

Using Legal Definitions to Increase the Accessibility of Legal Documents

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Abstract. Access to legal documents has been hampered by the lack of attention for specific user groups accessing such documents. In this article, we focus on one of these user groups (legal professionals), who can benefit from specific types of cross-lingual information retrieval for, *e.g.*, comparative law research. We propose to use legal definitions as anchor points in legal documents. Through the body of EU legislation, these anchor points can support a network of concepts between different jurisdictions. A model is presented containing the different entity types and relations types for building such a network, which can be implemented in the WordNet architecture.

Introduction

Accessibility of legal documents can be supported in different manners, for instance by hyperlinking related documents, summarizing their content, highlighting their structure, supporting query formulation, full-text search, or thesaurus-based search. A suitable selection of support methods depends on the target user group, and the type of use they make of the document set. Laymen will generally need more support in finding the information they are looking for than legal professionals, and getting a rough idea of the content of a series of documents imposes other demands on access methods than finding a specific legal decision. The recognition of this rather obvious fact is seen nowadays in the differentiation of web services with a legal nature. The Dutch government not only offers a web-site with all valid legislation (www.overheid.nl/wetten), but also a 'product catalogue' (overheidsloket.overheid.nl), which makes accessible the services and products that emanate from valid legislation.

The LOIS project (lexical ontologies for legal information sharing) was initiated to increase the accessibility to legal documents (a) between different EU languages, (b) for persons with limited knowledge of the professional vocabularies used in law, and (c) for legal professionals. For this purpose, a large multi-lingual WordNet was proposed, supporting monolingual and interlingual information retrieval. The end product of the LOIS project will contain around 5,000 concepts (so-called 'synsets') per language [1]. These concepts are linked to each other (within and between languages) in meaningful ways, *e.g.*, by hierarchical relations and conceptual equivalence. In this article, we narrow down our scope to the use of legal concepts to support the accessibility of legal documents. The main question is: how can legal definitions in legislation be used to support the accessibility of legal documents?

In order to give an answer to the main question, in section 1, we will explain how the accessibility of legal documents can be increased through particular uses of legal

concepts. In section 2, we will elaborate on the different ways in which legal concepts are defined by legislators. Section 3 is devoted to a model for conceptual representation using legal definitions. Section 4 contains our conclusions.¹

1. Supporting Accessibility

Information retrieval is often based on the occurrence of terms in a query and in documents retrieved. However, the quality of search results depends on the degree to which the *meaning* of certain terms can be determined. The fact whether I am searching for documents on the *legal* term ‘agreement’ or on the *lexical* term ‘agreement’ is relevant to determining suitable search results (a text may be about, for instance, a political agreement, which probably makes it useless to a lawyer). This was the main reason to introduce legal terms and their (legal) definitions in the legal WordNet for the LOIS project, although the WordNet framework by default only features lexical definitions of terms. In the legal domain, term definitions may deviate from lexical definitions.

1.1. Using Legal Definitions for Retrieval Purposes

The lexical origination of the WordNet architecture has several consequences for the accommodation of legal terms and definitions. First, definitions ought to have a lexical nature, *i.e.*, they need to be explanatory rather than normative. Second, synonyms within a synset have an equivalent status (there are no preferred terms, such as in the case of a thesaurus). Third, relations between synsets have a lexical nature, *i.e.*, they generally fit in with lexically-oriented relations, such as hypernymy and hyponymy.

In order to use legal definitions in a WordNet in a meaningful manner, we thus have to stretch the boundaries of the original WordNet architecture [2]. First, legal definitions have a normative nature, *i.e.*, they establish meanings of legal terms independent of their generally perceived (lexical) meanings. Second, the use and definitions of terms in the legal domain determine whether there are true synonyms. In most cases, synonymy does not occur, simply because legal terms have normative definitions, and there is not much use in coining two different terms with identical normative definitions. Third, using legal terms and their definitions requires the employment of other relations than lexical ones. Although lexical relations can still apply in many cases, legal relations are needed for some applications of a legal WordNet.

Insofar as lexical WordNet relations apply to the legal concepts in the LOIS WordNet, a legal system, rather than a lexical system, determines which legal concepts are related to which other legal concepts. For instance, hyponymy and hypernymy will apply when they fit in with the ordering of concepts within a legal system. The principles of hyponymy and hypernymy will remain the same, although their actual use depends on the relation between concepts as dictated by a legal system. Insofar as legal relations are introduced, these reflect typical relation types between legal concepts that are not found in the ‘normal’ lexical domain.

