LISE Legal Language Interoperability Services

GUIDELINES

for collaborative legal/administrative terminology work

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Foreword

Terminological theory may often clash against terminological practice, as shortage of staff and of financial means, urgent deadlines, limited availability of domain experts and tools that do not adequately support all steps of the terminological workflow hamper the potential of terminology work. The present Guidelines have been developed within the ICT-PSP project LISE – Legal Language Interoperability Services (http://www.lise-termservices.eu), which aimed at responding to the need for better tools supporting terminological activities and also at giving some methodological guidance for terminology work in the legal/administrative domain.

Several terminology centres and units in Europe do not possess written guidelines and instructions for their workflows or have only partial documentation. The Guidelines intend to offer an example of the general contents and issues such documentation should consider, e. g. a description of the full workflow, specifications concerning all activities carried out, the roles involved and the methodologies applied.

This document is not intended to be an academic product, but rather a very practical collection of suggestions, inputs and experiences in legal and administrative terminology and terminography. For this reason it contains very limited references.

The authors would like to thank all the terminologists, terminology managers and translators-terminologists who participated in the interviews conducted within the LISE project in 2011 and 2012 and whose contribution has been extremely valuable for drafting these Guidelines.

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Elena Chiocchetti and Natascia Ralli
(editors)

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Executive Summary

The present Guidelines aim at alleviating the methodological difficulties faced when doing collaborative terminology work in the legal/administrative domain. Many small and large organisations doing terminology work in Europe do not have written guidelines and instructions for their workflows or have only partial documentation. One of the goals of the present Guidelines therefore is to offer an example of the contents and issues such documentation should consider. The hope is to encourage more terminologists to write and, ideally, share documentation on terminology workflows, activities, roles and methodologies.

After a brief introduction into the methodologies of "Legal comparison and terminology" (chapter 2), we describe the typical "Activities" (chapter 3) and "Roles" (chapter 4) involved in terminological workflows. The focus is set on terminology work in the legal and administrative domain with its specific and unique aspects, including standardisation. We then give a quick overview over the types of "Tools" (chapter 5) that can be used to support the workflow. Chapter 6 is a "Workflows – First aid kit" describing how to proceed in order to solve some typical issues in terminology workflows. Important aspects of "Cooperation and communication" in terminology are addressed in chapter 7. Finally, we list "Relevant international standards" (chapter 8) and provide a "Glossary of terms" (chapter 9) used in the Guidelines. The boxes at the end of each section or sub-section summarise important aspects to be considered when doing collaborative terminology work in the legal/administrative domain.

The Guidelines address anyone who deals with legal and administrative terminology and does or intends to do terminology work in this domain. They are written for terminologists and terminology managers, but also for translators, interpreters, legal experts, drafters, standardisers and end users who are involved in terminology workflows. They can be useful for private and public administrators, especially in multilingual settings, as well as for IT staff at the service of terminology work and for students (e. g. of translations studies). The Guidelines particularly concern those who wish to cooperate on, share, discuss and exchange terminology.

These Guidelines have been developed within the ICT-PSP project LISE – Legal Language Interoperability Services (Grant Agreement n° 270917). The project developed a LISE service platform and makes dedicated terminology tools available that support the clean-up, sharing, exchanging and harmonising of terminology. More information on the project is available on the LISE website: http://www.lise-termservices.eu

1. Introduction

Terminology work is an interdisciplinary activity, especially in the domain of law and administration, where the cooperation of terminologists, language experts and legal experts is extremely important, due to the many particular features of this domain. With the enlargement of the European Union to 27 Member States and 23 official and working languages, the growing international cooperation and a new era of globalisation ahead, clear and consistent communication becomes an urgent need. Terminology work serves exactly this purpose, especially in domains that are at the basis of international cooperation, such as law and administration. Much terminology work has been done in the last decades, with an unequal coverage of languages or language pairs, domains and legal systems. Important experiences, such as the creation of the inter-institutional terminological database of the European Union (IATE) in 2004, that collected the formerly separate terminological databases of several EU institutions, have shown that sharing terminological data is an urgent need today, but also that there is a lack of resources and methodologies. The present Guidelines aim at alleviating the methodological difficulties faced when collaborative terminology work in the legal/administrative domain is coordinated between

- translators/interpreters and terminologists
- terminologists and domain experts
- terminologists and IT staff
- terminologists of different language units
- different terminology units
- different departments within an organisation
- different organisations

Many small and large organisations doing terminology work in Europe do not have written guidelines and instructions for their workflows or have only partial documentation. One of the goals of the present Guidelines therefore is to offer an example of the contents and issues such documentation should consider. The hope is to encourage more terminologists to write and, ideally, share documentation on terminology workflows, activities, roles and methodologies. The authors of the present Guidelines also wish to encourage data owners to publish and share their terminological resources, to cooperate more closely and join forces. Various terminological databases that were previously not easily available to the public have been made available in the last years, but a lot of terminological data remains accessible only to a limited number of people. Sharing, exchanging and openly discussing terminologies can

contribute to rendering terminological data more useful and communicating the need for terminology work better to stakeholders at all levels.

1.1. Purpose and origin of the Guidelines

These Guidelines have been developed within the ICT-PSP project LISE – Legal Language Interoperability Services (Grant Agreement n° 270917) with the aim of supporting multilingual collaborative and inter-institutional terminology work in the legal/administrative domain. The project developed a LISE service platform and makes dedicated terminology tools available that support the clean-up, sharing, exchanging and harmonising of terminology. More information on the project is available on the LISE website: http://www.lise-termservices.eu.

The content of the Guidelines is based on the results of an online survey and on 17 interviews conducted with representatives of national and international, public and private, smaller and larger terminology centres between 2011 and 2012. We wish to thank all those who participated in the survey and interviews and contributed to these Guidelines with their precious input and information.

1.2. Target group of the Guidelines

The present Guidelines address anyone who deals with legal and administrative terminology and does or intends to do terminology work in this domain. They are written for terminologists and terminology managers, but also for translators, interpreters, legal experts, drafters, standardisers and end users who are involved in terminology workflows. They can be useful for private and public administrators, especially in multilingual settings, as well as for IT staff at the service of terminology work and for students (e. g. of translations studies). The Guidelines particularly concern those who wish to cooperate on, share, discuss and exchange terminology.

1.3. How to read the Guidelines

The Guidelines are organised keeping a full terminology workflow in mind. Each task and role in the workflow is considered separately. General background and methodological aspects are treated in dedicated sections. The Guidelines are available in English and can be downloaded from the project website: http://www.lise-termservices.eu/downloads.

Terminology defined in chapter 9 "Glossary of terms and definitions" is printed in small caps in the main text (e. g. CONCEPT) the first time it appears in a new section, beginning in chapter 2 "Legal comparison and terminology" until chapter 7 "Cooperation and communication". Specific references are cited in short form in footnotes and in full form in chapter 10 "References". The boxes at the end of each section or subsection contain important aspects to be considered when doing collaborative terminology work in the legal/administrative domain.

2. Legal Comparison & Terminology

The present document is focused on legal and administrative language; it is therefore necessary to provide a brief introduction to the peculiar aspects of this SPECIAL LANGUAGE and to the particular methods that allow establishing EQUIVALENCE between TERMS.

2.1. Language and law

Language and law are deeply intertwined: law expresses itself through language. More precisely, the law is actually *made of* language[1]. Legal language, unlike other SPECIAL LANGUAGES, not only serves to describe reality, but rather *creates* and *modifies* it[2]. The law heavily influences society and the daily lives of every individual: in other words, every aspect of our lives, from birth to death, is permeated with law. As a consequence, legal texts need not only to be written in a legally correct and precise way, but also with great attention to communicative aspects and to the efficient transmission of their content. In the daily implementation and application of law, however, the balance between precision and vagueness of legal language is often tilted towards the latter. Precision may clash with the requirement of linguistic fluency and the need for some freedom of interpretation in the daily implementation of legal provisions. This is reflected in legal terminology as well.

Each legal system has its own conceptual structures and specific legal realia. Every object, action and procedure pertains to a determined legal system and is motivated by cultural, historic, social and economic factors. The ensuing close relation between legal terminology and the legal system it expresses, which de Groot[3] terms *Systemgebundenheit*, leads to the difficulty in comparing the terminology of different legal systems. TERMS pertaining to distinct legal systems usually differ in meaning: no matter how similar they may look, full EQUIVALENCE is quite rare.

In addition, legal terms do not necessarily describe only CONCEPTS that relate to real-world objects, but often designate highly abstract concepts that are equally linked, as explained above, to the history and culture of a specific legal tradition. This is particularly evident, for example, in the provisions regulating social security in different countries. It is precisely an effect of this strong connection that makes legal

1 Cortelazzo 1997:36
2 Fioritto 2007:408
3 De Groot 1999a:206, 1999b:12 ff.

concepts so difficult to transpose from one legal system into another and, as a consequence, renders legal translation a very complex task.

2.2. The method: micro-comparison

When language barriers are coupled with conceptual barriers, i. e. when a transfer takes place across languages *and* legal systems and so calls for a comparison of legal CONCEPTS and cultures, conveying the message across these barriers becomes particularly daunting. Linguistic and cultural competences in the source and target languages need to be completed by the legal competences in the source and target cultures.

This calls for an in-depth study of both, the legal framework of the source legal system and of the target system, as the only possible strategy for successfully comparing legal rules and concepts belonging to different legal systems in order to measure their similarity and degree of correspondence. Studying and understanding the target legal systems implies using the reference material that native legal experts would consider and attributing to the different sources (legislation, legal theory, case law, etc.) the same value as they would. This cognitive activity is part of micro-comparison.

Micro-comparison is a type of research in comparative law which investigates concepts or aspects of two or more legal systems with the aim of acquiring more knowledge and identifying similarities and differences between legal systems. From a terminological point of view, micro-comparison provides the basis for addressing translation gaps and terminological inconsistencies as well as for evaluating the transferability of legal concepts from one legal system to another. This holds true both from the conceptual perspective and from the more practical perspectives of effectiveness and function.

Micro-comparison is enacted at two levels:

- at interlinguistic level, i. e. between legal systems that use different languages
- at intralinguistic level, i. e. between legal systems that use the same language

At the intralinguistic level micro-comparison helps, for instance, with assessing if the same DESIGNATION is used to represent either the same legal concept or different legal concepts.

2.3. Objectives of micro-comparison

Micro-comparison allows to place (and thus to better understand) a CONCEPT within its own legal reality as well as to assess its transferability from a source to a target legal system, e. g. during legal translation. In this way it also represents a means of circulating legal models and transferring knowledge across legal systems, a necessary prerequisite for enhancing international cooperation and legal integration.

The main objectives of micro-comparison are:

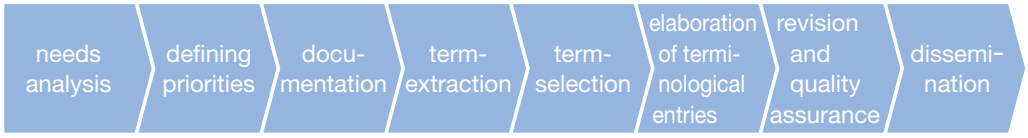
- understanding the target legal system
- circulating legal models
- legal integration
- adopting the model of a foreign legal system
- integrating regulations from a foreign legal model to improve one's own
- mutual knowledge and understanding in the DOMAIN of law

In TERMINOLOGY WORK, micro-comparison has a definitely practical purpose. Comparative analyses aim at finding DESIGNATIONS for a concept, but also at studying the concept within the framework of the domain it belongs to in order to facilitate mutual understanding and communication across different legal systems. This is why it is so important to pinpoint any similarities and differences between the source and target languages and legal systems to convey the meaning of a TERM in an efficient and correct way from the point of view of language, legal content and communicative effect.

When doing terminology work in the domain of law and administration, it is essential for terminologists and domain experts to cooperate, share methodologies and understand each other's strategies for retrieving equivalents or spotting terminological gaps in other languages and legal systems.

