systems

— Multilingual terminology workflows and collaboration processes

— Technical implementation of multilingual terminology resources

This document is intended for:

— Terminology managers and terminologists responsible for developing and maintaining multilingual terminology resources

— Translators and localizers who work with specialized terminology across languages

— Content creators and technical writers producing content for multilingual audiences

— Standards developers working in multilingual environments

— Subject matter experts contributing to terminology resources in their native languages

— Translation and localization project managers

— Language service providers

— International organizations managing multilingual documentation

— Software developers creating tools for multilingual terminology management

The guidelines specified here complement the principles and methods described in ISO 704, the data exchange formats defined in ISO 30042, the rules for terminological entries established in ISO 10241-1 and ISO 10241-2, and the translation service requirements in ISO 17100.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 704:2022, *Terminology work — Principles and methods*

ISO 10241-1:2011, *Terminological entries in standards — Part 1: General requirements and examples of presentation*

ISO 10241-2:2012, *Terminological entries in standards — Part 2: Adoption of standardized terminological entries*

ISO 30042:2019, *Management of terminology resources — TermBase eXchange (TBX)*

ISO 17100:2015, *Translation services — Requirements for translation services*

ISO 5127:2017, *Information and documentation — Foundation and vocabulary*

ISO 639-1:2002[1)], *Codes for the representation of names of languages — Part 1: Alpha-2 code*

ISO 639-2:1998[2)], *Codes for the representation of names of languages — Part 2: Alpha-3 code*

ISO 15924:2004[3)], *Information and documentation — Codes for the representation of names of scripts*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org

3.1
terminology
set of designations belonging to one special language

[SOURCE: ISO 704:2022]

3.2
term
verbal designation of a general concept in a specific subject field

[SOURCE: ISO 704:2022]

3.3
multilingual terminology management
management of terminology resources across multiple languages through the systematic collection, description, processing, and presentation of concepts and their designations

1) Cancelled and replaced by ISO 639:2023.

2) Cancelled and replaced by ISO 639:2023.

3) Cancelled and replaced by ISO 15924:2022.

3.4
concept
unit of knowledge created by a unique combination of characteristics

[SOURCE: ISO 704:2022]

3.5
authoritative language version
language version of a terminological entry that serves as the reference for creating or validating other language versions

3.6
informative language version
language version of a terminological entry derived from or validated against an authoritative language version

3.7
source language
language from which a term or text is translated

[SOURCE: ISO 17100:2015]

3.8
target language
language into which a term or text is translated

[SOURCE: ISO 17100:2015]

3.9
locale
set of parameters that defines the user's language, region and any special variant preferences that the user wants to see in their user interface

3.10
localization
adaptation of a product, service, or content to meet the language, cultural, and other requirements of a specific target market

[SOURCE: ISO 17100:2015]

3.11
internationalization
process of designing a product so that it can be adapted to various languages and regions without engineering changes

3.12
cultural adaptation
process of adapting content to the cultural expectations, norms, and preferences of a target audience

3.13
concept equivalence
relationship between designations in different languages representing the same concept

3.14
full equivalence
relationship between designations in different languages that represent identical concepts

3.15
partial equivalence
relationship between designations in different languages that represent similar but not identical concepts

3.16
zero equivalence
absence of a designation in a target language for a concept that exists in a source language

3.17
terminological gap
absence of a direct term equivalent in a target language for a concept in the source language

3.18
neologism
newly coined term, word, or phrase that may be in the process of entering common use but has not yet been fully accepted

3.19
borrowing
term adopted from another language with or without modification

3.20
calque
word or phrase borrowed from another language by literal, word-for-word or root-for-root translation

3.21
language code
code that represents the name of a language

[SOURCE: ISO 639-1:2002]

3.22
script code
code that represents the name of a script

[SOURCE: ISO 15924:2004]

3.23
bidirectional text
text containing text in both right-to-left and left-to-right writing directions

3.24
language register
variety of language used for a particular purpose or in a particular social setting

3.25
terminology harmonization
activity leading to the selection of terms and the assignment of concepts to terms in different languages to ensure equivalence of concepts and consistency of terms

4 Principles of multilingual terminology management

4.1 General

Multilingual terminology management is founded on a set of core principles that extend the fundamental principles of terminology work to address the specific challenges of working across multiple languages and cultures. These principles ensure that multilingual terminology work is systematic, consistent, and of high quality, serving the needs of all stakeholders regardless of their language or cultural background.

The principles outlined in this section build upon the fundamental principles of terminology work established in ISO 704:2022 and provide a comprehensive framework for multilingual terminology management activities across organizations and domains.

4.2 Concept-based approach

Multilingual terminology management shall be based on concepts rather than terms, with the understanding that concepts may have different boundaries and characteristics in different languages and cultures.

This principle dictates that:

a) Concepts should be clearly defined before terms are assigned in any language

b) Each concept should be placed within its appropriate concept system, which may vary across cultures

c) Relationships between concepts should be explicitly documented, noting any cultural variations

d) One concept should correspond to one multilingual terminological entry, even when conceptual boundaries differ across languages

EXAMPLE The English concept of "privacy" does not have exact equivalents in many languages. A concept-based approach would document the English concept with its specific characteristics, then document the partial equivalents in other languages (such as "vie privée" in French or "プライバシー" in Japanese) with notes explaining the conceptual differences.

4.3 Cultural sensitivity

Multilingual terminology management shall respect and account for cultural differences in conceptual systems, linguistic structures, and communication practices.

This principle requires:

a) Recognition that concepts may be culture-specific or have different characteristics in different cultures

b) Awareness of cultural taboos, sensitivities, and preferences in term selection

c) Consideration of cultural context in definitions and examples

d) Appropriate adaptation of concepts and terms for different cultural audiences while maintaining conceptual integrity

EXAMPLE The concept of "family" varies significantly across cultures. In some cultures, it refers primarily to the nuclear family, while in others it encompasses extended family members. Multilingual terminology management would document these cultural variations in the concept description.

4.4 Language equality

All languages in a multilingual terminology resource shall be treated with equal respect and consideration, regardless of their status as authoritative or informative.