1.2. Using Legal Definitions in Applications

There is an increasing interest in comparative law research, both for the comparison of national legal systems, and for the comparison of implementations of EU legislation in Member States. This interest is caused by, among other things, international trade rela-

¹ We would like to thank Sara Castagnoli and three anonymous referents for their valuable comments to a previous version of this paper.

tions and the need to implement EU legislation properly. It calls for ways to access documents from other legal systems, which are often written in different languages (Dutch vs. English legislation), or at least employ different legal vocabularies (Dutch vs. Belgian legislation).

What are the concrete opportunities offered by using legal definitions in a WordNet? First, relations in the WordNet can be used to follow a legal term to its 'equivalent' in a different language. Comparing national definitions of terms from European directives – and the context in which they are used – can be helpful for persons who are responsible for implementing those directives in a different national legal system. Second, if implementation has taken place, comparative law research can be of use in explaining the meaning of terms emanating from European legislation. For instance, telecommunication enterprises may – for various reasons - want to know how telecommunication directives have been implemented in other Member States and in which codes, Acts or any other legal documents these implementations have been enshrined – be it correctly or incorrectly. And a market regulator, like the Dutch telecommunications regulator OPTA, may well benefit from the explanation or interpretation of certain implemented terms by regulatory authorities or courts in different countries.

The scope of term definitions from EU legislation may be further determined by extending the search to documents other than just EU and national legislation. Court decisions, official publications and legal literature can be added to the document set. If there are no explicit links between an EU legislative document and a different document, a link between the two documents may be established through the occurrence of identical terms. This is how information retrieval usually works. The results of searches can be restricted by disambiguating – as much as possible – the meanings of identical terms. If a term such as 'employee' has different definitions in different legal sources, those different meanings should help us in finding only relevant documents, because the scope of a definition is often explicitly determined in legislative texts.

What does this mean for a user who is looking for documents relevant to a certain legal concept? First, the user can disambiguate the term. This is attained by presenting the user with the different definitions there are for a term, and let the user select the relevant definitions. Second, the retrieval system may perform the disambiguation. This can only be attained if the query contains sufficient terms to determine a context automatically. Third, the disambiguation may take place interactively, by starting the search with the user query and presenting all documents that contain the term(s) entered. The scope is then narrowed down by the user, who selects relevant documents. This may, in turn, provide valuable information to the retrieval software.

In a retrieval application, using a multilingual WordNet based on legally equivalent concepts derived from EU legislation with accompanying scope information can substantially support both the recall (across EU languages) and the precision (through disambiguating the meaning of homonyms).²

2. Defining Legal Concepts

Legal terms often have (partially) explicit definitions associated with them. This is especially the case in statute law, in which certain sections are devoted to making explicit

² In addition to a demonstrator application (see www.loisproject.org), the LOIS WordNet will be integrated in existing retrieval applications of several companies as a part of the LOIS project.

the meaning of certain terms within the context of the statute under scrutiny. The types of definitions found in legislation are described below. Such definitions are easy to identify, as they are often introduced by phrases such as: ‘Within this statute, x means y ’, where x stands for the term to be defined, and y for the definition. They are often found in approximately the same place in a statute, nearly in the beginning. Examples of this can be found in European legislation as well; in European directives, definitions are found mostly in article 1 or 2, directly after the considerations.

2.1. Definition Types in Law

Definitions in legislation aim to clarify the meaning of terms in order to prevent vagueness and ambiguity. They have a function and status different from definitions in an ordinary text. As a part of the body of a legislative text, legislative definitions are *norms*; they are legally binding on whomever interprets, enforces or implements legislation. This sets legislative definitions apart from lexical definitions. Because of this normative nature of legislative definitions they should only be used when strictly necessary. According to article 14 of the Interinstitutional agreement of 22 December 1998 on common guidelines for the quality of drafting of Community legislation – a draftsman’s handbook for European legislators – only ambiguous terms are to be defined in a way that differs from the lexical meaning. Many other countries and drafting cultures share this restrictive rule; definitional proliferation creates rather than limits interpretation problems.