3. Activities

An exemplary descriptive terminology workflow consists in a series of activities that in theory can be carried out in a sequence, but in practice are more often performed in various loops, be they complete or partial loops. According to the type, purpose, target users, DOMAINS and languages considered in TERMINOLOGY WORK, as well as some other factors such as the availability of documentation and dedicated tools or temporal and financial limitations, some steps listed in the present section might be considered more or less relevant, be performed with the help of dedicated software or manually, repeated or even skipped altogether. Maintenance should obviously be a constant activity.



A prescriptive element can be introduced in the descriptive workflow *a posteriori*. This can happen when descriptive terminology work shows the need for standardisation. As a consequence, in some situations standardisation can actually be based on descriptive terminological material. However, more often the prescriptive purpose of work is known from the very beginning. In that case, a standardisation-oriented element affects the way every activity is carried out in order to save time and resources. For example, standardisers might be involved in the documentation and term selection phase, terminologists might concentrate on TERMS used in certain types of sources rather than others, specific NOTES might be added to the TERMINOLOGICAL ENTRIES during elaboration, etc. In the following sections we will concentrate on a typically descriptive workflow, while section 3.9 "Standardisation" will provide more information on prescriptive terminology work.

3.1. Needs analysis

Needs analysis is the process of identifying and evaluating needs in a defined community. A need can be defined as a gap between "what is" and "what should be"[4]. The following four steps are essential in TERMINOLOGY WORK:

- establishing the "as-is" situation or background (current situation)

4 Witkin & Altschuld 1995:4

- determining the "what should be" state (desired situation)
- envisaging one or more possible approaches to the problem (solution)
- implementing of one of the solutions (realisation)

Two parameters are indispensable in the terminology needs analysis: the time frame of terminology elaboration and the scope of information deficit (the terminological issue(s) that need to be solved).

Time frame describes the point in time when the terminology is or will be needed, either on a short-term basis, e. g. during text production or urgent translation, on a medium-term basis, e. g. during a large translation project, or on a long-term basis, e. g. in the next legislation period. The scope of information deficit can equally be small, medium or large.

Three basic types of needs analysis are relevant for collaborative legal/administrative terminology work:

Scenario 1: short-term small need for terminology work

current situation	The TERMINOLOGICAL RESOURCE concerned is incomplete. A specific terminology problem arises on a short-term basis. The scope of information deficit is small.
desired situation	Terminology is provided on a short notice in order to complete the specific task.
solution	**AD-HOC TERMINOLOGY WORK**
realisation	Terminology is compiled **during** translation work or any other activity it serves.

Scenario 2: medium-term medium to large need for terminology work

current situation	The terminological resource concerned is incomplete. A specific terminology problem arises on a medium-term to long-term basis. The scope of information deficit is medium to large.
desired situation	Missing terminology is available by the time users will needed it.
solution	Ex ante/**proactive terminology work**
realisation	Terminology is compiled **before** translation work or any other activity it serves.

Scenario 3: long-term large need for terminology work

current situation	Terminology does not exist in one or several specific DOMAINS and/or languages. A specific terminology problem arises on a long-term basis. The scope of information deficit is large.
desired situation	New terminology available in one or more specific domains and/or languages.
solution	Domain-specific/**SYSTEMATIC TERMINOLOGY WORK**
realisation	Terminology is compiled **before** translation work or any other activity it serves.

An initial needs analysis allows to define which type of terminology workflow should be established.

3.2. Defining priorities

Different types of terminological needs might arise at the same time. Terminologists must decide (in advance) which requests are to be tackled first, according to the main purpose of TERMINOLOGY WORK. For example, when terminology work is chiefly meant to support a translation unit, requests from translators are usually given priority.

Whenever terminologists are confronted with a terminological issue to be solved, the problem-solving workflow encompasses some or all of the following steps. Depending on the type of terminological issue and availability of resources, some steps might not be relevant or be taken in a different order:

- prioritise incoming requests
- look up the relevant TERM(S) and related information in the main TERMINOLOGICAL RESOURCE available (e. g. a public terminological database or an internal terminological database with further information, such as new or non-finalised terminological data)
- if the term(s) is/are not found in the main terminological resource, identify the relevant DOMAIN(S) (and possibly forward the request to the terminologist(s) responsible for the domain(s)/language(s) concerned)
- if the term(s) is/are not found in the main terminological resource, assess their relevance (e. g. related terms that might be affected, political implications)
- consult other sources of information, i. e. other terminological databases or look for other terminological resources in the relevant domain
- consult other sources of information, e. g. domain-specific documentation, TEXT CORPORA, translation memories (if available)

- consult other sources of information, i. e. domain experts (ideally by referring to contact lists structured by domain) and ask for a DEFINITION or explanation of the CONCEPT(S) in question as well as for relevant documents to be consulted for further research, if necessary
- look up the term(s) in texts/sources recommended by domain experts
- collect the terms, definitions, CONTEXTS, VARIANTS, SYNONYMS, EQUIVALENTS and any further relevant terminological data; enter it into the terminological resource (some organisations have internal terminological database where entries can be marked as "in process" or hidden from the general public)
- discuss the terminological issue with other terminologists, domain experts, native speakers, etc. to formulate a solution to the request (e. g. propose a main term, indicate an equivalent in a specific language)
- write an answer (with explanation) to the person(s) who filed the request(s)
- decide whether the term(s)/concept(s) treated should be further researched and worked on
- edit or update the relevant terminological data (e. g. after in-depth research)

3.3. Documentation

TERMINOLOGY WORK is mainly document-based. In legal/administrative terminology work the process of documentation might clash against some standard rules in document collection for terminology work. First of all, the hierarchy of legal sources may be relevant. This legal hierarchy must be considered separately for every DOMAIN treated, as not all types of sources might be equally relevant in all domains (e. g. the importance of international treaties for human rights terminology vs. local legislation in urban planning terminology). With respect to terminology work in other domains and despite the synchronic focus of terminology work in general, in legal terminology work texts written several decades ago might still be fundamental as a terminological reference (e. g. a Constitution drafted after the Second World War). In addition, texts with different positions in the legal hierarchy might use different terminology (e. g. codices vs. decrees vs. administrative texts). This implies, for example, that notwithstanding the principle of legal hierarchy, terms proper to lower sources could be relevant and should be taken into consideration, in accordance with the specific aim of the terminological project.

A further aspect to be considered is the possible necessity of including translated texts into the collection of documents or TEXT CORPUS, which is not common termi-

nological practice. For example, international treaties, EU legislation or some language versions of legal texts in multilingual countries like Switzerland might be legally binding and represent a terminological reference even though they are in fact translations from another language.

Sources

There are many different types of sources that can be used for terminology work[5]

- legal documents
- standards
- documents generally recognised by the scientific community (e. g. textbooks, periodicals)
- current but not necessarily recognised material (e. g. directions for use, reports)
- experts
- terminological databases
- terminological data collections, dictionaries and encyclopaedias
- terminological data found in websites, networks and other electronic sources

The relevance of some type of source or other depends on a series of factors, e. g. the aim, type and content of terminology work, the domain treated, the languages considered, the end users and the available material. Some sources might be more or less authoritative than others. In terminology work, authoritative sources are normally given preference over other sources, as are recent texts and original language texts. Reliability, pertinence, objectivity and general acceptance of the sources in the domain should be assessed and can be used as guiding criteria for document selection. Also, the date of production and the author can influence the evaluation of a source.

According to a series of factors related e. g. to the purpose, content and target users of terminology work, some types of sources can be considered more or less relevant and more or less authoritative than others. Reliability of sources, their pertinence, objectivity, general acceptance in the domain, date of production and author should be assessed and can be used as guiding criteria for document selection.

5 Cf. ISO 10241-1:2011, clause 4.3.5

Text types

There are different classifications of legal and administrative texts. Busse[6], for example, proposes the following classification of text types:

- normative texts
- texts for legal interpretation
- jurisdiction
- proceedings and trials
- allegations
- texts for legal execution and enforcement
- contracts
- certificates
- texts on legal theory and for education

Each text type can be used for different purposes. DEFINITIONS are more likely to be found in normative texts, university handbooks and manuals. Definitions found in legal texts may sometimes be restricted to a specific context and/or differ from the definitions commonly accepted in domain communication, e. g. they can be broader or narrower. Case law has a strong subjective/interpretative element as it is drafted by one or more judges on a specific case and with notable time restrictions. However, it can be a very useful source of definitions, too. Proceedings, texts related to trials and contracts are likely to be full of collocations and fixed expressions.

When collecting documents for legal/administrative terminology work, some of the rules generally applied to text collection in other domains, such as the preference for recent texts and the exclusion of translated material, might not apply.

6 Busse 1996:669 ff.

Hierarchy of sources in legal/administrative terminology work

The VARIANTS and SYNONYMS used to designate the same CONCEPT may be extracted from different types of sources. According to the DOMAIN under analysis and the purpose of the TERMINOLOGICAL RESOURCE concerned, the type of sources considered can vary. During term selection, the hierarchy of sources is an important factor to be considered. Especially in prescriptive terminology work the main TERM might not be the most frequently used, but the one that occurs in the most authoritative sources. In legal/administrative TERMINOLOGY WORK there is a specific hierarchy of legal sources to be considered. The organisation terminology work is done for, its communicative aims, its content and the actual end users of terminology are further parameters that are relevant for defining a hierarchy of sources in terminology work.

The following list contains sources that are commonly used in legal/administrative terminology work. According to the parameters explained above, their relevance in specific terminology projects and their relative hierarchy might vary. As a consequence, the following is not intended as a strict hierarchy, but rather as a general guideline:

- international law (e. g. UN)
- supranational legislation (e. g. EU)
- national legislation
- regional and local legislation
- relevant publications (e. g. manuals and handbooks, possibly recommended by domain experts)
- jurisprudence
- legal dictionaries and encyclopaedias
- official terminological databases (e. g. IATE, TERMDAT)
- ...

The hierarchy given to the sources in legal/administrative terminology work depends on any applicable hierarchy of legal sources, on the subdomain under consideration, but also on the purpose and content of terminology work as well as on varying other factors.

3.4. Term extraction

One crucial task in TERMINOLOGY WORK is to identify and record the potential TERMS, i. e. CANDIDATE TERMS, for later input into the TERMINOLOGICAL RESOURCE in question. This activity is called TERM EXTRACTION and may be done in either of two ways:

- manually by reading texts and excerpting candidate terms
- semi-automatically or automatically by using dedicated tools

For (semi-)automatic term extraction there are roughly three methods that can be used:

- Candidate terms may be extracted by using underlying statistics, i. e., only strings of characters with a pre-defined frequency will be considered candidate terms. This method is independent of the language(s) concerned.
- The second method is linguistically based, i. e., texts are analysed for the different parts of speech before relevant word combinations are extracted by the software. This method uses language-specific rules and resources, which is why it may be more productive than the statistical method, but less flexible with regard to different languages.
- The third method is stop-word based, i. e. it uses lists of words that are considered of low terminological value, which are filtered out to extract the remaining strings of characters. These lists are created before term extraction starts and can be fine-tuned and updated after each term extraction operation.

These methods are often used in combination to obtain better results during extraction.

When the activity of term extraction is purely intellectual human work, it usually partly coincides with the process of term selection, i. e. some terms might be excluded a priori (e. g. terms that are considered too general or too specific, pertaining to other neighbouring DOMAINS or already present in the terminological database).

If terminology work aims at completing and updating terminological resources rather than at adding a full set of new TERMS (e. g. a new domain), it is necessary to assess which data is already available in the terminological database concerned. For example, terms that are already present could automatically be excluded during term extraction.

The decision on what methods and tools (or combinations thereof) to use depends on the specific needs, i. e. the language or languages concerned, the types of text to be processed, etc. Also, it is fundamental that the raw material produced by (semi-)automatic term extraction (lists of candidate terms) is examined and validated by terminologists before it is further worked on.

3.5. Term selection

Term selection is the process of validating potential terms (CANDIDATE TERMS) according to the objectives and requirements defined for the terminological working environment, either from a TEXT CORPUS or from a list of (semi-)automatically extracted candidate terms. This task is often performed or assisted by domain experts.

People with different backgrounds (terminologists vs. technical writers, professional translators vs. legal experts, etc.) hold different views as to what is a TERM and what is not. Thus, the property of being a term ("termhood") should be defined early on by those involved in TERMINOLOGY WORK so as to avoid discussions and inconsistencies at a later stage. The selection of terms and the level of termhood also strongly depend on the purpose and intended end users of terminology.

