Standardization within the Legal Domain: A Terminological Approach

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Abstract This paper is discussing a standardized, terminological approach for describing real property rights and restrictions. Real property rights and restrictions are an important part of the legal domain and function as instruments of conflict resolution regulating the use of real property. The outcome is a classification of rights and restrictions in order to further cross-border transfer of real property information. This paper is a continuation of the theoretical aspects put forth in a previous paper by the author.

JEL Classifications N89, K11, K39, N79, Z00.
Keywords Conflict resolution, legal standardization, real property rights and restrictions, legal modelling, terminology, cross border transactions.

1. Introduction

Law is an instrument stating what is allowed or not allowed in society, i.e. what is legal or illegal, thus commanding citizens how to behave. These ‘commands’¹ issued by a recognised authority provide a framework in which a society and individuals can operate. They also decide who has the right to act or not to act according to the law and their interpretation influence all sectors of our daily life, from how we behave towards each other in traffic to e.g. how to regulate ownership of material and immaterial things. Laws are imposed on both a national level and an international level, aiming at a ‘standardization’ and harmonization of (parts of) the legal domain, e.g. within the European Union.

The internationalisation of law is an old dream, leading to visions of legal integration or even unification (Delmas-Marty 2004). For example,

¹ ‘Command’ is in this paper used as a general expression and does not refer to any specific type of legislation or legal rule.
the French legal scholar Eugéne Lerminier (1803-1857) expressed that ‘we may say that there will be a world State, and say it, not simply a chimera, or utopia, but as a real and powerful fact (Delmas-Marti 2004: 247). However, as Delmas-Marti (2004: 246) correctly has pointed out, Lerminier was undoubtedly a little quick of the mark and there is today no genuine attempt aiming at the creation of a ‘world State’.

The research outlined in this paper is focussing on the use of terminological principles within a selected part of the legal domain; real property rights and restrictions. Real property rights and restrictions are regulating and influencing the ownership and use of real property. Applying standardized principles from the field of terminology will help to structure this part of the legal domain.

Real property rights and restrictions are important parts of the cadastral domain and are fundamental for effective land use, land management and are main instruments of conflict resolution. However, these means of conflict solutions are not standardized since they originate from different legal traditions and cultural backgrounds.

The cadastral domain has been subject to a standardized approach for a number of years conducted by both the scientific community and professional organisations. For example, in recent years attempts has been presented to increase uniformity in the cadastral domain through e.g. the presentation of the FIG Cadastre 2014 statement for a vision for a future cadastral system (Kaufman and Steudler 1998) and the development of a Core Cadastral Domain Model, describing the content of the central parts of the cadastral domain (Oosterom et al. 2006). The model aims at creating a common understanding of the structure of a (multipurpose) cadastre (i.e. a land and real property rights registration system), as basis for creating cross-border information services, where semantics have to be shared between countries in order to enable translations of real property terms.

2 Terminology is a science which has its roots in the technical product descriptions in the first half of the 20th century’s industrial sector. Terminology is an interdisciplinary discipline combining theories from other sciences like linguistics, philosophy and information technology. See Piëke (2000), Temmerman (2000) and Suonuutti (1997).

3 The cadastral domain is a common term for maps, databases and other registers managing cartographic and legal information regulating the ownership and use of real property, including different rights and restrictions (e.g. the right to travel over another property or to use a well on another property) which might be attached. See Paasch (2005a) and Zevenbergen (2002) for an introduction to the cadastral domain.


5 The International Federation of Surveyors, www.fig.net.
Another attempt to increase our understanding of the cadastral domain is the EULIS (European Land Information Service) initiative, providing a facility for reaching on-line and up-dated information about land across European borders (Laarakker and Gustafsson 2004, Ploeger and Loenen 2004 and www.eulis.org). EULIS is focusing on mortgaging and conveying of real property, in order to improve the possibilities of cross-border transfer and to compare national practices. The initiative is a contribution to the spreading of knowledge regarding national real property domains to interested parties in Europe. However, the initiative does not provide a fully standardized description of the information concerned, even if the information is described in a uniform way, making comparison easier for the user.