According to Eijlander and Voermans [3], there are basically four techniques to define a term in a legislative text:

1. *No definition* (this is the technique whereby the legislator does not define a term at all, but relies on the everyday, lexical meaning, or even specialized language meaning – jargon – of a term. This technique is the most common technique and the preferred one. Only if a term is ambiguous, a legislative definition may be considered);
2. *Definition by context* (a given term may be ambiguous in itself, but put into the context of a given legislative text, its meaning is clear and precise);
3. *Definition* (whereby a – partial or whole - new meaning is given to a term). There are four definition types:
 - a. *generalizations* (defining by giving a general description. For instance in article 3, par. 3, of Directive 91/439/EEC ‘power-driven vehicle’ is defined as ‘any self-propelled vehicle running on the road under its own power, other than a rail-borne vehicle’);
 - b. *specifications* (defining by listing the elements that constitute the concept and hence its meaning. *E.g.*, article 2, par. 1 of Directive 2004/17/EC defines ‘central purchasing body’ as a ‘contracting authority (...) which: acquires supplies and/or services intended for contracting entities; or: awards public contracts or concludes framework agreements for works, supplies or services intended for contracting entities.’);
 - c. *recursive definitions* (defining by listing along the lines of a *decreasing* set of elements constituting the concept; stepping down as it were. Recursive definitions are quite rare, but an example of this technique is found in article 2, par. 2 of Directive 2004/38 EC where ‘Family member’ means: ‘(a) the spouse; (b) the partner with whom the Union citizen has contracted a registered partnership [...]; (c) the direct descendants who are under the age of 21 or are de-

pendants and those of the spouse or partner as defined in point (b); (d) the dependent direct relatives in the ascending line and those of the spouse or partner as defined in point (b)'); or

d. *abbreviations* (defining by giving a practicable abbreviation for a long or complicated term. E.g. a quite common example derived from Dutch legislation: 'Our Minister' shall mean 'Our Minister of Agriculture, Nature and Food Quality').

4. *Definitions by reference* (whereby a term is defined by way of reference. Example: the 'x' as meant in 'y'. E.g., article 2, par. 1, point c, of Directive 2003/30/EC defines 'other renewable fuels' as 'renewable fuels (...) as defined in Directive 2001/77/EC(8) (...)'.

Thornton [4] uses a somewhat different angle of approach and distinguishes two cumulative functions of definitions: the avoidance of ambiguity and the avoidance of repetition. Rather than discerning different definition techniques, Thornton is interested in the relation between legislative definitions and the lexical meaning of terms. To the notion of different definition techniques and definition types, he adds the element of *delimiting*, *extending* and *narrowing* definitions. Delimiting, extending and narrowing definitions are typically used to clarify the meaning of a certain term by stripping elements from a known definition or by adding new elements.

Delimiting definitions, for instance, refer to lexical meaning, but remove some of the vagueness. For instance, in Directive 2000/12 EC, 'credit institution' is defined as 'an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account', which is a fair representation of the lexical meaning of the concept, but removes most vagueness. Extending definitions expand the scope of a term with respect to its common meaning. An example of such a definition describes 'person' as including 'a corporation sole and also a body of persons whether corporate or unincorporate' [4]. Narrowing definitions limit the scope of a term with respect to its common meaning. For instance, in Directive 2000/12 EC, 'authorization' means 'an instrument issued in any form by the authorities by which the right to carry on the business of a credit institution is granted', which obviously limits the scope of the lexical meaning of 'authorization'.

With respect to these definition techniques and definition types, simplifications can be made in order to support the current research. With respect to definition techniques: providing no definition and defining by context do not yield explicit definitions in writing, and are therefore left out of consideration. Defining by generalization and by specification yield explicit definitions (enumerations of application conditions, and enumerations of entities/entity types, respectively). Defining by recursion can yield a definition of either type. Defining by abbreviation create synonymy between terms, and defining by reference constitutes a referral to a different definition – which can be of any type. In the context of this article, Thornton's [4] notion of delimiting, extending and narrowing definitions is especially useful in case of relating lexical definitions and legal definitions to each other. If we can determine what type of legal definition is used for a term compared to its lexical counterpart, this gives important information regarding possible WordNet relations to be established between the corresponding synsets.