The process of term selection can aim at deciding on the full set of terms of a new DOMAIN to be added to the TERMINOLOGICAL RESOURCE or on a subset of missing terms. As a consequence, it will be necessary to compare the selected terms with the existing terms, either manually or with the help of a dedicated script or programme. In this way the terms that have already been treated in the terminological resource can be deleted automatically from the lists of extracted candidate terms. At a conceptual level, it might also be necessary to check existing concept trees against the need of updating and modifying them after having selected the new terms to be added to the terminological resource.

People with different backgrounds, especially legal experts and terminologists, have different views as to what is a term. Thus, when starting collaboration in the term selection phase it is important to define the characteristics of the terms to be selected for further elaboration.

3.6. Elaboration of terminological entries

Considering the main object of analysis, we can distinguish three main types of TERMINOLOGY WORK:

- AD-HOC TERMINOLOGY WORK (express terminology work, terminology helpdesk, real-time terminology work, just-in-time terminology work)
- text-based terminology work (can be proactive terminology work)
- SYSTEMATIC/domain-specific TERMINOLOGY WORK (can be proactive terminology work)

Ad-hoc terminology work

Ad-hoc terminology work consists in researches about single terminological issues which have to be solved in a very short time. They take place, for example, because:

- translators, interpreters, drafters, etc. (in-house or external staff) need terminology for a specific job and do not know which DESIGNATIONS to use; not having the time (and/or the specific skills) to do terminology work, the terminologists are asked for help
- people from the general public want to know a TERM in another language
- an organisation wants to change certain designations (e. g. department names, product names, brand names) and asks for recommendations

Proactive terminology work (domain-specific/text-based)

Proactive terminology work is done by assessing probable future needs concerning DOMAINS to be discussed, texts to be translated, legislation to be passed, etc. Terminologists try to anticipate future needs by working on entire domains and text-specific terminology that is not already present in the TERMINOLOGICAL RESOURCE of reference.

Systematic terminology work

Systematic terminology work is a domain-specific activity. It is time-consuming, but allows terminologists to concentrate on one domain or set of related themes. This enhances their domain knowledge, allows a more efficient collection of documentation

and encompasses the creation of CONCEPT SYSTEMS. The resulting terminological resource can be published, e. g. as a glossary or dictionary, which can be useful both internally (e. g. for in-house translators/interpreters) and externally (e. g. for domain experts, the general public).

As systematic terminology work is usually done within the framework of a project, it is necessary to decide on a specific workflow, assign tasks to competent staff, define milestones, etc.

Concept systems

Concept systems are a good way of structuring and transferring knowledge. Compared to ad-hoc terminology work and text-based terminology work, systematic terminology work usually allows for drawing up concept systems of the domain or subdomain treated. Concept systems map CONCEPTS against each other showing the broader, narrower and other related concept and making the relations between concepts explicit. The concepts of a domain are placed in the system with regard to the relationships that exist between them. These concept relations might be HIERARCHICAL RELATIONS (more specifically, GENERIC or PARTITIVE RELATIONS) or ASSOCIATIVE RELATIONS (i. e. non-hierarchical relations). The selection of concepts to be treated in a terminological resource is thus more consistent. Concept systems are also a good supporting tool for DEFINITION writing as they indicate the superordinate concepts/terms and allow identifying the main characteristics of a concept, thus distinguishing the concept under analysis from other (related) concepts.

Concept systems make it easier to identify SYNONYMS and EQUIVALENTS in other languages, too. When concepts systems are available in more than one language, comparing them allows assessing the different ways of structuring a domain, as well as revealing TERMINOLOGICAL GAPS.

Definitions[7]

A definition written by a domain expert can significantly differ from a definition written by a terminologist. Terminologists generally try to focus on a superordinate concept and the relevant characteristics of the concept under analysis in a very com-

7 For this and the following terminological data categories cf. also ISO TC 37 Data Category Registry "ISOcat" (www.isocat.org).

pact way (ideally in one sentence) and to embed it in a concept system. Domain experts often have a different approach, e. g. they tend to draft longer definitions and give additional information to explain a concept. When domain experts prepare definitions, terminologists should check them and, if necessary, re-write or shorten them so as to adjust them to their needs, the formal requirements of the terminological database and, most important, to the needs of the end users. When the user group is mixed, e. g. composed of language and domain experts, the terminologist should find the best compromise between a concise terminological definition and a more ample domain-specific definition. The new definition can then be sent back to the domain experts for approval and revision.

When a terminological resource serves a mixed audience of language and domain experts it is often necessary, especially in complex domains like law and administration, to find a compromise between the classical terminological definition and more informative (i. e. usually longer) definitions that may be more similar to encyclopaedic information. Rules on definition writing should be laid down in internal guidelines for terminology work.

Synonyms/variants

Domain and language experts should always verify whether terms are (real) synonyms or not, i. e. whether they represent the same concept and can be used interchangeably in all contexts within the same domain. If this interchangeability is limited to some contexts and inapplicable in others, they are considered quasi-synonyms. Further information on the restrictions of use can be given in a NOTE.

Some terms are not synonyms but rather VARIANTS of the same term, e. g. short forms like acronyms, initialisms, elliptical versions of the full form, orthographic variants, regional variants, archaic variants, organisation-specific variants.

In some terminological resources a main term (PREFERRED TERM) is specified, following a prescriptive approach; others just list the synonyms and variants without identifying a main term (descriptive approach). The main term can be the most frequently used variant, the term used in the most authoritative source according to the hierarchy of sources or the term discussed and decided upon by a standardisation committee.

Like any other special language, legal language has different registers. There might be several synonyms and variants designating the same concept. Standardisation-oriented prescriptive terminology work will generally reduce these to a minimum, while descriptive terminology work will consider them equally.

Terms referring to the same concept in the same natural language, but belonging to different legal systems (e. g. a German language legal term used both in Germany and Austria) cannot be considered synonyms or variants. In legal terminology work they are considered equivalents.

In legal/administrative terminology projects which consider different legal systems, information on the legal system each term belongs to is essential. It is particularly important to distinguish clearly between terms in the same language that pertain to different legal systems and describe the same or very similar concepts (e. g. using a specific data category).

Proper names

Proper names designate a unique human being or object, e. g. an institution. There might be variants also for this type of terms, typically an acronym for the name of an organisation. In case of very long full names, their acronyms or initialisms are often much more widely used and known than the full name. Out of context these short forms are not always easy to relate to the full form, as the number of homographs can be quite high (e. g. MA for Master of Arts, Massachusetts, Military Academy, Metropolitan area). Very often proper nouns are not translated, but rather paraphrased or explained, if necessary. As a consequence, multilingual terminological databases usually contain only official designations in the target language(s).

Neologisms and translation proposals

If no equivalent can be found in a specific language (i. e. if there is a terminological gap), it might be necessary to propose a new translation, thus coining a NEOLOGISM. These might be discussed with and validated by native speakers (e. g. terminologists

or language experts), as neologisms should be created according to the rules of the relevant language, and also by domain experts, as they should fit into the terminology commonly used in the relevant domain. When a standardisation committee exists, it is usually part of their tasks to officially validate or propose neologisms. These might consist in new word combinations and collocations or in previously entirely non-existent words.

When terminology work in a specific domain or language calls for a regular creation of neologisms, a specific set of rules for term formation should be drafted. These rules may be derived from existing generic rules, such as those laid down in international and national standards (e. g. ISO 704:2009, ÖNORM A 2704:1990) and should take into account aspects such as transparency, correctness and related concepts.

Contexts

CONTEXTS provide information about the concept and the use of the term in texts. In their second function they tend to be more important for translators/interpreters than, for example, for domain experts. However, when no definition is available, contexts can be useful to explain the concept designated by the term (DEFINING or EXPLANATORY CONTEXTS). A context also indirectly provides further information (e. g. collocations, phraseology, language register) which might be important for understanding the appropriateness of the term in a given communicative setting or for selecting the correct equivalent.

Notes

The NOTE field may contain anything the terminologist deems necessary to specify on a certain term. Different note fields can be defined, for example, a note field for geographical usage (e. g. Spanish in Spain or South America) or organisational usage (e. g. European Commission, European Parliament, UN), a transfer comment providing information on the degree of equivalence between terms in a source and target language, etc.

To facilitate data exchange with other organisations or to merge terminological resources owned by different organisations it is essential to keep information well or-

ganised in distinct data categories. This is particularly important for notes (e. g. information on status of standardisation, geographical usage, degree of EQUIVALENCE, language register), that should be entered in separate fields. The higher the granularity of data in note fields (as in terminological databases in general), the better.

Sources

Source information is necessary for terms, definitions, contexts, some types of note. End users, e. g. translators, benefit if the source contains a date, which might give them some indication on the up-datedness of information. However, a recent source is not necessarily an indication of maximum reliability in legal terminology work, as some fundamental sources might date back several decades.

It is advisable to write and use an input manual to ensure a consistent way of citing the many different types of sources.

Legal sources should be cited according to the standard rules defined by the community of experts of the legal system(s) concerned.

3.7. Revision and quality assurance

The criteria for quality check and revision as well as the people responsible for these tasks within the terminology workflow should be decided well before starting work. It is a good idea to allow for some degree of flexibility in the sequences of tasks for revision and quality check, as the roles involved, especially external domain experts, might not always be available at short notice.

Linguistic revision

- revision by native speakers

A native speaker (e. g. a language expert or terminologist) can assess whether a term fits into a certain context and sounds “natural” in the target language.

- spelling, typos, etc.

The spelling must be correct (according to a given source, e. g. a certain dictionary, a certain language variety).

Formal revision

TERMINOLOGICAL ENTRIES should meet all the requirements specified in the terminology style guide or the input manual. The following table lists some of the standard checks that might be performed during quality assurance, but they obviously depend on various factors, e. g. the structure of the terminological database and the style guide.

completeness	• Are all compulsory/necessary data fields filled in? • Does the terminological entry contain a DEFINITION, a CONTEXT (and sources for both)? • If there are several TERMS for one CONCEPT in one language (and no PREFERRED TERM), is there a usage NOTE that specifies the legal system/text type/organisation, etc. in which the term is used?
language attribution	• Does the term belong to the language specified in the entry field?
grammar	• Is the grammar information in the relevant data category correct? • Are the definitions, contexts, notes and sources grammatically correct?
definition	• Is the definition formulated correctly, is it too concise or too long (e. g. according to a terminology style guide/input manual)?
context	• Is the term contained in the context? • Does the context belong to the correct DOMAIN? • Does the context contain an exemplary sentence? • Is it possible to shorten the context without losing important information? • If text segments are left out, are the missing segments marked? • Have references to parts of the text that are not quoted in the context been made explicit, if relevant, or left out, if not relevant?
source quotations	• Are the sources cited according to predefined rules? • If the TERMINOLOGICAL RESOURCE links to a bibliographical database, does the hyperlink work? • If the source is a web document, is the date of consultation clearly indicated?
cross-references	• Do hyperlinks to related terminological entries work?

Content revision

Content revision is ideally carried out by domain experts. If they have the necessary language competences and experience in legal comparison, they can also assess the degree of EQUIVALENCE between terms.

Checklists for domain experts

It is advisable to guide revision along specific lines. Domain experts might, for example, be asked to check the following aspects:

- Is the terminological entry filed under the correct domain?
- Does the term designate the concept treated?
- Is the position of the term in the CONCEPT SYSTEM correct?
- Is the definition correct? Is it focused on the defined term? Does the definition describe all relevant characteristics?
- Does the context belong to the correct domain?
- Do all SYNONYMS/VARIANTS designate the same concept?
- Can the terms in the source and target language be considered EQUIVALENTS? What is the degree of equivalence?

Revision and quality check are best guided by dedicated guidelines and checklists prepared by the terminologists.

3.8. Maintenance

In the present Guidelines, maintenance is a set of proactive activities which are designed to keep a TERMINOLOGICAL RESOURCE serving its purpose. There are several tasks that can be performed in order to maintain terminological resources, such as improving TERMINOLOGICAL ENTRIES, reorganising them, locating and deleting duplicate terms or terms that do not belong to the domain treated, locating and completing incomplete terminological entries, merging terminological entries, performing global changes as well as reorganising and backing up terminological resources.