The aim of this paper is to provide a deeper analysis of the content of another standardized approach named the Legal Cadastral Domain Model (LCDM) (Paasch 2005a). The LCDM has been developed as a hypothesis stating that it is possible to achieve a 'neutral' classification and comparison of real property rights and restrictions in order to further cross-border transactions real property information. The model is to be seen as a specialisation of parts of the Core Cadastral Domain Model which only to a limited extent describes rights and restrictions.

More research in the different aspects of real property rights and restrictions within the legal domain is needed. This paper is a contribution to the ongoing research towards achieving cost-effective cross border information services. It focuses on a terminological approach describing real property rights and restrictions. See e.g. Zevenbergen, Frank and Stubkjær (2007). The purpose of this paper is to discuss whether it is possible to identify any characteristics and definitions which would allow the grouping of real property rights and restrictions according to the classification described in the LCDM, without limitation of any existing legal systems. The chosen methodology is based on terminological principles used in international standardization. The aim is to contribute the research on real property transactions by producing a terminological framework which can be used on grouping existing real property rights and restrictions. The establishment of a terminological framework would not interfere with the different legal systems in existence, but make it possible to create a standardized terminology for classification.

The paper does not deal with the organizational and legislative aspects or the resources needed or the normative power to achieve the intended classification.

This paper is aimed for readers with different backgrounds. Primary target groups are cadastral surveyors, real property lawyers, knowledge engineers and other professions dealing with research of implementation of real property legislation and classification in connection with cross-
border transfer of real property information. However, this paper should also be of interest to scholars who study standardization and related issues. Some chapters may seem obvious to some readers, but the aim of this paper is to introduce a hypothetical categorization of real property rights and restrictions to a broad academic and professional audience.

When dealing with real property rights and restrictions the use of words also has an economic impact since real property rights and other regulations are a vital tool in conflict resolution throughout the world. The author is of the opinion that standardized vocabularies or descriptions based on the legal content of rights and regulations are important tools in avoiding land and tenure conflicts and even being a tool for furthering cross-border real property transactions (Paasch 2007).

In order to achieve a thorough understanding of a fact, a problem or a semantic network of events, we must understand not only what the case is and what it consists of, but we must also understand how and why it is the case. We are even limited by our own thoughts, as the symbolism we employ when we speak is partly caused by the reference we are making and partly by social and psychological factors (Ogden and Richards 1923).

A standardized classification would contribute to the ‘matching’ of real property rights and restrictions existing in national legal systems with their corresponding counterparts existing in other national legal systems, even if they are not created by the same legal process or are named in different ways. It would be able to compare a right in country ‘A’ with the corresponding right (i.e. a right having the same characteristics) in country ‘B’, since both rights have the same impact on ownership. The principle is illustrated in Figure 1.

Figure 1 The principles of a terminological framework for comparison of real property rights and restrictions (based on Paasch 2007: 177)
It might be argued that an approach focusing only on a very limited part of the legal domain might not be cost effective. However, in order to achieve a scientific depth the research is limited to real property rights and restrictions. The field still covers a significant legal sub-domain which is important for settling of land conflicts and furthering economic development. Assuring access to land is a vital part of a nation’s legal infrastructure and economy. Furthermore, any attempt to bring any logic structure into the legal domain must, in this author’s opinion, be tested on limited areas of the legal domain and based on terminological principles. If the results of this research are positive it must be considered to expand the terminological approach to other parts of the legal domain by coming research activities.

2. The legal domain

Without the security of a legal framework to ensure individual rights, organised society as we know it and perhaps take for granted would not be able to function. In any large group of people, general rules and principles must be the main instrument of social control, and not particular directions given to each individual separately (Hart 1961: 124). Law is, and must be, authoritative (Watson 2004: 2). The English philosopher Thomas Hobbes (1588-1679) pointed out more than three and a half centuries ago that life would be ‘solitary, poor, nasty, brutish and short’ without a common power to regulate the activities within society (Hobbes 1651). In order to avoid this depressing situation it is necessary to have instruments of government to secure the rights granted by society and to resolve the conflict of interest which may occur.