This principle emphasizes:

a) Equal attention to quality and accuracy across all language versions

b) Appropriate representation of all languages in the terminology development process

c) Recognition that each language has unique characteristics that must be respected

d) Avoidance of linguistic imperialism or the imposition of structures from one language onto another

4.5 Transparency of authority

The status of each language version as authoritative or informative shall be clearly documented and transparent to all users.

This principle involves:

a) Explicit documentation of which language versions are authoritative

b) Clear criteria for determining authoritative status

c) Transparent processes for creating and validating informative versions

d) Documentation of the relationship between authoritative and informative versions

EXAMPLE A terminological entry might indicate:

term: artificial intelligence en: artificial intelligence [AUTHORITATIVE] fr: intelligence artificielle [INFORMATIVE] de: künstliche Intelligenz [INFORMATIVE] ja: 人工知能 [AUTHORITATIVE]

With a note explaining that both English and Japanese versions were developed by subject matter experts in the original concept development and serve as authoritative references for other language versions.

4.6 Equivalence management

The degree of equivalence between terms in different languages shall be explicitly documented and managed.

This principle requires:

a) Assessment and documentation of the type of equivalence (full, partial, zero)

b) Strategies for handling partial and zero equivalence

c) Clear indication of conceptual differences across languages

d) Appropriate handling of culture-specific concepts

4.7 Collaborative development

Multilingual terminology shall be developed through collaboration among experts with different linguistic and cultural backgrounds.

This principle emphasizes:

a) Involvement of native speakers and subject matter experts for each language

b) Collaborative processes for resolving conceptual and terminological differences

c) Cross-cultural communication and negotiation

d) Balanced representation of different language communities

4.8 Consistency within language versions

Each language version shall maintain internal consistency in terminology use, style, and format.

This principle involves:

a) Consistent application of terminological principles within each language

b) Adherence to language-specific conventions and standards

c) Consistent formatting and presentation within each language

d) Regular review and harmonization within each language version

4.9 Adaptability to language evolution

Multilingual terminology management shall accommodate the different rates and patterns of language evolution across languages.

This principle requires:

a) Recognition that languages evolve at different rates and in different ways

b) Processes for updating terminology to reflect language changes

c) Documentation of obsolete or changing terms

d) Flexibility to accommodate neologisms and evolving usage

4.10 Technical accessibility

Multilingual terminology resources shall be technically accessible to users of all included languages.

This principle involves:

a) Support for all required scripts and character sets

b) Appropriate handling of bidirectional text

c) Consideration of sorting and search requirements for different languages

d) Accessibility features that work across languages

5 Localization and cultural adaptation

5.1 General

Localization and cultural adaptation are essential aspects of multilingual terminology management that go beyond simple translation. They involve adapting terminology to specific cultural contexts while maintaining conceptual integrity and ensuring that terms are appropriate and effective for their target audiences.

This section outlines approaches and strategies for localizing terminology and adapting it to different cultural contexts, in accordance with the principles described in the previous section and the requirements for multilingual terminology resources.

5.2 Localization versus translation

5.2.1 Distinguishing localization from translation

Localization is a broader process than translation, encompassing cultural, technical, and contextual adaptations beyond linguistic conversion.

In terminology management:

— Translation focuses on finding linguistic equivalents for terms

— Localization considers cultural appropriateness, usage contexts, and user expectations

— Translation may be a component of localization, but localization includes additional adaptations

EXAMPLE The English term “cloud computing” could be translated literally into many languages, but proper localization would consider:

- Whether the metaphor of “cloud” makes sense in the target culture
- If there are existing terms already in use in the target locale
- Whether technical experts in the target locale use an English borrowing or a native term
- Any cultural associations or connotations that might affect understanding

5.2.2 Localization parameters

Terminology localization may involve adapting various parameters:

a) Linguistic parameters (grammar, syntax, orthography)

b) Cultural parameters (metaphors, idioms, examples)

c) Technical parameters (formats, units of measurement, notation systems)

d) Legal parameters (regulated terminology, compliance requirements)

e) Market-specific parameters (industry conventions, brand considerations)

5.3 Cultural considerations in terminology

5.3.1 Cultural context of concepts

Concepts exist within cultural contexts that influence their boundaries, characteristics, and relationships with other concepts.

When managing multilingual terminology:

a) Identify culture-specific aspects of concepts

b) Document cultural variations in concept understanding

c) Provide cultural context in definitions and examples

d) Recognize when concepts are culture-bound or culture-specific

EXAMPLE The concept of “personal space” varies significantly across cultures. In a multilingual terminology resource, the entry might include:

> en: personal space definition: The physical distance one prefers to maintain in social interactions. cultural note: In North American culture, personal space typically extends approximately 45-120 cm from the body in social situations.
>
> ja: パーソナルスペース definition: 社会的な交流において維持したい物理的な距離。 cultural note: 日本文化では、パーソナルスペースの概念は存在するが、 北米文化と比較して距離が短い傾向がある。

5.3.2 Cultural sensitivity in term selection

Term selection must consider cultural sensitivities, taboos, and preferences.

Guidelines for culturally sensitive term selection:

a) Avoid terms with negative connotations in the target culture

b) Consider historical and political sensitivities

c) Be aware of taboo subjects and terminology

d) Respect cultural preferences for native terms versus borrowings

e) Consider register and formality appropriate to the culture

5.3.3 Regional variants

Many languages have regional variants that must be considered in terminology management.

Approaches to handling regional variants:

a) Document regional usage patterns

b) Specify the region for each variant

c) Indicate preferred variants for specific markets

d) Provide usage notes for regional differences

e) Consider standardization needs versus regional identity

EXAMPLE The concept of “mobile phone” has different terms in different English-speaking regions:

en-US: cell phone en-GB: mobile phone en-AU: mobile phone en-CA: cell phone, mobile phone

Each variant would be documented with its regional code and usage notes.