When maintaining a terminological resource, the following has to be considered:

scope	• minor issue, single terminological entry (can be solved by manual changes) • recurrent issue, several terminological entries (can be solved by manual changes or batch changes)
motivation	• language reforms (e. g. spelling reforms) • legal novelties (e. g. the Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community) • revision of standardisation decisions • ...
frequency	• daily • periodically (e. g. once a month), • product-cycle dependent (e. g. after a completed stage in the production)
manner	• manually • (semi-)automatically

The maintenance of a terminological database or collection should be performed regularly. Dedicated tools may speed up or perform some of the processes automatically.

3.9. Standardisation

This section gives an overview of the activities commonly carried out in terminology standardisation, its purpose and the actors involved. Standardisation is a complex process that is best carried out involving terminologists, domain experts and language experts (who are particularly important when dealing with minority languages) in close collaboration and regular interaction. However, not in all situations is it possible or even desirable to create an official standardisation committee and one or more groups of domain experts. What we describe here is the ideal situation and full workflow which can be considered good practice when standardisation is bound to affect several (sub)domains, is targeted at different types of end users, has official (legal) value and is carried out over a longer period.

Standardisation is a complex process that is best carried out involving terminologists, domain experts and language experts in close collaboration and regular interaction.

Definition and purpose

Standardisation consists in the official validation of single concepts or entire CONCEPT SYSTEMS with the corresponding DESIGNATIONS[8].

It aims to achieve the following:

- precision and consistency in terminology
- avoiding competing designations for the same CONCEPT
- facilitating communication at all levels

Standardisation is a complex process requiring careful consideration of many aspects before starting work[9], namely:

- purpose and objective of standardisation
- users and user needs
- language policies applied
- socio-linguistic factors (e. g. local/regional/national peculiarities, traditions, cultural and ethical issues)
- linguistic criteria (e. g. derivation, morphology)
- availability of competent standardisers
- dissemination strategies

Scenario for terminology standardisation

Terminology standardisation takes place at international, national, regional, local and company/institution level for different reasons. Standardisation might be triggered by external needs, management decisions (top-down) or asked for by the users (bottom-up), e. g.:

- an organisation needs to ensure consistent communication and, as a consequence, a clear and coherent corporate identity, by consolidating its terminological databases or other TERMINOLOGICAL RESOURCES already in use
- a language minority sees its right to use their language in public bodies officially recognised and, as a consequence, faces the challenge of creating a new and consistent body of legal/administrative terminology

8 DIN 2342:2011, clause 7.3
9 cf. Cabré 1998:245

- terminology users file specific requests asking for clear terminological solutions
  - in-house translators voice their current and future terminological needs during regular meetings held within the organisation
  - terminologists regularly assess which issues will be put up for discussion in the future (e. g. which legislation is likely to be passed), which DOMAINS may be particularly relevant for the organisation or the public at large, etc. so as to determine which domains need to be formally validated
  - standardisation requests are collected from staff members, customers, the general public, etc.

Actors involved in standardisation

The following actors are involved in the process of standardisation:

- terminologists
- domain experts
- language experts

These actors may form

- standardisation subcommittees, i. e. technical committees of domain experts with competence in a specific subject
- standardisation committees, which are usually composed of language experts (especially when dealing with minority languages), terminologists (or translators, if no terminologists are available) and domain experts

When the standardisation process aims at validating 1-to-1 equivalences between two or more languages, (passive) knowledge of more than one language is also usually required from domain experts.

All these actors might be involved at different levels and in different degrees according to the activities needed, e. g. the languages considered, the complexity of the domain, the purpose of standardisation. When standardisation operates within a specific legal framework, the public administration and political decision-makers are often involved at some stage of the process, too.

The standardisation workflow

Terminology standardisation consists in a set of operations:

Preliminary work encompasses a series of activities, from needs analysis to the elaboration of TERMINOLOGICAL ENTRIES, that are part of any terminological workflow, irrespective of its main descriptive or prescriptive purpose. However, each of these activities will be strongly directed by its final aim. When TERMINOLOGY WORK is standardisation-oriented and follows a prescriptive approach, standardisers and/or domain experts tend to be more strongly involved in all steps of the workflow. They can influence it from the very beginning, starting from needs analysis, which they can anticipate. They might direct the selection of sources to be used as references for terminology work in documentation, set the rules for TERM EXTRACTION and selection as well as contribute more directly to the elaboration of concept systems and terminological entries. In this way the material to be analysed by the standardisation subcommittees and committees will be more focused than the material produced in a purely descriptive workflow. For example, the terminological entries might contain less SYNONYMS and VARIANTS than those actually used in the community of experts, as the aim of standardisation is to reduce terminological variation. As a consequence, during terminology elaboration greater attention is often given to official and authoritative sources of terminology. Also, DEFINITIONS might be drafted according to specific rules and dedicated NOTES might be added to the terminological entries to support and guide the standardisation process, just to name a few more possible examples.

Revision, validation and dissemination also correspond to the activities performed in a descriptive workflow. However, their importance, consequences, focus and the roles involved are particularly targeted to standardisation. Especially for revision and validation it is essential to define specific working criteria and quality requirements, both to ensure that the actors involved work along similar lines and also to guarantee consistency and coherence during the entire standardisation process. These working criteria and requirements should be commonly discussed and decided among terminologists, domain experts and language experts.

Preliminary work for standardisation

This phase represents the basis for the entire standardisation process: purposes, user needs, domain(s) to be standardised, language(s) to be considered, working methods, procedures and actors must be defined at this stage. The best results are achieved when terminologists, domain experts and language experts (especially in case of minority languages) decide all these aspects in close cooperation.

After having defined a detailed work plan and schedule, preliminary work comprises the following steps, as a subset of activities usually comprised in the activities described in the sections from 3.3 "Documentation" to 3.6 "Elaboration of terminological entries":

- collecting relevant documentation (in one or more languages)
- extracting and selecting the main concepts to be treated, together with the designations that describe them (this is usually done in the source language)
- defining the selected TERMS (i. e., the concepts)
- performing a contrastive analysis with the other languages/legal systems to find EQUIVALENTS
- if necessary, elaborating translation proposals

The best results in standardisation work are achieved when terminologists, domain experts and language experts initially define together purpose, user needs, domain(s) to be standardised, language(s) to be considered, working methods, revision and validation criteria, procedures and actors involved.

Revision of material to be standardised

Revision consists in a further selection and check of the material elaborated during preliminary work (i. e., usually fully fledged terminological entries). This step is carried out mainly by domain experts (e. g. by a standardisation subcommittee) in order to finalise the material to be submitted for standardisation. They check the terminological entries for correctness, appropriateness, established use and desired use. In particular, they are asked to:

- review the definitions
- select the PREFERRED TERM among different competing designations
- reduce the number of synonyms

- reduce the number of homonyms
- revise translation proposals or formulate new ones, if necessary

Validation of terms and equivalents

Standardisers or standardisation committees check the work done by the subcommittees. Their tasks consist in:

- discussing possible doubts or issues raised by the subcommittees
- analysing terms recommended by the subcommittees (i. e. the preferred terms)
- monitoring the consistency of standardised terms with earlier decisions
- reviewing some decisions taken by the subcommittees (e. g. if they clash with the common predefined validation criteria)
- confirming the work done by the subcommittees
- validating translation proposals
- validating 1-to-1 equivalences between terms of different languages/legal systems

It is important to foresee the possibility of re-discussing decisions taken in the past when a social, legislative, cultural change, etc. calls for a revision and new standardisation.

According to the international standard ISO 704:2009 (see chapter 8 "Relevant international standards"), decisions taken by standardisation committees should be stored in terminological resources as "admitted terms" or "deprecated terms" to inform end users on which terms should and should not be employed. Not all databases use these ISO labels. However, standardisation decisions should always be clearly marked in some way as the preferred option.

Dissemination of standardisation decisions

Dissemination of standardised terminology can occur through various channels depending on the official/institutional status of the standardisation committee. Official decisions can be published and made therefore accessible to the public, e. g.

- in decrees, laws and other normative texts
- in Official Journals/Gazettes
- in (online) terminological resources
- in minutes (e. g. of standardisation committee meetings)

- in webpages (of the institution/company)
- in dedicated publications (e. g. dictionaries)
- in newspapers, radio and TV broadcasts, etc.

Dissemination is one of the most important steps in standardisation, but often also its weakest point. When planning standardisation activities it is essential to pay great attention to this step in the workflow.

Working procedure of standardisation committees and subcommittees

Standardisation committees and subcommittees usually take decisions at physical meetings. However, depending on the size of the domain treated, physical meetings can slow down the procedure, as discussion can lose focus or become quite controversial on some issues. These meetings are absolutely necessary for optimising work, discussing and exchanging opinions. However, it is advisable to limit the physical meetings to those necessary for discussing particularly difficult or delicate issues only, while most discussion and exchange of opinions can take place before the actual meeting (e. g. in a dedicated online forum or exchange platform, in group mailings) so as to validate terminology that is not considered problematic via written procedure. This is a practical solution to speed up a complex process and to avoid unnecessary delays.

Practical advice

To achieve the best results, terminology standardisation should:

- be based on preliminary work (preparatory terminology work)
- involve domain experts
- foresee subcommittees for each domain to be standardised
- foresee a standardisation committee
- keep trace of the standardisation criteria and share them with the terminologists
- periodically review the decisions taken and, in case, re-discuss them
- keep trace of decisions and possibly also of discussions and motivations

- include dissemination of results, which should be made accessible to the relevant target groups

Terminologists involved in preliminary work should also be available (and permitted) to assist in the entire standardisation process, thus guiding the domain experts and the standardisers.

3.10. Dissemination

Terminology work can be made available via different types of support. Typically, terminology is published in

- public terminological resources (e. g. online freely available terminological databases)
- internal terminological resources (e. g. terminological databases on a company intranet)
- dictionaries (paper or online dictionaries)
- thematic glossaries and lists of terms

Terminological products on paper, such as dictionaries and glossaries, are still being published, but they have a few major drawbacks. Due to the limitations in space they might not contain the same amount of data as an electronic support would. Information may have to be selected on the basis of the purpose and target group of the publication. Also cross references to other terms are not as easily handled as in electronic databases. In addition, paper publications quickly become outdated. As a consequence, online tools that can be updated regularly or even in real time are generally preferable, at least for translation purposes.

Often there are two versions or parts of a given terminological resource, one which is available for the intended end users (e. g. the general public) and one containing work in progress that is accessible to a restricted number of people (e. g. the terminologists, in-house translators). The restricted version might contain more data (recent entries) or more detailed data, for example, internal comments.

Terminological data is particularly useful when it can be accessed directly through other tools, e. g. computer assisted translation (CAT) tools or quality assurance (QA) tools, so that it can be immediately applied during text production.

In the last decades some terminological resources that were previously available only to a limited number of users have been made available to the general public. This shows that (public) data owners have recognised the importance of disseminating their work and collecting external input, thus maximising the impact and results of their work.

Other initiatives such as terminology newsletters, term-of-the day blogs, terminology quizzes and similar initiatives represent good strategies to remind all possible stakeholders of the existence of terminological data, its purpose and usefulness.

Radio and TV broadcasts as well as newspaper articles and regular columns also support the dissemination of terminology, especially in minority language environments.

For the publication of standardisation results see “Dissemination of standardisation decisions” under section 3.9 “Standardisation”.

Publication and dissemination of terminological data is a crucial step in making sure the product reaches the intended end users. Notable efforts should be put in publishing data so as to make sure that terminology actually serves the intended purpose.

4. Roles

Contrary to common belief, TERMINOLOGY WORK is best performed in a team of people with diverse linguistic, professional and technical attitudes and competences. Discussion, exchange of opinions, information and data are an important factor in attaining high quality terminology as well as meeting quantitative demands.

This section gives an overview of the main roles involved in terminology workflows as well as their activities and competences. Of course, not all organisations employ the same roles. Also, while large organisations may include a number of different roles, in smaller organisations terminologists take over several roles at one time. Boundaries are not necessarily clear-cut and depend on personal skills and aptitudes of staff. Therefore, the following analysis groups the various roles by means of clusters.