2.2. Community Legislation: a Source of Conceptual Equivalence

In European Community legislation, a unique situation is created regarding legal meaning. All language versions of legislative and case law documents are deemed to be

equivalent (*cf* EEC Council, Regulation N° 1, determining the languages to be used by the European Economic Community, *Official Journal* 1958, p. 385-386). Thus, for instance, the legal effect of the Dutch version of a European directive is deemed identical to the legal effect of the English or Greek version of that directive. Although there can be objections to this principle, relating to practical translation difficulties and theoretical meaning discussions, the effect of the principle is that there is a common basis for assessing meanings of legal concepts in different EU languages. And although many of these legal concepts remain inherently 'European', because they leave no direct traces in national legislation, there is a category of documents that establishes an explicit link between Community legislation and national legislation. European *directives* provide measures that should be implemented in national legislation. For this purpose, any directive contains a series of norms. One of these is a definition article, containing a list of concept definitions.

Member States can either choose to implement these definitions literally (the so-called copy-out-technique, which is the preferred and most commonly used technique throughout Europe) (*cf.* [6], p. 15-16 and [7], directive 56) or they can opt for a different definition, for multiple definitions, or no definition at all (the so-called elaboration-technique) (*cf* [6], p. 16). The elaboration technique is used to create a better fit between a directive and the terminology or structure of national legislation. Of course transposition of directive terms by way of elaboration needs to remain within the preconditions set by the directive.

Thus, in a number of cases, an explicit implementation relation can be established between concepts in directives and concepts in national legislation. This is not only possible if the copy-out technique of transposition has been used, but in some cases even when the elaboration technique method was employed. Elaboration does, indeed, in some cases leave a traceable track in national legislation. This trace may for instance be found in an explanatory memorandum. In The Netherlands, for instance, an explanatory memorandum accompanying a Dutch Act, decree or regulation implementing an EU directive needs to contain a transposition table, relating the provisions in the EU directive to the national regulation ([7], directive 344).

The implementation relation, in itself, does not say anything about the way in which a concept is implemented. It only says *that* a concept has been implemented. The implementation relation can be complemented by a relation stating the nature of the link between the original concept and the implemented concept(s). For instance, if the definition of the national legal concept is identical to the Community legislative concept, an equivalence relation can be established. If the definitions are almost identical, a near equivalence relation is assumed. If the national concept has a definition more specific than the Community concept, the former is a narrower term of the latter. If the national concept has a more general definition than the Community concept, the former is a broader term of the latter.

One of the areas in which EU legislation plays a prominent role, is in the regulation of telecommunications (nowadays called 'electronic communication'). Many examples of implemented definitions can be found here. For instance, in Directive 2002/22/EC, we read: "public telephone network" means an electronic communications network which is used to provide publicly available telephone services; it supports the transfer between network termination points of speech communications, and also other forms of communication, such as facsimile and data'. A (supposedly) identical definition is available for all other official EU languages, among which is Dutch. The implementation of the concept 'openbaar telefoonnetwerk' is identical to the defi-

inition in the Directive (*cf.* art. 1.1 sub w Dutch Telecommunications Law). Clearly, the ‘copy out’ technique has been used for this particular implementation.

3. A Model of Cross-Lingual Legal Concept Comparison

On the basis of the observations in this paper, a model was designed for linking concepts from different legal systems in various languages. This model is based on the following assumptions. First, the meaning of legal concepts is for the greater part established in authoritative legal documents. Such documents constitute the formal sources of law: legislation, case law and customary law (additionally, doctrine is sometimes regarded as a formal source of law - the authority of doctrine is often questioned; however, it plays an important role in defining legal concepts). Such legal documents contain terms, some of which explicitly refer to legal definitions, whereas the meaning of other ones is established on the basis of everyday or contextual use. For explicit definitions, assembling application conditions is relatively easy. Sometimes, additional conditions have to be assembled from other sources; *e.g.*, different parts of legislation, and discussions in authoritative case law or doctrine.

If there are not sufficient explicit conditions in a definition, or a definition is lacking, different interpretation methods can be used, such as the grammatical, systematic, comparative law and teleological interpretation methods (for an overview of such methods, *cf.* [7]). In case of explaining the meaning of terms, these methods essentially support making explicit the application conditions that were left implicit, *e.g.*, at the time of drafting the legislative text. ‘Implicit’ refers to the legislative text itself. Application conditions may be found formulated explicitly in the parliamentary history of a proposal for legislation, or in a judicial opinion.