5.4 Adaptation strategies

5.4.1 Adaptation of culture-specific concepts

When concepts are specific to one culture but need to be represented in another, several strategies can be employed:

a) Borrowing the source term with explanatory notes

b) Creating a neologism in the target language

c) Using a descriptive phrase instead of a single term

d) Finding the closest partial equivalent with clarifying notes

e) Using a generalizing term with specific qualifiers

EXAMPLE The Japanese concept of “おもてなし” (omotenashi) refers to a specific form of Japanese hospitality that doesn’t have a direct equivalent in many languages. Adaptation strategies might include:

— Borrowing: “omotenashi” (with explanation)

— Descriptive phrase: “Japanese wholehearted hospitality”

— Partial equivalent: “hospitality (Japanese style)”

— Generalizing term with qualifier: “anticipatory hospitality (Japanese concept)”

5.4.2 Adaptation of examples and contexts

Examples and contexts should be adapted to be culturally relevant and meaningful.

Guidelines for adapting examples:

a) Replace culture-specific references with locally relevant ones

b) Adapt scenarios to reflect local practices and norms

c) Ensure examples are appropriate and not offensive in the target culture

d) Maintain the conceptual point while changing cultural specifics

e) Verify that adapted examples accurately represent the concept

5.4.3 Adaptation of visual elements

Visual elements associated with terminology (icons, symbols, diagrams) may also require cultural adaptation.

Considerations for visual adaptation:

a) Color associations vary across cultures

b) Symbols may have different meanings or be taboo

c) Reading direction affects diagram layout

d) Gestures depicted may have different meanings

e) Cultural references in visuals may not be recognized

5.5 Internationalization as foundation

5.5.1 Internationalization principles

Internationalization is the process of designing terminology resources so they can be easily localized.

Key internationalization principles for terminology:

a) Separate content from presentation

b) Design for translation expansion/contraction

c) Support all required character sets and writing systems

d) Avoid culture-specific references in core definitions

e) Use culturally neutral examples where possible

f) Design for bidirectional text support

5.5.2 Designing for future localization

Terminology resources should be designed with future localization in mind.

Best practices include:

a) Document the cultural context of the original terminology

b) Provide context notes to aid future localizers

c) Maintain clear concept boundaries to facilitate equivalence assessment

d) Use internationally recognized standards for data categories

e) Document the rationale for term choices

f) Establish processes for cultural review and adaptation

5.6 Quality assurance for localized terminology

5.6.1 Cultural review process

Localized terminology should undergo cultural review by native speakers and subject matter experts.

The cultural review process should:

a) Verify cultural appropriateness of terms and definitions

b) Check for unintended connotations or associations

c) Ensure examples are relevant to the target culture

d) Confirm that register and style are appropriate

e) Identify any missing cultural context

5.6.2 User feedback mechanisms

Establish mechanisms for gathering user feedback on localized terminology.

Effective feedback mechanisms include:

a) Surveys of target language users

b) Community review processes

c) Usage monitoring and analysis

d) Consultation with local experts

e) Periodic review and update cycles

6 Authority and status of language versions

6.1 General

In multilingual terminology management, determining which language versions are authoritative and which are informative is a critical aspect of ensuring terminology quality and consistency. This section outlines approaches for establishing, documenting, and managing the authoritative status of language versions in multilingual terminology resources.

The guidelines in this section are designed to ensure transparency, clarity, and appropriate governance of multilingual terminology resources while respecting the principles of language equality and cultural sensitivity described in previous sections.

6.2 Establishing authoritative language versions

6.2.1 Criteria for determining authoritative status

The determination of which language versions are authoritative should be based on clear criteria:

a) Origin of the concept (language in which the concept was originally developed)

b) Expertise availability (languages with available subject matter experts)

c) Legal or regulatory requirements (legally mandated authoritative languages)

d) Organizational policy (officially designated corporate languages)

e) User base (languages of primary user communities)

f) Quality assurance capabilities (languages with robust review processes)

Organizations shall document the criteria used for determining authoritative status and apply them consistently across their terminology resources.

EXAMPLE An international standards organization might establish these criteria for authoritative language versions:

- The language in which the standard was originally developed is authoritative
- Languages that are official languages of the organization are authoritative
- Languages for which there are dedicated technical committees with subject matter experts are authoritative
- All other language versions are informative

6.2.2 Multiple authoritative languages

In some cases, multiple language versions may be designated as authoritative. This approach is appropriate when:

a) The concept was developed collaboratively in multiple languages

b) The organization has multiple official languages

c) Legal requirements mandate multiple authoritative languages

d) Equal expertise is available in multiple languages

When multiple authoritative languages exist, organizations shall:

a) Clearly document all authoritative languages

b) Establish processes for resolving conflicts between authoritative versions

c) Ensure synchronization of updates across all authoritative versions

d) Maintain equal quality standards for all authoritative versions

6.2.3 Changing authoritative status

The authoritative status of language versions may change over time due to:

a) Organizational changes

b) Expertise availability changes

c) Quality improvements in previously informative versions

d) Legal or regulatory changes

e) Strategic business decisions

When changing the authoritative status of language versions, organizations shall:

a) Document the rationale for the change

b) Establish a transition plan

c) Communicate the change to all stakeholders

d) Update all relevant documentation

e) Review and validate the newly authoritative versions

6.3 Documentation of authoritativeness

6.3.1 Explicit marking of status

The status of each language version shall be explicitly marked in the terminology resource:

a) Use consistent markers for authoritative and informative status

b) Include status information in metadata

c) Make status visible to users

d) Include status in exported terminology data

e) Document the meaning of status markers

EXAMPLE Example of explicit status marking:

concept ID: TM-0042 en: cloud computing [AUTHORITATIVE] definition: model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources

fr: informatique en nuage [INFORMATIVE] definition: modèle permettant un accès omniprésent, pratique et à la demande par le réseau à un pool partagé de ressources informatiques configurables