The following list of activities is exemplary and considers the most common tasks and processes. However, terminology work takes place in diverse situations and with many different objectives so that it becomes difficult to map every single possible task that terminologists are called to perform.

Terminology work is best performed in a team of people with diverse linguistic, professional and technical aptitudes and competences. Discussion, exchange of opinions, information and (terminological) data are an important factor in producing high-quality terminology as well as meeting quantitative demands.

4.1. Staff with terminology-related expertise

- trainee
- terminologist
- senior terminologist
- translator-terminologist
- quality controller
- ...

Who are they?

Staff with terminology-related expertise are familiar with terminology theory and practical terminology work. They are responsible for the research and documentation of DESIGNATIONS used in one or more specific DOMAINS. This is done in one or more languages. The results are consistent TERMINOLOGICAL RESOURCES containing TERMS and other concept-related or term-related information.

Large terminology units may foresee different roles, according to their degree of experience, e. g. trainee, terminologist, senior terminologist.

Trainees contribute to the current work and at the same time learn the practical and theoretical aspects of TERMINOLOGY WORK in a specific domain. Experienced terminologists act as tutors.

Terminologists often discuss, revise and validate each other's work, i. e. TERMINOLOGICAL ENTRIES are passed on to colleagues who can double-check the content, approve parts of the terminological entries as native speakers (native-speaker principle) and ensure formal completeness and correctness of the entries. These tasks may be performed especially by **senior terminologists**. Formal checks may also be run by dedicated **quality controllers** who then give feedback to the other terminologists.

In several organisations it is the translators who do (part of) the terminology work. If translators are strongly involved in terminology work they act as **translator-terminologists**. Some organisations foresee regular secondments of translators to terminology units. In that case, the permanent terminologists direct and coordinate the work of these "rotating terminologists".

What do they do?

Staff with terminology-related expertise may[10]

- study the terms/texts/domains to be processed terminologically
- delimit and subdivide the domain to be processed terminologically
- select reference material in one or more languages and assess its reliability and relevance
- consult written sources (handbooks, laws, TEXT CORPORA, etc.) or domain experts to collect information on a specific domain/term

10 Cf. also KÜDES 2002 and RaDT 2004

- collect, examine and select the terminology of a domain in one or more languages
- create (domain-related) CONCEPT SYSTEMS in one or more languages and for one or more legal systems
- compile and update fully fledged terminological entries (with DEFINITIONS, CONTEXTS, VARIANTS/SYNONYMS, NOTES, phraseology, etc.) in one or more languages
- propose definitions
- compile lists of terms in one or more languages
- find EQUIVALENTS in one or more target languages/legal systems (e. g. through terminological comparison or micro-comparison)
- propose/create new terms, product names and other relevant designations
- make available terminological resources in one or more languages/legal systems
- clean and update terminological resources
- consolidate terminological resources
- use specific software such as term extraction tools, terminology management systems, etc. (see chapter 5 “Tools”)
- cooperate in the planning, data modelling and evaluation of terminological databases
- provide terminological support and solve terminological issues for all end users envisaged
- edit or proofread texts from a terminological point of view in one or more languages
- provide preliminary work for standardisation (usually: complete terminological entries)
- assist in the decision-making process during standardisation
- exchange information with all roles involved in the terminology workflow (colleagues, translators/interpreters, domain experts, terminology managers, users, IT staff, etc.)
- determine, guide and implement the terminology policy of an organisation
- regularly assess the quality of terminological data and give feedback
- train new staff members and act as a tutor for trainees (experienced terminologists)
- …

Workflow steps they are involved in

needs analysis	• collect expressions of need from all types of users • anticipate future needs (proactive terminology work) • answer specific terminological issues (terminology helpdesk) • receive indications on texts/domains to be processed terminologically (AD-HOC, SYSTEMATIC/domain-specific or text-based TERMINOLOGY WORK)
documentation	• retrieve and select reference material in the source and target language • consult written sources or domain experts to collect information on a specific domain/term
term extraction	• extract terms from reference material (semi-)automatically or manually
term selection	• select terms from lists of extracted terms
elaboration of terminological entries	• compile and update terminological entries (terms, definitions, synonyms/variants, context, notes, phraseology, etc.) • create concept systems • propose definitions where not available • find equivalents in other languages/legal systems (i. e. through terminological comparison or micro-comparison) • spot TERMINOLOGICAL GAPS • suggest translation proposals • regularly consult with other team members • propose/create new terms, product names, etc.
revision & quality check	• revise linguistically (native speakers) • revise according to formal requirements (act as a quality controller) • clean and consolidate terminological collections and databases
standardisation	• prepare input material for standardisation process • assist standardisers
dissemination	• provide terminological support for all end users • edit or proof-read texts from a terminological point of view • implement the terminology policy of an organisation • write newsletters, term-of-the day blogs and similar initiatives

Terminologists are the central node of terminology work and keep close contact with all other roles involved in the terminology workflow collecting needs, information and feedback. They need to be successful liaison officers, as they constantly cooperate with specialists, language practitioners and information scientists. In many organisations they also work in close contact with marketing experts, IT experts and information professionals. This underlines how constant cooperation and communication are crucial for successful terminology work.

As far as the cooperation with translators/interpreters is concerned, it is advisable to keep the roles of the terminologist and of the language mediator separate, if possi-

ble. Nevertheless, they should live in a sort of "mutual symbiosis"[11] to obtain the best possible results both in terminology work and in translation.

Terminologists are the central node of terminology work. They keep close contact with all other roles involved in the terminology workflow collecting needs, information and feedback. They therefore need to be successful liaison officers to manage constant cooperation, information exchange and communication.

4.2. Staff with management-related expertise

- coordinator of language-specific terminology section
- coordinator of terminology unit
- coordinator of terminology projects
- ...

Who are they?

Staff with management-related expertise are familiar with TERMINOLOGY WORK (e. g. they might be experienced terminologists) and have specific project management skills (e. g. acquisition, planning, managing processes, roles and activities). They are good at coordinating people, departments and organisations. They liaise with top managers and decision-makers within a company/organisation, with customers and end users. Terminology managers are in charge of terminology projects, terminology units or language units (e. g. they manage the terminology work of an entire translation unit). Like all other managers, they manage human, financial and other resources, solve problems and promote the work of their staff.

11 http://www.isabellablum.it/assets/files/Editoriale%20%202012.pdf (last access on 7 February 2013)

What do they do?

Staff with management-related expertise may

- acquire, propose or sell terminology projects
- manage terminology projects (e. g. by defining the project scope, schedule, human and financial resources, by doing progress, cost and deadline controlling, by assigning tasks)
- coordinate a team of terminologists, translator-terminologists or various terminology/language units
- liaise with customers, top managers and decision-makers within a company/organisation
- coordinate all the roles and instances involved in terminology work (e. g. trainees, terminologists, domain experts, IT staff, standardisers, different units within an organisation, different cooperating organisations)
- cooperate in the planning, data modelling and evaluation of TERMINOLOGICAL RESOURCES
- coordinate terminological data exchange (e. g. import/export of data), manage copyright issues, etc.)
- develop the terminology policy of an organisation
- assess the quality of terminology work
- coordinate the acquisition and processing of relevant documentation for terminology work
- ...

Workflow steps they are involved in

needs analysis	• coordinate and manage all relevant tasks and activities • acquire terminology projects according to current or future needs expressed or identified
documentation	• coordinate and manage all relevant tasks and activities • solve possible copyright issues related to documentation or TEXT CORPUS compilation
term extraction	• coordinate and manage all relevant tasks and activities • cooperate in the selection and evaluation of term extraction tools
term selection	• coordinate and manage all relevant tasks and activities

elaboration of terminological entries	• coordinate and manage all relevant tasks and activities • cooperate in the planning, data modelling and evaluation of terminological databases • coordinate staff members, different groups, departments and organisations • coordinate data exchange
revision & quality check	• coordinate and manage all relevant tasks and activities • assess the quality of terminology work • coordinate linguistic, content and formal revision
standardisation	• coordinate and manage all relevant tasks and activities • develop the terminology policy of an organisation/company
dissemination	• coordinate and manage all relevant tasks and activities • liaise with end users and customers • solve possible copyright issues related to data publication online and in print, data exchange, etc.

Staff with management-related expertise should have strong communication and team working skills, know the relevant standards and legal issues as well as possess the standard theoretical and practical skills needed for high-quality terminology work.

4.3. Staff with domain-related expertise

- domain expert
- lawyer-linguist
- ...

Who are they?

Domain experts are experts in one or more specific subjects that are being treated. They act mainly as **consultants** for terminologists. Often they are **revisers**. In that case, they should be guided by lists of items to be checked, previously prepared by the terminologists and briefly introduced to the objective and target users of TERMINOLOGY WORK. They can be part of standardisation subcommittees or committees, i. e. **standardisers**. More rarely they work as **terminologists** proper.

Sometimes domain experts can have good competences in more than one language under examination or can also be language experts, such as in the case of **law-**

yer-linguists, also called jurilinguists: *"A jurilinguist provides advice related to the terminology, syntax, phraseology, organisation of ideas and style that are appropriate to legal language and, specifically, to legislative language and to the subjects dealt with, and also, within the context of bilingual co-drafted Bills and regulations, comparison services to ensure equivalenc[e] of the [different language] versions*[12]*."*

What do they do?

Staff with domain-related expertise may[13]

- help finding or select source material for terminology extraction and terminology work
- clean lists of extracted terminology, thus defining which TERMS should be treated within the selected DOMAIN(S) or subdomain(s)
- offer information when consulted by terminologists on specific matters
- create DEFINITIONS, esp. in their native language
- revise terms, definitions, SYNONYMS/VARIANTS, NOTES or fully fledged TERMINOLOGICAL ENTRIES
- be part of standardising bodies
- create, review or validate translation proposals
- ...

Workflow steps they are involved in

needs analysis	• voice formal or informal requests of terminology work
documentation	• refer to or select reference material
term extraction	
term selection	• select terms from lists
elaboration of terminological entries	• consult on content • create definitions • check CONCEPT SYSTEMS • suggest or approve translation proposals
revision & quality check	• revise content

12 Poirer 2009
13 Cf. also KÜDES 2002:46, 66 and RaDT 2013

standardisation	• select terms to be standardised • suggest standardisation proposals • study, discuss and integrate/modify terminological material (e. g. standardisation subcommittees) • validate standardised terms • validate EQUIVALENTS
dissemination	• apply standardisation decisions

Domain experts are often involved in the terminology workflow in a purely informal way. They might be personal contacts of the terminologists, both in private or professional life (e. g. people employed in other departments of a large institution), that are often called up or consulted via e-mail for urgent or particularly difficult questions. This is common practice and works quite well, especially in small terminology units. However, a more regular and constant consultation with domain experts is an urgent need and shared desire among terminologists, together with a more formalised way of communicating that might keep track of decisions (e. g. discussion forums).

There is a general difficulty of involving domain experts in terminology work and in finding experts for some languages. This is due to time limits, financial restrictions, limited availability of domain experts in general, their attention to and understanding of terminology work as well as the changing domains treated. It is the task of terminologists to introduce domain experts to terminology work, explaining its aims and benefits. Terminologists should provide domain experts with precise instructions and checklists as to what they are called to do and guide (new) domain experts through the individual processes they are involved in, in order to achieve a smooth and efficient collaboration.

A formalised and smooth terminology workflow should officially involve domain experts in one or more steps and foresee various moments of information exchange and cooperation with terminologists. Terminologists should provide experts with precise instructions and checklists as to what they are called to do and guide (new) domain experts through the individual processes they are involved in, in order to achieve a smooth and efficient collaboration. The general aim should be to establish a solid partnership between terminologists and domain experts that leads to mutual benefits.

4.4. Staff with expertise in information technology (IT staff)

- database administrator
- tool developer
- IT specialist
- ...

Who are they?

Staff with expertise in information technology take care of administering, maintaining and developing tools for TERMINOLOGY WORK and performing certain tasks (see below). They can be **terminologists** with a technological background, **IT specialists, computational linguists, developers,** or have similar profiles.

What do they do?