A term with an assigned meaning (either a legal definition, or an everyday or contextual definition) is a *concept*. Thus, legal documents contain terms, and terms refer to concepts, which on their turn are constructed from definitions or definition parts found in legal documents. The consequence of using legal definitions is that one term may be defined in multiple ways: different legal definitions may occur for a term such as ‘consumer’, and for the same term, a lexical definition may be provided. The term ‘consumer’ may have a meaning in agricultural legislation different from its meaning in consumer protection law.

3.1. Comparative Terminology

Castagnoli [8] describes the task of comparative terminology as the determination of the degree of equivalence between the concepts associated with related terms in different languages (also *cf.* [9]). She distinguishes three levels of equivalence: *perfect equivalence* occurs if the concepts expressed by the terms in the source language and the target language are identical. *Partial equivalence* occurs if the concepts expressed by the terms in the source language and the target language are more or less equivalent. *Non-equivalence* occurs if a concept in the source language has no equivalent in the target language. The second equivalence level, partial equivalence, has different manifestations. First, it can occur through different lexicalisations (the source language has one term referring to a certain concept, whereas the target language has multiple terms for two similar concepts). Second, two concepts in the target language may represent a distinction between meanings that is not found in the source language, which only has one term and a corresponding concept. Third, two terms (in the source language resp. in the target language) may be lexically related, but the concepts they refer to are dif-

ferent. Table 1 is based on Castagnoli's (2005) work, and also provides her examples of each of the equivalence types.

Table 1. Equivalence types

equivalence degree type	equivalence degree subtype	example (it = Italian, en = English)
perfect equivalence		it interesse = en interest
partial equivalence	different lexicalisations	it bene mobile ≈ en chattel, personal property
	partial equivalence	it tassa/imposta ≈ en tax
	lexical equivalence, conceptual difference	it contratto ≈ en contract
non-equivalence		it negozio giuridico ≠ en legal act

In addition, Castagnoli distinguishes between translation equivalence and functional equivalence. This distinction is relevant to, *e.g.*, country-specific institutions: the Italian term 'regione' refers to a concept which has a functional equivalence in England, namely the concept referred to by 'county', and translation equivalence denoted by the term 'region'. Both the different degrees of equivalence and the types of equivalence are a clear illustration of the problems that may be encountered if we attempt to link concepts between different languages. There is often no such thing as *the* translation of a term; there is only a more or less proper translation of a term within a certain context. However, the 'artificial' concepts in the legal domain provide support for making explicit differences and similarities between concepts.

Castagnoli's distinctions may be used to impose relations on legal terms in different languages. On their turn, these relations support the capabilities of a retrieval application. Obvious relation types to be introduced are: lexical equivalence (terms are 'literal translations' between languages, often occurring as a consequence of the common origination of European languages), conceptual equivalence (the concepts that terms refer to have identical application conditions), functional equivalence (the concepts that terms refer to play the same role in the two legal systems concerned). For conceptual and functional equivalence, a degree of equivalence can be used: if there is no equivalence, the conceptual or functional equivalence will not occur. If there is partial equivalence, this constitutes a characteristic of the equivalence relation, and if there is full equivalence, the same is valid. In a WordNet context, there is no second order description available, so relations cannot have characteristics. Therefore, we would end up with the following relation types: lexical equivalence, full conceptual equivalence, partial conceptual equivalence, full functional equivalence and partial functional equivalence. Lexical equivalence will be left out in the model in subsection 3.2, as we focus on the *meanings* of terms, not on their lexical appearance.

3.2. Overview of the Model

Relations among legal concepts may provide insight into the structure of legal systems. As such, they can facilitate retrieval of relevant, related information. With respect to Community directives, two types of relations are distinguished: structural and content relations. Structural relations reflect actual systemic connections between legal concepts; content relations reflect similarities or differences among the meanings of legal

concepts. Structural relations needed in the current model are an ‘implemented as’ relation (a relation between two legal concepts, one of which is part of an EU directive, the other of which is part of a national regulation based on that directive), an ‘implemented in’ relation (a relation between two legal documents, one of which is an EU directive, the other of which is a national regulation based on that directive). Content relations are based on the discussion of comparative terminology in section 3.1. These relations include conceptual equivalence, functional equivalence and legal equivalence.