6.3.2 Documentation of authority criteria

For each terminological entry with authoritative and informative language versions, the criteria used to determine authoritative status should be documented:

a) Include notes explaining why specific languages are authoritative

b) Document the expertise or sources used for authoritative versions

c) Provide context for understanding the relationship between versions

d) Include version history relevant to authoritative status

e) Document any special considerations for specific entries

6.3.3 Authority in terminology exchange

When exchanging terminology data with other systems or organizations:

a) Include authoritative status information in exchange formats

b) Use standard TBX mechanisms for representing status (ISO 30042:2019)

c) Document how status is encoded in the exchange format

d) Verify that status information is preserved during import/export

e) Include relevant metadata about authority determination processes

6.4 Processes for deriving informative translations

6.4.1 Translation workflow for informative versions

Informative language versions shall be created through a structured translation workflow:

a) Source content selection from authoritative version(s)

b) Qualified translator selection with subject matter expertise

c) Translation with reference to authoritative version(s)

d) Review by subject matter experts

e) Validation against authoritative version(s)

f) Documentation of the relationship to authoritative version(s)

6.4.2 Quality assurance for informative versions

While informative versions are derived from authoritative versions, they still require rigorous quality assurance:

a) Verification of conceptual equivalence

b) Linguistic quality review

c) Cultural appropriateness assessment

d) Terminology consistency check

e) User acceptance testing

f) Regular review and updating

6.4.3 Documentation of derivation process

The process by which informative versions are derived from authoritative versions shall be documented:

a) Source authoritative version(s) used

b) Translation or adaptation methodology

c) Validation processes applied

d) Known limitations or challenges

e) Date of derivation and scheduled review

f) Responsible parties for the informative version

6.5 Managing conflicts between versions

6.5.1 Conflict identification

Potential conflicts between language versions may include:

a) Conceptual discrepancies

b) Contradictory definitions

c) Incompatible examples or contexts

d) Divergent concept relationships

e) Inconsistent usage guidance

Organizations shall establish processes for identifying such conflicts through:

a) Regular comparative reviews

b) User feedback mechanisms

c) Automated consistency checks

d) Cross-language validation

e) Expert review panels

6.5.2 Conflict resolution

When conflicts between language versions are identified:

a) Authoritative versions take precedence in case of conflicts

b) When multiple authoritative versions conflict, a documented resolution process shall be followed

c) Changes to resolve conflicts shall be documented

d) All stakeholders shall be informed of significant conflict resolutions

e) Root causes of conflicts shall be analyzed to prevent recurrence

6.5.3 Maintaining version alignment

To prevent conflicts and maintain alignment between language versions:

a) Synchronize update processes across languages

b) Establish clear communication channels between language teams

c) Document concept boundaries clearly to prevent drift

d) Conduct regular alignment reviews

e) Implement version control for all language versions

6.6 Legal and compliance implications

6.6.1 Legal status of language versions

The designation of authoritative and informative language versions may have legal implications:

a) In legal disputes, authoritative versions typically prevail

b) Regulatory compliance may require specific authoritative languages

c) Contractual obligations may specify authoritative languages

d) Liability may differ for authoritative versus informative content

e) Intellectual property considerations may vary by language version

Organizations shall consult legal experts when establishing authoritative language policies and document any legal implications.

6.6.2 Compliance documentation

For compliance purposes, organizations shall maintain documentation of:

a) Criteria and processes for determining authoritative status

b) Changes to authoritative status over time

c) Quality assurance processes for all language versions

d) Validation procedures for informative versions

e) Conflict resolution processes and outcomes

6.6.3 Disclaimer requirements

Informative language versions should include appropriate disclaimers:

a) Clear indication of their informative status

b) Reference to the authoritative version(s)

c) Limitations of the informative version

d) Process for reporting discrepancies

e) Date of translation or adaptation from the authoritative version

7 Terminological equivalence management

7.1 General

Terminological equivalence management addresses the challenge of establishing relationships between terms in different languages that represent the same or similar concepts. This section outlines approaches for identifying, documenting, and managing different types of equivalence in multilingual terminology resources.

The guidelines in this section are designed to ensure accurate representation of conceptual relationships across languages while acknowledging the reality that perfect equivalence is not always possible due to linguistic and cultural differences.

7.2 Types of equivalence

7.2.1 Full equivalence

Full equivalence exists when terms in different languages represent identical concepts with the same characteristics and boundaries.

Characteristics of full equivalence:

a) Complete conceptual overlap

b) Same position in respective concept systems

c) Same definition (accounting for linguistic differences)

d) Same usage contexts

e) Same register and connotations

Full equivalence is most common in:

— Technical and scientific domains with internationally standardized concepts

— Newly developed fields where terminology is adopted across languages

— Domains with strong international standardization

EXAMPLE The concept of “oxygen” has full equivalents across many languages:

en: oxygen definition: chemical element with atomic number 8

fr: oxygène definition: élément chimique de numéro atomique 8

de: Sauerstoff definition: chemisches Element mit der Ordnungszahl 8

ja: 酸素 definition: 原子番号8の化学元素

7.2.2 Partial equivalence

Partial equivalence exists when terms in different languages represent similar but not identical concepts, with some differences in characteristics or boundaries.

Types of partial equivalence:

a) Inclusion (one concept includes the other)

b) Intersection (concepts overlap partially)

c) Different register or usage contexts

d) Different connotations or associations

e) Different positions in respective concept systems

EXAMPLE The English term “privacy” and French “vie privée” have partial equivalence:

en: privacy definition: state of being free from public attention or intrusion into one’s personal matters

fr: vie privée definition: ensemble des activités d’une personne qui relèvent de l’intimité et qui ne concernent pas la vie publique ou professionnelle

The French concept focuses more specifically on activities and has stronger connotations of intimacy than the broader English concept.

7.2.3 Zero equivalence

Zero equivalence occurs when a concept exists in one language but has no established equivalent term in another language.

Causes of zero equivalence:

a) Culture-specific concepts

b) Newly emerged concepts not yet named in all languages

c) Specialized concepts relevant only in certain linguistic communities

d) Concepts tied to specific legal or regulatory systems

e) Concepts related to unique cultural practices or artifacts

EXAMPLE The Portuguese concept “saudade” (a deep emotional state of melancholic longing for something or someone that is absent) has no direct equivalent in many languages, representing a case of zero equivalence.