Staff with technical expertise may[14]

- administer terminological databases (access rights management, data modelling, data maintenance, import/export data, batch updates, etc.)
- support terminologists by creating and maintaining in-house tools, e. g. for TERM EXTRACTION, TEXT CORPUS management, terminology management, terminology publication, workflow assistance (for revision, standardisation, etc.)
- develop company-internal graphical user interfaces (GUIs) for all tool-supported activities, if needed
- help finding, evaluating, installing, fine-tuning, training and adapting existing tools, e. g. for term extraction, text corpus management, terminology management tools, tools for terminology dissemination, workflow-assisting tools (for revision, quality-assurance, standardisation, etc.)
- ...

14 Cf. also DTT 2010:M6-3

Workflow steps they are involved in

needs analysis	• develop or provide tools to collect and store (external) input on terminological needs
documentation	• develop and fine-tune tools to automatically harvest domain-related relevant texts on the web • create domain-specific monolingual or multilingual (aligned) text corpora
term extraction	• develop or fine-tune tools for term extraction • develop or fine-tune tools to automatically exclude terms that are already present in the reference terminological database during term extraction • develop or provide tools for automatic retrieval of translation proposals from a variety of language resources, such as text corpora or translation memories
term selection	• develop or fine-tune tools to automatically remove terms that are already present in the reference terminological database from the lists of CANDIDATE TERMS
elaboration of terminological entries	• import/export of data • batch changes/updates • maintenance of database management system • convert data into desired format (e. g. for import/export, publication)
revision & quality check	• develop tools for (semi-)automatic consistency checking and quality assurance • provide export of specific subsets of terminological data, e. g. for revisers
standardisation	• develop or provide tools that assist in the standardisation workflow (e. g. discussion forums)
dissemination	• develop or provide tools for data publication (e. g. online, on paper) • develop or provide tools for collecting user input and feedback • improve the user-friendliness of terminology dissemination tools (e. g. online version of a TERMINOLOGICAL DATABASE) for end users of terminological data • provide tools for creating statistics on access to published terminological data

Several large institutions have in-house developed systems. This is due to different reasons, either because they started doing terminology work before any commercial tools were sufficiently developed to meet their needs, because the available tools on the market still do not offer the desired flexibility or because the constant support of (internal) IT personnel ensures regular implementation of all necessary updates, amendments and improvements to the data and their structure. Also when commercial products are used, IT support might be necessary to perform imports/exports, batch updates, etc. Simple routine activities (e. g. data export guided by a wizard) can be easily carried out by terminologists that know how to use their terminology man-

agement system well. Other, more complex activities might need the support of experts in computer science or computational linguistics (e. g. creating a macro or a script for converting XML export files into a more readable format for human revision of terminological entries).

The ideal situation for terminology work is a constant support to terminologists from IT staff as well as a regular exchange of information on needs, current IT developments, desired features, user requirements, user feedback, data access statistics, etc. This constant cooperation can optimise several steps of the terminology workflow, from collecting expressions of need to implementing user feedback on published terminological data.

At the current status of tool development, IT support and tools should be involved more often and more regularly in the terminology workflow. The aim is to relieve terminologists from tasks that can be performed (semi-)automatically by tools to an acceptable degree of quality and allow them to focus on other tasks.

The ideal situation for terminology work is a constant support to terminologists from IT staff as well as a regular exchange of information on needs, current IT developments, desired features, user requirements, user feedback, data access statistics. IT support and tools should be involved more often and more regularly in the terminology workflow. The aim is to relieve terminologists from tasks that can be performed (semi-)automatically by tools to an acceptable degree of quality and allow them to focus on other tasks.

4.5. Users of terminology

- translator
- interpreter
- domain expert
- technical drafter, e. g. legal drafter
- ...
- general public

Who are they?

Users are people who consult terminological collections for their own purposes. Typical users can be **translators** and **interpreters**, **domain experts** or **technical drafters** (e. g. **legal drafters**) who are looking for information to understand a CONCEPT better, to find EQUIVALENTS, to retrieve usage information as well as standardisation information. They might or might not be employed in the same organisation or in other cooperating organisations. When the data is available to the **public**, the users of terminology can be a large community of people with diverse profiles, activities, backgrounds and objectives.

What do they do?

Users of terminology may

- voice expressions of need (e. g. suggest TERMS, DOMAINS, texts to be processed)
- give feedback on terminological data (e. g. spot minor mistakes or inconsistencies, suggest additions where information is missing)
- disseminate (standardised) terminology
- ...

Workflow steps they are involved in

needs analysis	• indicate domains/texts to be terminologically processed • voice specific terminological needs
documentation	• refer to relevant sources
term extraction	
term selection	
elaboration of terminological entries	
revision & quality check	
standardisation	
dissemination	• give feedback on published terminological data • use and disseminate (standardised) terminology

In AD-HOC TERMINOLOGY WORK, terminologists often solve single problems put forward by translators/interpreters. It is a typical task of terminology units and serves to solve short-term issues by carrying out dedicated research on behalf of translators/interpreters. In proactive terminology work, terminologists consult translators/interpreters, domain experts or institutional end users to anticipate which terms, domains, languages, etc. will need to be processed in the near future, thus trying to cater in advance for future necessities. This is a welcome collaboration between terminology users and terminology providers and should be encouraged, as it optimises the usefulness of TERMINOLOGY WORK and, by being strongly user-oriented, fully satisfies user needs.

A constant interaction and close collaboration between terminology users (e. g. translators) and terminology providers (i. e. terminologists) should be encouraged, as it optimises the usefulness of terminology work and, by being strongly user-oriented, anticipates their needs and fully satisfies them.

5. Tools

In general, TERMINOLOGY WORK is done on the computer. To this end, different types of tools may be used. Roughly, these tools can be divided into two groups. The first group consists of software that is not specifically designed for terminology work, but can be used for such purposes in some ways. The second group encompasses dedicated software that is tailor-made for some tasks in the terminology workflow.

Depending on the purpose and target group of terminology work, a decision has to be made on the appropriate tools. While it might be sufficient to use standard word processors, spreadsheet or database software for creating terminology lists or simple glossaries, more complex terminology work activities require tailor-made tools. These are discussed below.

5.1. Term extraction software

There are dedicated tools that are used to extract potential terms (CANDIDATE TERMS) from texts or TEXT CORPORA. After extraction, terminologists have to validate the candidate terms and decide whether they serve the intended purpose. A wide variety of both commercial and open-source tools for term extraction is available. All of them use one or more of the methods described in section 3.4 “Term extraction”.

5.2. Terminology management systems

Terminology management systems are the most prominent type of tool for terminology work. They serve as a one-stop shop for collecting, processing and publishing terminology. Usually, they contain terminological databases that terminology users may consult, while terminologists have the appropriate access rights to create, add, modify and delete content in such resources. Some are stand-alone systems, i. e. they do not require additional support files or programs to run, but they may also come in combination with translation memory tools. Other terminology management systems are directly integrated in translation memory tools and cannot be used separately.

5.3. Terminology checkers

When language professionals (e. g. technical writers) produce texts it is often necessary to monitor the use of correct terminology. This can be done by using tailor-made software that compares the text being written with pre-defined lists of TERMS. In the case of inconsistencies or incorrect terms, the software gives a warning to the author and suggests the right terms instead.

5.4. Tools for visualising terminology

In terminology work, it might be necessary to visualise the relations between the various CONCEPTS (see paragraph on "Concept systems" in section 3.6 "Elaboration of terminological entries"). To this end, terminologists may use dedicated software that enables them to enrich their text-based TERMINOLOGICAL RESOURCES by adding concept diagrams (non-formalised graphic representations) or concept models (formalised graphic representations). Tools for visualising terminology are available both as stand-alone software and as part and parcel of terminology management.

The decision on whether to use any tools or the decision for a specific tool depends on specific needs, e. g. the type of terminology work, the language(s) considered, the types of text to be processed, etc. It is essential that any tools are integrated into existing terminology workflows smoothly, efficiently and at the right moment so as optimise their support to terminology work.

6. Workflows – First aid kit

This section is a collection of possible scenarios that terminologists might face. It contains the necessary information to provide immediate guidance and supporting decision-making in a terminology workflow "emergency". Each scenario is based on the assumption that all activities are always discussed and decided upon in a team in order to guarantee consistency and coherence during the entire workflow. Further information on typical terminology issues and the workflows that can be triggered to solve them can be found in LISE deliverable D 3.2 "Report Workflow Adaptation for LISE", which can be downloaded from the LISE project website: http://www.lise-termservices.eu/downloads. The tables in this section should be read horizontally.

6.1. Data clean-up (1)

There are three main scenarios for data clean-up:

- spell checking (e. g. typos, absence of diacritical marks, etc.)
- data consistency (e. g. a language has undergone an official spelling reform)
- grammar (e. g. wrong grammar information)
- ...

Depending on time, financial resources and staff available, the clean-up of terminological data can be performed in one of the following ways:

Methods	Advantages	Disadvantages
Slowly change TERMINOLOGICAL ENTRIES that contain the data to be cleaned up as they happen to be worked on	Limited additional efforts concerning person/months and financial resources	Long-term activity that risks being trailed along for months or years depending on the number of terminological entries to be checked Difficult to determine when activity will be completed and no overview of work already done Mix of outdated and updated terminological entries in the terminological database for a possibly endless amount of time that may confuse and mislead end users
Systematically change all terminological entries to be cleaned up manually	Depending on the number of terminological entries, limited additional efforts concerning person/months and financial resources End of activity can be foreseen and planned	Depending on the extent of any relevant spelling reform, notable additional efforts concerning person/months and financial resources Mix of outdated and updated terminological entries in the terminological database for a possibly endless amount of time that may confuse and mislead end users

Methods	Advantages	Disadvantages
Batch change and clean-up of all terminological entries, i. e. the entries to be cleaned up are exported, automatically processed with the help of an ad-hoc available script/program, then imported back	Quick and clean Depending on the number of terminological entries and the availability of scripts/programs, limited additional efforts concerning person/months and financial resources	Depending on the number of terminological entries and on the availability of scripts/programs, notable additional efforts concerning person/months and financial resources Needs qualified staff able to process data (import/export), write and run the script or use the program Purchase/acquisition of program or writing of script

6.2. Data clean-up (2)

Doublettes pose a problem in many terminological resources: they confuse the end users and are not always easy to spot. The process of cleaning up data is usually very much manual human work. Doublettes can be the consequence of:

- manual input and update over many years
- large amount of terminological data to be managed
- terminological database mergers
- overlapping projects
- absence of communication between staff
- ...

Depending on time, financial resources and staff available, the clean-up of terminological data can be performed in one of the following ways:

Methods	Advantages	Disadvantages
Slowly delete or merge doublettes manually, as they happen to be found during routine activities/ checks	Limited additional efforts concerning person/months and financial resources	Long-term activity that risks being trailed along for months/years Difficult to determine when activity will be completed and no overview on work already done Presence of doublettes may confuse end users, thus decreasing the trust into the terminological resource
Systematically delete or merge all doublettes manually, i. e. find and delete or merge all doublettes manually (e. g. with the help of some specific search tool or filter).	Depending on the number of terminological entries, limited additional efforts concerning person/ months and financial resources End of activity can be foreseen and planned	Depending on the number of doublettes, notable additional efforts concerning person/months and financial resources Presence of doublettes may confuse end users, thus decreasing the trust into the terminological resource

Methods	Advantages	Disadvantages
Batch change and delete or merge all doublettes by using a script/program, then import them back	Can be quite clean, depending on amount of terminological data to be detected, directly deleted or merged with other terminological data Depending on the availability of scripts/programs as well as on the amount of terminological data to be deleted or merged with other terminological data, limited efforts in post-processing	Amount of terminological data to be detected, directly deleted or merged with other terminological data Depending on the availability of scripts/programs as well as on the amount of terminological data to be deleted or merged with other terminological data, notable efforts in post-processing Difficult to keep track of what should be deleted, kept, merged Needs qualified staff able to process data (import/export), write and run the script or use the program Purchase/acquisition of program or writing of script

6.3. Data import

Terminological data are usually imported when:

- a terminological database needs to be enriched with a new DOMAIN
- an organisation needs to complete a specific domain
- an organisation needs to exchange data pertaining to a specific domain
- ...