In the table below, an overview of entities and relation types of the model of legal definitions is provided. These entities and relations can be implemented in the WordNet framework. Currently, the ‘implemented as’ and ‘implemented in’ relations are part of the LOIS WordNet. Synsets based on all definition articles present in EU directives in section 15.20 (Consumers) of the EU analytical register have been added to the LOIS WordNet. In addition to this, a selection of synsets based on definitions in other EU directives has been added to the WordNet, totalling around 2,000 synsets for the legal part of the WordNet (excluding the implemented national legal concepts still to be connected to the EU concepts).

Table 2. Entities and relations

entities and relations	explanation
legal document	document (pertaining to a formal source of law)
legal term	term present in a legal document
legal concept	term with ‘attached’ meaning, made explicit in the form of application conditions or an enumeration, originating from (a) legal document(s)
‘implemented as’ relation	relation between two legal concepts, one of which is part of an EU directive, the other of a national regulation based on that directive
‘implemented in’ relation	relation between two legal documents, one of which is an EU directive, the other a national regulation based on that directive
full conceptual equivalence	relation between two legal concepts: the application conditions (or the entities referred to) of the two concepts are equivalent
partial conceptual equivalence	relation between two legal concepts: the application conditions (or the entities referred to) of the two concepts are partly equivalent
full functional equivalence	relation between two legal concepts: the entities referred by the two concepts play an equivalent role
partial functional equivalence	relation between two legal concepts: the entities referred by the two concepts play a partly equivalent role
full legal equivalence	relation between concepts: full conceptual equivalence accompanied by legal recognition of this equivalence (such is the case with concepts from EU legislation in different languages)
partial legal equivalence	relation between concepts: partial conceptual equivalence accompanied by legal recognition of this equivalence (such is the case with certain concepts in EU legislation and their implementations in national regulations)

4. Conclusions

Legal definitions can provide valuable support in information retrieval applications. The LOIS WordNet contains lexical as well as legal definitions, and relations between them. The legal concepts in the WordNet may serve to support specific information retrieval applications useful to legal professionals. For instance, lawyers can look up

implementations of EU legislation by following the implementation links between concepts embedded in the WordNet, or they can perform comparative law research. The model proposed for the legal concepts part of the LOIS WordNet is based on the way in which authoritative legal documents specify the meaning of legal terms: partly by way of explicit definitions. These definitions determine the meaning of legal terms for a specific (legal) context. In the LOIS WordNet, the legal terms with accompanying definitions serve as *synsets* (sets of synonyms for specific terms, and the legal definition of these terms as so-called *glosses*). Relations between concepts can be established on the basis of certain legal connections, such as the relation between EU directives and their implementations in national legislation. By way of using the EU directives as 'junctions' in the WordNet, a relation is established between legal concepts in different languages.

This model of legal meaning assumes that there is no necessary relation between lexical and legal meaning. Legal concepts *may* be, for instance, specifications of lexical concepts, but the legislator may as well use, for any legal term, a meaning totally different meaning from the lexical meaning. As became clear from the different definition types elaborated on in subsection 2.1, the legislator has quite extensive tools in 'manipulating' or 'creating' meanings for terms. Therefore, traditional translation difficulties are also different for legal terms. On the one hand, differences between legal concepts may be larger than between lexical concepts, making translation more difficult. On the other hand, meaning differences are more often made explicit in authoritative legal documents, which makes translation easier. In the case of EU legislation, the situation is different: legal concepts in different languages are deemed equivalent.

EU legislation therefore plays a major role in enabling cross-lingual information retrieval in legal domains. It constitutes a source of conceptual and functional equivalence, but above all, it constitutes a source of legal equivalence. As EU directives have to be implemented in national legislation, the legal concepts from these directives leave their traces in national legislation, providing anchors for cross-lingual information retrieval. On the basis of Castagnoli's (2005) observations, the equivalence relations can be further specified in terms of conceptual, functional and legal equivalence. In the case of EU legislation in different languages, relevant forms of equivalence can often be found (full or partial legal equivalence, based on the legal recognition of full or partial conceptual equivalence).

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