7.3 Equivalence assessment

7.3.1 Assessment methodology

Equivalence assessment shall follow a systematic methodology:

a) Analyze concept characteristics in the source language

b) Identify potential equivalent terms in the target language

c) Compare concept characteristics across languages

d) Determine the type of equivalence (full, partial, zero)

e) Document the degree and nature of equivalence

f) Validate the assessment with subject matter experts

7.3.2 Assessment criteria

Criteria for assessing equivalence include:

a) Conceptual overlap (extent to which characteristics match)

b) Position in respective concept systems

c) Usage contexts and collocations

d) Register and stylistic level

e) Connotations and associations

f) Acceptance by subject matter experts

g) Established usage in authoritative sources

7.3.3 Documentation of assessment

The equivalence assessment shall be documented:

a) Type of equivalence determined

b) Basis for the determination

c) Specific differences in case of partial equivalence

d) Sources consulted

e) Experts involved in the assessment

f) Date of assessment

g) Confidence level of the assessment

7.4 Strategies for handling equivalence challenges

7.4.1 Handling partial equivalence

When partial equivalence is identified, the following strategies may be employed:

a) Document the specific differences between concepts

b) Provide usage notes explaining the limitations of equivalence

c) Include context examples illustrating appropriate usage

d) Consider creating multiple target language entries for different aspects of the source concept

e) Use qualifiers to narrow or expand the concept as needed

EXAMPLE For the English term “accountability” which has partial equivalents in many languages:

fr: responsabilité usage note: In French, “responsabilité” encompasses both the concepts of “responsibility” and “accountability” in English, with less emphasis on the aspect of being answerable to external stakeholders than the English “accountability.”

Additional context examples would illustrate appropriate usage scenarios.

7.4.2 Handling zero equivalence

When zero equivalence is identified, the following strategies may be employed:

a) Borrowing the source term

b) Creating a neologism

c) Using a descriptive phrase

d) Using a functional equivalent with explanatory notes

e) Adapting an existing term with qualifiers

f) Using a combination of strategies

The choice of strategy should consider:

a) Target audience needs

b) Domain conventions

c) Language policies

d) Usability considerations

e) Long-term terminology development goals

EXAMPLE For the Japanese concept “wabi-sabi” (侘寂) in English:

Strategy 1 — Borrowing: “wabi-sabi” with note: “A Japanese aesthetic concept centered on the acceptance of transience and imperfection, characterized by asymmetry, roughness, simplicity, and appreciation of natural processes.”

Strategy 2 — Descriptive phrase: “imperfect beauty aesthetic” with note: “Refers to the Japanese concept of finding beauty in imperfection, impermanence, and incompleteness.”

7.4.3 Neologism creation

When creating neologisms to address zero equivalence, the following guidelines apply:

a) Follow word formation patterns of the target language

b) Ensure transparency of meaning where possible

c) Consider ease of pronunciation and use

d) Consult with native speakers and subject matter experts

e) Test acceptance with target users

f) Document the creation process and rationale

7.4.4 Borrowing strategies

When borrowing terms from the source language, consider:

a) Adaptation to target language phonology and orthography

b) Grammatical integration into the target language

c) Cultural acceptability of borrowings

d) Existing patterns of borrowing between the languages

e) Potential for confusion with existing terms

f) Documentation of the source term and its meaning

7.5 Managing equivalence in terminology resources

7.5.1 Representation in terminological entries

Equivalence information shall be represented in terminological entries:

a) Clear indication of equivalence type

b) Cross-references between related entries

c) Notes explaining partial or zero equivalence

d) Context examples illustrating usage

e) Source information for equivalence determinations

f) Visual representation of conceptual relationships where helpful

7.5.2 Equivalence in concept systems

Equivalence relationships affect how concepts are positioned in multilingual concept systems:

a) Document differences in concept system structures across languages

b) Show how partial equivalents relate to other concepts in their respective systems

c) Indicate where concept boundaries differ

d) Use visual representations to illustrate cross-language concept relationships

e) Document culture-specific conceptual structures

7.5.3 Evolving equivalence

Equivalence relationships may evolve over time due to:

a) Language evolution

b) Concept development

c) Increasing international harmonization

d) Changes in usage patterns

e) Deliberate terminology planning

Terminology resources shall:

a) Include version history of equivalence relationships

b) Document changes in equivalence status

c) Provide dates for equivalence determinations

d) Establish review cycles for equivalence relationships

e) Monitor usage to detect evolving equivalence

8 Multilingual terminology workflow

8.1 General

Effective multilingual terminology management requires well-defined workflows that coordinate the efforts of various stakeholders across languages and cultures. This section outlines approaches for establishing and managing multilingual terminology workflows, from initial planning through ongoing maintenance.

The guidelines in this section are designed to ensure efficient, collaborative, and high-quality terminology development across multiple languages, with appropriate consideration of authoritative and informative language versions.

8.2 Planning multilingual terminology resources

8.2.1 Strategic planning

Strategic planning for multilingual terminology resources shall address:

a) Organizational goals and requirements for multilingual terminology

b) Target languages and their prioritization

c) Authoritative language determination strategy

d) Resource allocation across languages

e) Timeline for development and implementation

f) Success metrics and evaluation criteria

g) Alignment with broader content and localization strategies

EXAMPLE A strategic plan for multilingual terminology might include:

- Primary goal: Support product documentation in 10 languages
- Authoritative languages: English and Japanese (product development languages)
- First-tier target languages: French, German, Spanish, Chinese (major markets)
- Second-tier target languages: Italian, Portuguese, Korean, Russian
- Timeline: First-tier languages within 6 months, second-tier within 12 months
- Success metrics: 95% terminology consistency in documentation, 30% reduction in translation queries

8.2.2 Resource assessment

Before initiating multilingual terminology work, organizations shall assess:

a) Available expertise in each language

b) Existing terminology resources

c) Technology infrastructure

d) Budget constraints

e) Time constraints

f) Stakeholder availability

g) External resources and partnerships

8.2.3 Scope definition

The scope of multilingual terminology resources shall be clearly defined:

a) Subject fields and domains to be covered

b) Concept boundaries and inclusion criteria

c) Types of terminological data to be collected

d) Level of detail for each language

e) Relationship to other terminology resources

f) Target user groups and their needs

g) Deliverables and formats

8.3 Collaborative terminology development

8.3.1 Stakeholder identification

Key stakeholders in multilingual terminology development include:

a) Subject matter experts in each language

b) Terminologists and linguists

c) Content creators and technical writers

d) Translators and localizers

e) Product and service developers

f) Legal and compliance specialists

g) End users of terminology resources

h) Management and decision-makers

Organizations shall identify relevant stakeholders for each language and define their roles and responsibilities in the terminology workflow.