Before importing terminological data from other databases, a set of aspects must be considered:

- **Copyright**: Is it necessary to draft a specific agreement between the parties exchanging the data?
- **Database definition**: How is the source and target terminological data organised? Do the source and target terminological databases share the same structure?
- **Data categories**: Which data categories are there in the source and target terminological database?
- **Exchange formats**: Is the exchange format supported by the target terminological database?

To avoid incompatibility or errors during import, it is necessary that the source and target terminological databases share the same structure and data categories. For example, if one is organised on four levels (CONCEPTS, TERMS, text fields, attribute fields) while the other one is organised on three (concept, term, text fields and/or attribute

fields) serious compatibility issues and errors during import might ensue. Data categories must match as well; if not, they can and should be mapped, e. g. according to ISO 16642:2003. If, for example, one of the two terminological databases contains additional/different data categories, it is advisable to work with an export file. The latter needs to be processed (e. g. by substituting data categories) before it is imported into the target terminological database. Finally, the exchange format supported by both databases should be considered. Receiving exchange files that must be converted into a format that is compatible with the target terminological database is a time-consuming task. Considering and using an exchange format like TBX (TermBase eXchange specified in ISO 30042:2008, see chapter 8 "Relevant international standards") in the first place can greatly facilitate conversion at later stages.

Depending on the purpose of data import, the time, staff and financial resources available, terminological data can be imported in one of the following ways:

Methods	Advantages	Disadvantages
Add the MISSING TERMINOLOGICAL entries manually, i. e. write or copy and paste all information into the terminological database manually	Only way of storing and using data that otherwise might get lost	Depending on the amount of data, notable additional efforts concerning person/months and financial resources Long-term activity that risks being trailed along for months/years. High probability of human input mistakes (typos, omissions, duplication, etc.)
Automatic import of data (modify existing terminological database structure and/or data categories if necessary)	Quick Can be quite clean End of activity can be foreseen and planned Depending on the availability of terminological data in the necessary format, limited efforts concerning person/months and financial resources, esp. in the preparation and cleaning phase	Can be only relatively clean (missing data, duplication, interferences with original data, etc.), depending on amount and compatibility of terminological data to be imported (e. g. due to completely different data categories and database structure, etc.) Depending on the availability of terminological data in the necessary format, notable efforts concerning person/months and financial resources, esp. in the preparation and cleaning phase Needs qualified staff able to process data (import/export), bring it into the desired format and modify terminological database structure, if necessary

6.4. Data merger

Terminological data are usually merged when one or more institutions own separate source TERMINOLOGICAL RESOURCES which need to be put together into only one target terminological database. The same conditions and limitations mentioned in section 6.3 "Data import" apply.

Depending on the purpose of the data merger, the time, staff and financial resources available, terminological data can be merged in one of the following ways:

Methods	Advantages	Disadvantages
Add the TERMINOLOGICAL ENTRIES of one terminological database to the other terminological database manually (after creating of a new "common" terminological database definition); if necessary, copy and paste all information into terminological database manually	Only way of storing and using data that otherwise might get lost	Notable additional efforts concerning person/months and financial resources Long-term activity that risks being trailed along for months/years High probability of human input mistakes (typos, omissions, duplication, etc.) If a new "common" terminological database definition is not created to accommodate all data categories, data might be lost If doublettes are not avoided during input, duplicate and partly diverging terminological entries might confuse and frustrate end users, thus decreasing the trust into the terminological resource; it is then necessary to proceed with data clean-up
Automatic merger of terminological data, creation of a new "common" terminological database definition; if necessary, preparation of data to be merged in common format (preferably TBX); checks for completeness and correctness of import	Quick Can be quite clean, depending on amount and compatibility of terminological data to be merged (e. g. due to completely different data categories and database structure) Depending on the compatibility of terminological data to be merged, limited efforts concerning person/months and financial resources in preparation and checking phase	Can be only relatively clean (missing data, duplication, interferences between data sets, etc.), depending on amount and compatibility of terminological data to be merged (e. g. due to completely different data categories and database structure, etc.) Depending on the compatibility of terminological data to be merged, notable efforts concerning person/months and financial resources in preparation and checking phase If doublettes are not removed, double and partly diverging terminological entries might confuse and frustrate end users Needs qualified staff able to process data (import/export), bring it into the desired format and create a new terminological database definition, if necessary

6.5. Adding new languages

This scenario can be applied to the typical situation of an organisation wishing to add one or more languages to its TERMINOLOGICAL RESOURCE for any reason (e. g. new markets, new projects, new language policy). The scenario is probably more frequent in organisations who do translation-oriented TERMINOLOGY WORK, but might be relevant in other settings as well.

Depending on the purpose of the terminological resource, the time, staff and financial resources available, terminological data in new languages can be added in one of the following ways:

Methods	Advantages	Disadvantages
Slowly add the missing language manually to all TERMINOLOGICAL ENTRIES, as they happen to be worked on, i. e. terminology work to search for equivalents, synonyms and any other information needed (e. g. DEFINITIONS, CONTEXTS, NOTES) in the new language	Finalised terminological entries will be well-researched and as complete as possible	Long-term activity that risks being trailed along for months/years Difficult to determine when terminological data in the new language will be complete and no overview of work already done Notable additional efforts concerning person/months and financial resources in completing the entries The terminological database will contain a mix of entries with and without the new language for a possibly endless amount of time Missing data may frustrate end users Quality of the terminological entries will depend on the quality of terminology work and research
Systematically add the new language to all entries manually, i. e. terminology work to search for equivalents, synonyms and any other information needed (e. g. definitions, contexts, notes) in the new language	Finalised terminological entries will be well-researched and as complete as possible End of activity can be foreseen and planned	Notable additional efforts concerning person/months and financial resources

Methods	Advantages	Disadvantages
Automatic extraction from translation memories and update of all terminological entries by adding the new language(s) manually	Quick and clean Limited initial efforts concerning person/months and financial resources (for extraction) Limited additional efforts concerning person/months and financial resources in completing the entries with missing terminological data	Reduced additional efforts concerning person/months and financial resources in completing the terminological entries Terminological entries will only be completed if data is available in translation memories and/or parallel TEXT CORPORA Quality of terminological entries will partly depend on the quality of the term extraction tool used, of the existing translations (in translation memories and/or parallel text corpora) and of subsequent terminology work and research Needs qualified staff able to use term extraction tools Purchase/acquisition of term extraction tools and/or translation memories

Whenever an automatic or semi-automatic solution is possible or proposed, a human check and post-editing might still be necessary and desirable.

7. Cooperation and communication

7.1. Cooperation in terminology

Cooperation takes place at different levels depending on the roles defined and people involved. TERMINOLOGY WORK is *per se* interdisciplinary and cooperative work. Terminologists, domain and language experts, translators/interpreters and IT staff cooperate to solve or help resolving monolingual or multilingual terminological issues. At a higher level, interdepartmental cooperation, inter-institutional and especially international cooperation are a great challenge for terminology work today. They imply collaboration and information exchange at several points in the workflow and pose issues such as data exchange, data mergers and harmonisation, together with complex copyright issues.

Before starting cooperation in terminology, several aspects should be defined:

- purpose of terminology work
- type(s) of end users and their needs (needs analysis, see section 3.1 "Needs analysis")
- content and scope of terminology work (i. e. domains and subdomains, texts, single TERMS or groups of terms, etc.)
- languages to be considered
- roles and their tasks (e. g. people responsible for collecting information, managing coordination, quality assurance, revision; see chapter 4 "Roles")
- a (permanent) working group that holds regular meetings or periodically exchanges information
- standard workflow to be followed
- specific individuals in charge of specific tasks (e. g. a list of domain experts to be consulted)
- rights and obligations of all people involved (e. g. defining access rights for the terminological database)
- guidelines for cooperation, instructions/checklists for each step of the workflow
- structure of the terminological data, tools to be used for TERM EXTRACTION, terminology management, storage, etc.
- data exchange formats and relevant copyright issues
- dissemination activities

Inter-institutional cooperation

Cooperation between different organisations can be particularly daunting. In view of common terminology work or data exchange it might be useful to

- create a common terminology unit or assign terminologists the coordination of terminology projects (i. e. create a unique contact point for all terminological issues)
- define the institutions/departments/units that contribute to terminology work
- define the responsibilities of all institutions/departments/units involved
- sign a cooperation agreement taking into consideration copyright issues and data ownership (especially for data exchange)
- exchange data (TERMINOLOGICAL RESOURCES such as terminological databases, glossaries, etc.)
- define reasonable deadlines for contributions by participating institutions/departments/units
- create occasions and provide the necessary tools for regular discussion and information exchange
- provide specific training and advertise both the initiative and its results

Legal protection of databases

The legal protection of databases is a complex issue, as different levels of protection operate on the data itself and on the structure. Data ownership and copyright issues might have to be handled differently, according to the types of data and to the countries in which the organisations wishing to exchange data are located. It is not possible to give generally valid and detailed information on these matters. In this section we refer to European copyright law as a general frame, but relevant national legislation will have to be taken into account to solve specific issues. We therefore suggest referring to national experts and to the Guide to terminology agreements published by the International Terminology Network TermNet, which are available online at the following address: http://www.termnet.info/downloads/english/projects/IFAP/17_termtrain2005_sauberer_guide_term_agr.pdf.

Within the European Union, the relevant provisions on the legal protection of databases are set in the Directive 1996/9/EC[15], which introduces a specific protection, i. e. a *sui generis* right, on databases (art. 7 to 11). This specific database right applies to the set of data contained in a database as a whole and does not affect the copyrights that exist on the data itself. It concerns the form, i. e. the structure or architecture of a database, but not its content, thus protecting the precious work of collecting and assembling the data and information.

The *sui generis* rights are attributed to the maker of a database, i. e. to the subject that invested time, work and money to assemble the database. The aim is to protect the economic investment made to obtain, verify or present the contents of the database against extraction and re-utilisation of the whole or of a substantial part of it (art. 7). Database rights apply independently of the creativity and originality of a database. If the database is the result of original and creative work, i. e. if it constitutes the author's own intellectual creation (art. 3), it is additionally protected by copyright. Both copyright and database right provisions can therefore apply to the same data. The maker's investment will be protected by copyright if it is original and creative work as well as by database right, or only by database right if the requirements for copyright are not met.

In addition, a third layer of rights might be applicable to the material contained in the database. Neither of the above mentioned rights of the maker prejudice the rights of the authors who created the content assembled and organised in the database. The maker of the database will therefore need to obtain all necessary authorisations to exploit copyrighted content within the database.

Copyright (author's rights)	**Database right (*sui generis* right)**
Rights are owned by the author.	Rights are owned by the maker.
The author owns the exclusive rights to authorise • reproduction • translation, adaptation • distribution to the public • communication to the public • any use of translations, adaptations and other arrangements of the copyrighted material.	The maker owns the rights to restrict • extraction • re-utilisation of the database.

15 Also Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society contains relevant information.

Copyright (author's rights)	**Database right (*sui generis* right)**
Exceptions apply for • lawful users performing actions necessary for the access to and normal use of the contents of the databases (without authorisation)	Exceptions apply for • extraction and/or re-utilisation of insubstantial parts of the database • public lending
The Member States may provide for further exceptions for • teaching purposes or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose • purposes of public security or an administrative or judicial procedure Additional exceptions might be traditionally authorised under national law.	The Member States may provide for further exceptions for • teaching purposes or scientific research (extraction and/or re-utilisation also of substantial parts of the database), as long as the source is indicated and to the extent justified by the non-commercial purpose • purposes of public security or an administrative or judicial procedure
Rights expire 70 years after the author's death, irrespective of the moment in time when the work was made accessible to the public.	Rights expire 15 years after creation.

Databases are potentially protected by a double level of rights. Before any extraction and/or re-utilisation of their content it is necessary to consider the legal provisions applicable to the specific case, in order to determine the rights and obligations of the users and of the authors/makers respectively.