There is no given structure in law. Numerous theories regarding the nature, structure and content of law exist and different theories have been presented and discussed by legal scholars during the last two and a half centuries. The legal domain has been described as being a ‘well of legislative source materials with conceptually-shaped buckets of many kinds, and we will then bring up rules, standards, and laws of any favoured pattern’ (Harris 1979: 92). These ‘buckets of law’ must be described in one way or another in order to bring structure and order to the domain. One attempt to structure the legal domain is to divide it into smaller parts, starting with the fundamental question regarding what law is and to the development of different legal ‘families’ or other systems of classification. It must be

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6 See e.g. Wahlgren (1992), Susskind (1987) and Peczenik (1974) for an introduction to the history of jurisprudence and legal reasoning.

stressed that there are no official legal ‘families’ or classification of legal systems. Any classification is made on the conditions and principles made up and used by the classifier, and are therefore to some extent subjective. Examples of such families are the Common Law family on the British Isles and the Civil Law families in Continental Europe. The dividing of law into distinct and more manageable components has been - and still is - subject for discussion among legal scholars. The working definition of law used in this paper is that law is ‘a norm promulgated by the state, on whatever level: a parliamentary act, regulations, promulgated by ministries or implementing agencies […] or municipal ordinances’ (Seidman and Seidman 2006: 288).

No framework is effective without communication. The use of words and their correct interpretation has always played a central role for communication and thus for culture, and the legal domain is no exception (Glenn 2004). A thorough and correct understanding of the specific legal terms we use when working on mutual tasks and projects are of vital importance for the success of our enterprises. Any description must be understandable by all parties involved and any success is based on the achievement of understanding. However, understanding requires a defined and accepted terminology; otherwise we will not be able to understand correctly what is meant. There are a multitude of different terms used in the legal domain. As a result, terminology and semantics has been subject for much debate among legal scholars and philosophers during several decades (Hoecke 2004, Nuopponen 1994).

The problem of furthering a correct understanding has been subject for much research. For example, Ogden and Richards (1923: 8-9) eloquently described the problems of understanding as:

There is no doubt an Art in saying something when there is nothing to be said, but it is equally certain that there is an Art no less important of saying clearly what one wishes to say when there is an abundance of material; and conversation will seldom attain even the level of an intellectual pastime if adequate methods of interpretation are not also available.

One of these methods of interpretation of the world around us, consisting of a countless number of objects, allowing us to rise above the level of an intellectual pastime is to apply the principles of terminology to the domain which has to be discussed. This is why terminology is regarded as

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4 The nature of law has been subject of constant discussions among legal philosophers during the last two centuries. See Hoecke (2004), Zweigert and Kötz (1995), Susskind (1987) and Hart (1961) for an introduction to legal theory and what ‘makes’ the law and what constitutes a legal system.
an important instrument when working within the legal domain. For example, Ekelöf (1945: 221) stated that ‘it is even of rather huge practical importance that certain and clear-cut terms are commonly accepted as representatives for different elements in the process of legal deduction’.

The common nominator for all legal families is that they are expressed in natural languages. With natural languages there is always the risk of misunderstanding, since natural languages are not predefined and clear systems of communication. Words might mean one thing in one legal sub-domain and another thing in another legal (sub-) domain. Therefore, any comparison of legal systems must include a study of the question to what extent the words used in the legal systems which are subject for comparison bear the same meaning (Hoecke 2004: 175).

Research in the field of artificial intelligence (AI) focusses on the translation of terms used in the legal domain into an ‘information theoretical language’ (Peczenik 1974), to be used in automated data processing. It is not possible to know what you are comparing or incorporating into a knowledge base if you are not able to know what it is. Susskind (1987: 116) argues that, in regard to the representation of legal knowledge expressed in natural language in AI, that in ‘[t]his form in which we find our sources is neither sufficiently structured nor formal enough to be fed directly into a knowledge base’. However, Wood (1990) is more straightforward in his criticism regarding how terminological discrepancies has been handled in the discipline of AI and law and stated that:

[t]his [communication problem] has had the unfortunate consequence of creating incommensurable vocabularies and misunderstanding, a ‘tower of Babel’ which has cut researchers of from each other and from the worlds of legal practice and scholarship. The failure to communicate has afforded some researchers the opportunity of shrouding their work in mystery and of avoiding criticism.  