8.3.2 Collaboration models

Effective collaboration models for multilingual terminology work include:

a) Centralized model (core team coordinates all language work)

b) Distributed model (language-specific teams with central coordination)

c) Hybrid model (combination of centralized and distributed elements)

d) Community model (broader stakeholder involvement with expert oversight)

e) Expert network model (reliance on external subject matter experts)

The choice of collaboration model should consider:

a) Organizational structure

b) Geographic distribution of expertise

c) Language priorities

d) Resource constraints

e) Quality requirements

f) Timeline considerations

8.3.3 Communication protocols

Clear communication protocols shall be established:

a) Regular coordination meetings across language teams

b) Shared documentation and progress tracking

c) Issue escalation procedures

d) Decision-making processes

e) Conflict resolution mechanisms

f) Knowledge sharing practices

g) Feedback channels

8.4 Multilingual terminology workflow stages

8.4.1 Concept identification and analysis

The workflow shall begin with concept identification and analysis:

a) Identify concepts requiring multilingual representation

b) Analyze concept characteristics and boundaries

c) Determine concept relationships and systems

d) Document concept origins and cultural context

e) Identify potential equivalence challenges

f) Prioritize concepts for multilingual development

g) Document initial concept information in authoritative language(s)

8.4.2 Term extraction and research

Term extraction and research shall be conducted:

a) Extract term candidates from authoritative sources

b) Research existing terminology usage in each language

c) Consult subject matter experts in each language

d) Analyze term usage patterns and contexts

e) Document term variants and synonyms

f) Identify potential cultural or linguistic issues

g) Compile preliminary term lists for each language

8.4.3 Collaborative development

Collaborative development of multilingual terminology shall include:

a) Draft definitions in authoritative language(s)

b) Propose equivalent terms in target languages

c) Assess equivalence relationships

d) Develop target language definitions

e) Document usage contexts and examples

f) Address cultural adaptation needs

g) Resolve terminology conflicts and inconsistencies

8.4.4 Review and validation

Multilingual terminology shall undergo review and validation:

a) Expert review of conceptual accuracy

b) Linguistic review of term appropriateness

c) Cross-language consistency review

d) Cultural appropriateness review

e) User acceptance testing

f) Compliance and legal review if applicable

g) Final approval by designated authorities

8.4.5 Implementation and dissemination

Approved terminology shall be implemented and disseminated:

a) Import into terminology management systems

b) Format for various delivery channels

c) Integrate with content creation tools

d) Distribute to stakeholders

e) Provide training and guidance

f) Monitor initial usage

g) Gather feedback for improvement

8.4.6 Maintenance and updating

Ongoing maintenance and updating shall be established:

a) Regular review cycles for all language versions

b) Process for handling change requests

c) Update synchronization across languages

d) Version control and history tracking

e) Obsolescence management

f) Feedback incorporation

g) Continuous improvement processes

8.5 Authority assignment in workflows

8.5.1 Authority determination workflow

The workflow for determining authoritative language versions shall include:

a) Application of established criteria for authoritative status

b) Documentation of the rationale for authority decisions

c) Review and approval of authority designations

d) Communication of authority status to all stakeholders

e) Implementation of authority markers in terminology resources

f) Periodic review of authority designations

8.5.2 Workflow for informative versions

The workflow for developing informative language versions shall:

a) Begin after authoritative versions are approved

b) Include reference to authoritative source(s)

c) Involve qualified translators and subject matter experts

d) Include validation against authoritative versions

e) Document the relationship to authoritative versions

f) Establish review processes appropriate to informative status

8.5.3 Authority transition management

When authority status changes, the workflow shall include:

a) Documentation of the rationale for the change

b) Review of the newly authoritative version

c) Update of all affected terminology entries

d) Communication to all stakeholders

e) Revision of dependent informative versions

f) Update of all documentation and metadata

8.6 Quality assurance in multilingual workflows

8.6.1 Quality criteria

Quality criteria for multilingual terminology shall be established:

a) Conceptual accuracy and clarity

b) Linguistic correctness and appropriateness

c) Cultural sensitivity and appropriateness

d) Consistency within and across languages

e) Compliance with terminology standards

f) Usability for target audiences

g) Technical accuracy and precision

8.6.2 Quality control processes

Quality control processes shall be integrated throughout the workflow:

a) Entry-level validation checks

b) Peer review processes

c) Expert validation procedures

d) Cross-language consistency checks

e) User feedback mechanisms

f) Automated quality checks

g) Regular quality audits

8.6.3 Continuous improvement

Continuous improvement of multilingual terminology workflows shall be implemented through:

a) Regular workflow evaluation

b) Stakeholder feedback collection

c) Performance metrics analysis

d) Identification of recurring issues

e) Process optimization

f) Best practice documentation

g) Training and skill development

8.7 Technology support for multilingual workflows

8.7.1 Terminology management systems

Terminology management systems supporting multilingual workflows shall provide:

a) Support for all required languages and scripts

b) Concept-oriented data structures

c) Authority status tracking

d) Equivalence relationship management

e) Collaborative workflow features

f) Version control and history tracking

g) Integration with content creation tools

8.7.2 Collaboration tools

Collaboration tools for multilingual terminology work shall support:

a) Cross-language team communication

b) Document sharing and co-editing

c) Task assignment and tracking

d) Review and approval processes

e) Comment and feedback mechanisms

f) Version comparison

g) Knowledge sharing

8.7.3 Automation opportunities

Workflow automation opportunities include:

a) Term extraction from corpora

b) Consistency checking

c) Status tracking and notifications

d) Validation against rules and patterns

e) Report generation

f) Integration with translation management systems

g) Synchronization across systems

9 Technical implementation

9.1 General

The technical implementation of multilingual terminology resources requires careful consideration of data structures, exchange formats, system architecture, and integration with other tools and processes. This section outlines approaches for implementing multilingual terminology resources that effectively support the principles and workflows described in previous sections.