All organisations that own and elaborate terminological data should regard their data as an important contribution to the intellectual property of mankind and make it available to users on terms and conditions which reflect the nature of the data.[16]

16 Galinski & Goebel 1996:20

Intra-institutional cooperation

Cooperation within the same institution must be well organised, too. One of the typical scenarios for intra-institutional cooperation takes place among translators/interpreters and terminologists:

- translators/interpreters should file requests for terms/glossaries well in advance (whenever possible)
- terminologists perform the necessary searches and manage the entire workflow
- terminologists hand over the results of terminology work to translators/interpreters
- solutions are published/disseminated whenever they are considered possibly useful also in other settings and for future work

Another frequent scenario is the coordination of different language (translation) units within an organisation:

- terminologists collect the terminological needs of the language units well in advance, whenever possible (e. g. find out about upcoming translation projects in the sense of proactive terminology work, see section 3.6 “Elaboration of terminological entries”)
- regular meetings with the language units are held to discuss major issues, upcoming events and translation projects. Such meetings help optimising the workflow, ensure smooth cooperation and help building mutual trust and confidence

7.2. Communication in terminology

Communication might be important both inside a project group, a terminology unit, an organisation as well as with external partners.

It is particularly important to

- raise awareness among all stakeholders on the importance of terminological activity
- provide adequate tools and occasions for information and data exchange (in addition to regular physical meetings and group mailings, discussion forums and dedicated platforms can be used as swift and efficient means of communication)
- make any contribution or data ownership visible (this enhances motivation and identification with the terminological product)

Good practices in communicating terminology work and its results are initiatives such as

- the creation of a dedicated terminology portal collecting glossaries, external links, information on trainings, dedicated tools, news, etc.
- the creation of a common electronic platform for regular exchange, e. g. a discussion forum, wiki-like applications, etc.
- initiatives such as regular terminology newsletters, terms of the month, regular dissemination of NEOLOGISMS (especially in minority languages) in the media, etc.

A desire voiced by many terminologists working in teams and coordinating different roles is a unique platform where terminology can be stored and exchanged but also discussed, edited and validated, thus keeping track of discussions and of the motivations for decisions. This would avoid the use of external means of communication and information exchange (e. g. phone calls, e-mails, circulating spreadsheets and text documents).

8. Relevant international standards

There is a variety of national and international standards that deal with terminology work. At the international level, relevant standards are developed by ISO, the International Organization for Standardization. Its Technical Committee 37 "Terminology and other language and content resources" (ISO TC 37) consists of international experts and is responsible for standardisation related to terminology work. International standards in this field are needed to ensure interoperability of terminological resources, tools and methods. This means that terminological resources should be interchangeable, various tools (see chapter 5 "Tools") should be compatible with each other and best-practice methods should be shared within the expert community of those doing terminology work (terminologists, translators, interpreters, technical writers, content managers, etc.).

While ISO TC 37 has so far published a remarkable range of international standards that cover various aspects and levels of terminology work, the following list contains only those that are the most relevant with regard to these Guidelines.

ISO 1087-1:2000

"Terminology work – Vocabulary – Part 1: Theory and application"

ISO 1087-1 is a terminology standard that provides definitions of all the concepts related to terminology and terminology work. As such, it provides the conceptual framework for all other ISO TC 37 standards on terminology work.

ISO 704:2009

"Terminology work – Principles and methods"

ISO 704 is one of the most fundamental standards. It lays down the theoretical model of terminology and the principles and methods for state-of-the-art terminology work. It describes the nature of objects, concept and designations and gives recommendations for writing definitions, depicting concept relations, etc. This international standard applies to terminology work in any domain, including legal and administrative settings.

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"

The ISO 10241 series deals with terminological entries in standards. While ISO 10241-1:2011 describes general requirements for drafting terminological entries and illustrates this by providing relevant examples, ISO 10241-2:2012 specifies how internationally standardised terminological entries are to be adopted at regional and national levels. The ISO 10241 series is most relevant to section 3.6 "Elaboration of terminological entries" of the present Guidelines.

ISO 860:2007

"Terminology work – Harmonization of concepts and terms"

ISO 860 provides methods and a workflow model for standardising/harmonising concepts, concept systems, definitions and terms. It may be used both in monolingual and multilingual settings. ISO 860 can assist terminologists and domain experts with standardising/harmonising terminologies, as described in section 3.9 "Standardisation" of the present Guidelines.

ISO 15188:2001

"Project management guidelines for terminology standardization"

ISO 15188 offers guidelines for terminology standardisation projects. Divided into two main sections, it covers scenarios both inside and outside the framework of international standardisation. For practical purposes, it contains a workflow diagram and an organisational model as well as several checklists helping those involved in terminology standardisation. Given its purpose and nature, this international standard may be used in combination with ISO 860:2007 (see above). It is most relevant for section 3.9 "Standardisation" of the present Guidelines.

ISO 16642:2003

"Computer applications in terminology – Terminological markup framework"

ISO 16642 is a fundamental standard describing an application-independent model for creating and structuring terminological resources. The main parts of this model serve as the basis for many terminological resources.

ISO 30042:2008

"Systems to manage terminology, knowledge, and content – TermBase eXchange (TBX)"

ISO 30042 contains the specification of TermBase eXchange (TBX), the most universal format for interchanging terminological data. It does so by describing a core structure and the relevant data categories needed for creating and sharing terminological resources. Use of the TBX format is essential for anyone involved in collaborative terminology work.

ISO 23185:2009

"Assessment and benchmarking of terminological resources – General concepts, principles and requirements"

ISO 23185 provides a model and methods for assessing terminological sources. One crucial aspect of assessment is the terminological data as such, while criteria related to data input, data output and data management are of great importance as well. ISO 23185 is most relevant at the outset of terminology work activities (see section 3.3 "Documentation").

ISO 29383:2010

"Terminology policies – Development and implementation"

ISO 29383 provides decision-makers with methods for developing and implementing a terminology planning strategy for their organisations. This international standard is most relevant for standardisation in terminology work (section 3.9 "Standardisation").

ISO 26162:2012

"Systems to manage terminology, knowledge and content – Design, implementation and maintenance of terminology management systems"

ISO 26162 specifies criteria for designing, implementing and maintaining terminology management systems (see section 5.2 "Terminology management systems"). It does so by guiding its target group (mainly terminologists and software developers) through a series of decisions that have to be taken on whether and how to manage terminology with dedicated tools. In various respects, ISO 26162 may be used as an instrument to implement ISO 16642:2003 in terminological practice.

ISO 12616:2002

“Translation-oriented terminography”

ISO 12616 contains guidelines for terminology products aimed at professional translators. It describes the principles and methods that apply to translation-oriented terminology work and lists the different categories of terminological data that professional translators need most frequently in their daily work. ISO 12616 applies to any special language translation, including legal translation.

ISO TC 37 Data Category Registry

“ISOcat”

ISOcat is an international inventory of data categories frequently used for terminological and other language resources. Developers of terminological resources as well as terminologists may use it as a source of well-specified data categories that they need for their work. In addition to its inventory function, ISOcat also provides a collaborative platform for sharing existing data categories and suggesting new ones. ISOcat is publicly available at www.isocat.org.

9. Glossary of terms and definitions

This glossary contains terms and definitions for the most important concepts that are discussed in the present Guidelines. Most of the terms and definitions have been taken from or are based on international standards (see chapter 8 "Relevant international standards"). If no source is indicated, the definition has been drafted by the authors themselves. Terms used in the definitions which are defined in the glossary appear in small caps (example: CONCEPT).

Term	Definition	Source
AD-HOC TERMINOLOGY WORK	work concerned with the case-by-case collection, description, processing and presentation of CONCEPTS and their DESIGNATIONS	ISO 1087-1:2000, clause 3.6.1, slightly modified
ASSOCIATIVE RELATION	relation between two CONCEPTS having a non-hierarchical thematic connection by virtue of experience	ISO 1087-1:2000, clause 3.23
CANDIDATE TERM	string of characters which has yet to be validated as a TERM	adapted on the basis of ISO 10241-1:2011, clause 3.4.1.1.2
CONCEPT	unit of knowledge created by a unique combination of characteristics	ISO 1087-1:2000, clause 3.2.1
CONCEPT SYSTEM	set of CONCEPTS structured according to the relations among them	ISO 1087-1:2000, clause 3.2.11
CONTEXT	a text or part of a text in which a TERM occurs	ISO 12620:1999, clause A.5.3
DEFINING CONTEXT	a CONTEXT that contains substantial information about a CONCEPT, but that does not possess the formal rigor of a DEFINITION	ISO 12620:1999, clause A.5.3, http://www.isocat.org/datcat/DC-151
DEFINITION	representation of a CONCEPT by a descriptive statement which serves to differentiate it from related CONCEPTS	ISO 1087-1:2000, clause 3.3.1
DESIGNATION	representation of a CONCEPT by a sign which denotes it	ISO 1087-1:2000, clause 3.4.1
DOMAIN	field of special knowledge	ISO 10241-1:2011, clause 3.3.1
DOUBLETTE	TERMINOLOGICAL ENTRY that describes the same CONCEPT as another TERMINOLOGICAL ENTRY	ISO 26162:2012, clause 3.1.9, slightly modified
EQUIVALENCE	relation between DESIGNATIONS in different languages representing the same CONCEPT	ISO 1087-1:2000, clause 3.4.21

Term	Definition	Source
EQUIVALENT	DESIGNATION in one language which represents the same CONCEPT as a DESIGNATION in another language	
EXPLANATORY CONTEXT	a CONTEXT that provides a summary explanation of a CONCEPT	ISO 12620:1999, clause A.5.3, http://www.isocat.org/datcat/DC-152
GENERIC RELATION	relation between two CONCEPTS where the intension of one of the CONCEPTS includes that of the other CONCEPT and at least one additional delimiting characteristic	ISO 1087-1:2000, clause 3.2.21
HIERARCHICAL RELATION	relation between two CONCEPTS which may be either a GENERIC RELATION or a PARTITIVE RELATION	ISO 1087-1:2000, clause 3.2.20
NEOLOGISM	new TERM coined for a given CONCEPT	ISO 1087-1:2000, clause 3.4.7
NOTE	supplemental information pertaining to any other element in a TERMINOLOGICAL RESOURCE, regardless whether it is a TERM, term-related, descriptive, or administrative	ISO 12620:1999, clause A.8, slightly modified
PARTITIVE RELATION	relation between two CONCEPTS where one of the CONCEPTS constitutes the whole and the other CONCEPT a part of that whole	ISO 1087-1:2000, clause 3.2.22
PREFERRED TERM	TERM rated as the primary TERM for a given CONCEPT by a standardizing body	ISO 10241-1:2011, clause 3.4.1.3.1
SPECIAL LANGUAGE	language used in a subject field and characterized by the use of specific linguistic means of expression	ISO 1087-12000, clause 3.1.3
SYNONYM	TERM which is interchangeable with another TERM in the same language in all contexts within the same domain	ISO 1087-1:2000, clause 3.4.19, slightly modified
SYSTEMATIC TERMINOLOGY WORK	work concerned with the systematic collection, description, processing and presentation of CONCEPTS and their DESIGNATIONS	ISO 1087-1:2000, clause 3.6.1
TERM	verbal DESIGNATION of a CONCEPT in a specific DOMAIN	ISO 10241-1:2011, clause 3.4.1.1.2, slightly modified
TERMINOLOGY WORK	work concerned with the collection, description, processing and presentation of CONCEPTS and their DESIGNATIONS	ISO 1087-1:2000, clause 3.6.1, modified
TERMINOLOGICAL ENTRY	part of a TERMINOLOGICAL RESOURCE that contains the terminological data related to a single CONCEPT, or two or more nearly equivalent CONCEPTS, in one or more languages	adapted on the basis of ISO 26162:2012, clause 3.1.4

Term	Definition	Source
TERMINOLOGICAL GAP	situation in which a CONCEPT exists in one culture/language, but there is no corresponding CONCEPT in another culture/language	
TERMINOLOGICAL RESOURCE	text or data resource mainly consisting of TERMINOLOGICAL ENTRIES	ISO 26162:2012, clause 3.1.1, slightly modified
TERM EXTRACTION	part of TERMINOLOGY WORK which involves excerpting terminological data by searching through a TEXT CORPUS	ISO 1087-1:2000, clause 3.6.7, slightly modified
TEXT CORPUS	collection of language data brought together for analysis	ISO 1087-1:2000, clause 3.6.9
VARIANT	one of the alternate forms of a TERM	ISO 12620:1999, clause A.2.1.9

10. References

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