The guidelines in this section are designed to ensure that technical implementations of multilingual terminology resources are robust, scalable, interoperable, and capable of supporting the complex requirements of multilingual terminology management.

9.2 Data modeling for multilingual terminology

9.2.1 Concept-oriented data model

Multilingual terminology resources shall be based on a concept-oriented data model:

a) Each concept forms the core of a terminological entry

b) All language versions are linked to the same concept

c) Concept characteristics are documented independently of language-specific representations

d) Concept relationships are maintained at the concept level

e) Language-specific information is clearly distinguished from concept-level information

EXAMPLE Concept-oriented data model example:

```
Concept ID: C-0042
  Domain: Information Technology
  Concept diagram: [link to visual representation]
  Concept relationships:
    - broader: C-0040 (Computing)
```

```
    - related: C-0043 (Cloud Storage)

  Language versions:
    en [AUTHORITATIVE]:
      Term: cloud computing
      Definition: model for enabling ubiquitous, convenient, on-demand network
      access to a shared pool of configurable computing resources
      Usage context: "The company migrated its infrastructure to cloud computing."

    fr [INFORMATIVE]:
      Term: informatique en nuage
      Definition: modèle permettant un accès omniprésent, pratique et à la
      demande par le réseau à un pool partagé de ressources informatiques
      configurables
      Usage context: "L'entreprise a migré son infrastructure vers
      l'informatique en nuage."
```

9.2.2 Data categories

Data categories for multilingual terminology shall include:

a) Core concept information (ID, domain, concept relationships)

b) Term-related information (term, part of speech, usage status)

c) Definition-related information (definition, source, context)

d) Administrative information (creation date, modification date, responsible party)

e) Language-specific information (language code, regional variant, script)

f) Authority information (authoritative/informative status, authority criteria)

g) Equivalence information (equivalence type, equivalence notes)

h) Cultural information (cultural notes, adaptation guidance)

Data categories shall be defined in accordance with ISO 30042:2019 and documented in a data category registry.

9.2.3 Metadata requirements

Metadata for multilingual terminology resources shall include:

a) Resource identification information

b) Included languages and their status

c) Subject fields covered

d) Creation and modification dates

e) Responsible organizations and individuals

f) Version information

g) Usage rights and permissions

h) Applicable standards and guidelines

i) Quality assurance information

j) Intended user groups

9.3 Exchange formats and interoperability

9.3.1 TBX implementation

Terminology exchange between systems shall use TBX (TermBase eXchange) format as specified in ISO 30042:2019:

a) TBX dialect selection appropriate to the application

b) Proper mapping of data categories to TBX elements

c) Inclusion of required administrative information

d) Appropriate handling of language codes

e) Proper representation of concept relationships

f) Documentation of custom data categories

g) Validation against TBX schemas

EXAMPLE Example of TBX representation for a multilingual entry:

```
<termEntry id="C-0042">
  <descrip type="subjectField">Information Technology</descrip>
  <langSet xml:lang="en">
    <descrip type="authorityStatus">authoritative</descrip>
    <tig>
      <term>cloud computing</term>
      <termNote type="partOfSpeech">noun</termNote>
      <descrip type="definition">model for enabling ubiquitous, convenient,
      on-demand network access to a shared pool of configurable computing
      resources</descrip>
    </tig>
  </langSet>
  <langSet xml:lang="fr">
    <descrip type="authorityStatus">informative</descrip>
    <tig>
      <term>informatique en nuage</term>
      <termNote type="partOfSpeech">noun</termNote>
      <descrip type="definition">modèle permettant un accès omniprésent,
      pratique et à la demande par le réseau à un pool partagé de ressources
      informatiques configurables</descrip>
    </tig>
  </langSet>
</termEntry>
```

9.3.2 Other exchange formats

In addition to TBX, other exchange formats may be supported:

a) CSV/Excel for simple terminology lists

b) XML formats for specific applications

c) JSON for web applications

d) RDF/OWL for semantic web applications

e) Custom formats for specific tools

When using formats other than TBX, organizations shall:

a) Document the mapping between internal data model and exchange format

b) Ensure all essential information is preserved

c) Validate the exchange format against defined schemas

d) Test the exchange process thoroughly

e) Document any limitations or information loss

9.3.3 API considerations

APIs for multilingual terminology resources shall support:

a) Retrieval of complete terminological entries

b) Language-specific queries

c) Concept-based queries

d) Filtering by various criteria

e) Authentication and authorization

f) Rate limiting and usage monitoring

g) Comprehensive error handling

h) Documentation and examples for all supported languages

9.4 Multilingual database design

9.4.1 Character set and encoding

Multilingual terminology databases shall support:

a) Unicode character encoding (preferably UTF-8)

b) All scripts required for included languages

c) Bidirectional text handling

d) Special characters and symbols

e) Proper sorting and collation for all languages

f) Normalization of character representations

g) Fallback mechanisms for unsupported characters

9.4.2 Search and retrieval considerations

Search and retrieval functionality shall support:

a) Language-specific search options

b) Script-specific search features

c) Fuzzy matching appropriate to each language

d) Morphological analysis for relevant languages

e) Cross-language search capabilities

f) Filtering by authority status

g) Filtering by equivalence type

h) Combined concept and language-based queries

9.4.3 Performance considerations

Performance optimization for multilingual databases shall address:

a) Indexing strategies for multiple languages

b) Caching mechanisms for frequently accessed entries

c) Query optimization for language-specific searches

d) Scalability for growing language coverage

e) Response time targets for different operations

f) Load balancing for distributed access

g) Monitoring and performance tuning

9.5 Integration with other systems

9.5.1 Content authoring integration

Integration with content authoring systems shall provide:

a) Real-time terminology verification

b) Term suggestion capabilities

c) Context-sensitive terminology lookup

d) Automatic term recognition

e) Terminology consistency checking

f) Feedback mechanisms for terminology issues

g) Support for all authoring languages

9.5.2 Translation management integration

Integration with translation management systems shall support:

a) Terminology extraction from source content

b) Terminology verification during translation

c) Automatic propagation of terminology updates

d) Term candidate identification

e) Terminology consistency metrics

f) Terminology feedback workflows

g) Support for all translation languages

9.5.3 Localization workflow integration

Integration with localization workflows shall enable:

a) Terminology verification during localization

b) Cultural adaptation guidance

c) Regional variant management

d) Terminology consistency across localized content

e) Feedback mechanisms for localization-specific terminology issues

f) Support for locale-specific terminology requirements

9.6 Technical considerations for authority and equivalence

9.6.1 Authority status implementation

Technical implementation of authority status shall include:

a) Clear status indicators in the data model

b) Status filtering in search interfaces

c) Status-based access controls if required

d) Status change tracking and history

e) Status-based validation rules

f) Status visualization in user interfaces

g) Status preservation in data exchange

9.6.2 Equivalence relationship implementation

Technical implementation of equivalence relationships shall provide:

a) Storage of equivalence type information

b) Visualization of equivalence relationships

c) Navigation between equivalent terms

d) Filtering by equivalence type

e) Documentation of equivalence assessment

f) Equivalence-based validation rules

g) Preservation of equivalence information in exchange formats

9.7 Security and access control

9.7.1 User roles and permissions

Security implementation shall include role-based access control:

a) Terminologist roles for each language

b) Reviewer roles for quality assurance

c) Administrator roles for system management

d) Read-only roles for general users

e) Language-specific roles for multilingual management

f) Subject field expert roles

g) External collaborator roles

9.7.2 Audit and compliance

Audit capabilities shall support:

a) Tracking of all terminology changes

b) User attribution for modifications

c) Timestamp information for all activities

d) Approval workflow documentation

e) Compliance verification

f) Activity reporting

g) Security incident monitoring

9.8 Deployment and scaling

9.8.1 Deployment models

Deployment options for multilingual terminology systems include:

a) On-premises installation

b) Cloud-based deployment

c) Hybrid deployment

d) Containerized deployment

e) Distributed deployment for global access

f) Mobile-accessible deployment

g) Offline-capable deployment

9.8.2 Scaling considerations

Scaling strategies shall address:

a) Growth in number of languages

b) Growth in terminology volume

c) Increasing user base

d) Geographic distribution of users

e) Performance requirements

f) Availability requirements

g) Disaster recovery needs

Bibliography

[1] ISO 860:2007, *Terminology work — Harmonization of concepts and terms*

[2] ISO 1087:2019, *Terminology work and terminology science — Vocabulary*

[3] ISO 9001:2015, *Quality management systems — Requirements*

[4] ISO 12615:2004, *Bibliographic references and source identifiers for terminology work*

[5] ISO 12616:2002[4)], *Translation-oriented terminography*

[6] ISO 12620:2019[5)], *Management of terminology resources — Data category specifications*

[7] ISO 15188:2001, *Project management guidelines for terminology standardization*

[8] ISO 16642:2017, *Computer applications in terminology — Terminological markup framework*

[9] ISO 18841:2018, *Interpreting services — General requirements and recommendations*

[10] ISO 20771:2020, *Legal translation — Requirements*

[11] ISO 21998:2020, *Interpreting services — Healthcare interpreting — Requirements and recommendations*

[12] ISO 21999:2020, *Interpreting services — Conference interpreting — Requirements and recommendations*

[13] ISO 22128:2008, *Terminology products and services — Overview and guidance*

[14] ISO 23185:2009, *Assessment and benchmarking of terminological resources — General concepts, principles and requirements*

[15] 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*

[16] ISO 26162-1:2019, *Management of terminology resources — Terminology databases — Part 1: Design*

[17] ISO 26162-2:2019, *Management of terminology resources — Terminology databases — Part 2: Software*

[18] Sager1990, Sager, J.C. 1990. *A Practical Course in Terminology Processing*. Amsterdam/Philadelphia: John Benjamins.

[19] Oard1997, Oard, D.W. and B.J. Dorr. 1997. "A Survey of Multilingual Text Retrieval." *Technical Report UMIACS-TR-96-19*. College Park, MD: University of Maryland Institute for Advanced Computer Studies.

[20] Wright1997, Wright, S.E. and G. Budin. 1997. *Handbook of Terminology Management*. Amsterdam/Philadelphia: John Benjamins.

[21] Cabré1999, Cabré, M.T. 1999. *Terminology: Theory, Methods, and Applications*. Amsterdam/Philadelphia: John Benjamins.

[22] Esselink2000, Esselink, B. 2000. *A Practical Guide to Localization*. Amsterdam/Philadelphia: John Benjamins.

4) Cancelled and replaced by ISO 12616-1:2021.

5) Cancelled and replaced by ISO 12620-1:2022.

[23] Temmerman2000, Temmerman, R. 2000. *Towards New Ways of Terminology Description: The Sociocognitive Approach*. Amsterdam/Philadelphia: John Benjamins.

[24] Dunne2006, Dunne, K.J. (ed). 2006. *Perspectives on Localization*. Amsterdam/Philadelphia: John Benjamins.

[25] Gouadec2007, Gouadec, D. 2007. *Translation as a Profession*. Amsterdam/Philadelphia: John Benjamins.

[26] Singh2011, Singh, N. 2011. *Localization Strategies for Global E-Business*. Cambridge: Cambridge University Press.

[27] Faber2012, Faber, P. (ed). 2012. *A Cognitive Linguistics View of Terminology and Specialized Language*. Berlin/Boston: De Gruyter Mouton.

[28] Jiménez-Crespo2013, Jiménez-Crespo, M.A. 2013. *Translation and Web Localization*. London/New York: Routledge.

[29] Pym2014, Pym, A. 2014. *Exploring Translation Theories*. London/New York: Routledge.

[30] Kockaert2015, Kockaert, H.J. and F. Steurs (eds). 2015. *Handbook of Terminology, Volume 1*. Amsterdam/Philadelphia: John Benjamins.

Price based on 35 pages