Even if things hopefully have changed to the better in recent years, Wood’s statement is important since it illustrates the need for openness and co-operation when working with terminology. Without a defined terminology describing the subject or domain that is being researched, every attempt to further a common terminological approach will forever be shrouded into mystery.

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9 Author’s translation from Swedish.
10 AI is, among other things, an attempt to create an ontology for selected parts of the legal domain. See Susskind (1987) and Wahlgren (1992) for an introduction to AI. AI is not discussed in detail in this paper.
Legal reasoning is a complex process and diversity might be explained by that researchers have concentrated on different areas of the legal domain and ‘...that a number of things that initially stand out as dissimilarities might be explained by the lack of inconsistency in the use of terminology’ (Wahlgren 1992: 43). Nevertheless, without an established terminology, nothing can be compared or harmonized. There are several factors to take into account when applying terminology in the legal domain. A law is not always easy to understand and the use of words in the legal domain is surrounded by the same semantic problems of interpretation of words in other domains. Peczenik (1974) illustrates this by using the word ‘house’ as an example, and notes that ‘cabin’ or ‘hut’ under some conditions can be called a house and sometimes not. Even if a word or expression is ambivalent or vague, it is not interesting to describe every possible interpretation and focus is made on the specific case where the word or expression is used (Peczenik 1974: 61f). A problem is that the legislator cannot foresee all possible future use of a law and vague words and expressions might leave room for different interpretations, sometimes due to situations that were not present when the law was made. However, legal institutions are obligated to follow the intentions of the law, even if it might result in words and legal practices differing from each other within a legal system, or even worse, within a single law (Peczenik 1974). Strömberg has stated that knowledge in conceptual analysis can be of help in research regarding the use of legal tools. However, such knowledge does not ‘completely scatter the existing obscurity of how laws and precedents shall be interpreted and how the existing legal body shall be used (Peczenik 1974: 19)’.  

The semantic problems of the legal domain described above are even more complicated, when concepts originating from different legal systems describe the same thing, but are called by different names, or worse, when terms originating from different legal systems are used to describe more or less the same legal concept. For example, a specific type of right regulating the (partial) use of another real property, ‘easement’, is, according to Hoecke (2004: 174), rather similar to another real property right, ‘servitude’, but is not the same. However, recent guidelines on real property units, published by the United Nations, describes a servitude as an easement or right of one real property over another.  

The more or less fruitless initiatives of different legal movements to

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12 Strömberg, T., cited in Peczenik, (1974: 19). Title and publication date are not referenced in Peczenik due to a printing error. Author’s translation from Swedish.
13 (UNECE 2004: 61). An example is the right to use a road located on another property or to use water from a well located on another property.
solve the problems of semantics and terminology within the legal domain have been reported by several authors, e.g. Zweigert and Kötz (1995); Wahlgren (1992); and Susskind (1987). However, the legal movement of conceptualism has gone further than most others, claiming that everything could be described and defined by applying methods originating in the natural sciences. German legal scholars where in the second half of the 19th century much in favour of the ideas described in conceptualism (in German: Begriffjurisprudenz), admiring the achievement of exact results in the realms of natural science and striving at such exact results in their own, legal field.

The aim of conceptualism was to find legal concepts without any faults and every legal interpretation should have only one, right solution. In other words, law was in those circles seen as a standardized system of rules allowing only one, thus correct, answer, trusting in the emerging principles of natural sciences, where everything seems possible to be understood and explained. An example is the structure of the above mentioned 'servitude'. Puchta (1798-1846) has produced a 'conceptual pyramid' of the 'logical components' of a servitude.

Figure 2  Puchta's conceptual pyramid illustrating the 'logical components' of a servitude

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14 The expression is used by Wahlgren (1992). See also Susskind (1987), Strömholm (1981), and Peczenik (1974) for an introduction to conceptualism.
A servitude is, according to Puchta, first of all a right, then a property right, then a property right belonging to a person, then a property right regulating a ‘thing’ belonging to another person, then a property right over a property belonging to another person, then a right to in some way use a real property belonging to another person.\textsuperscript{15}

This logical method would, according to the conceptualists, bring order and structure to the complex and unstructured legal world. However, conceptualism has been subject of much criticism during the 19\textsuperscript{th} and 20\textsuperscript{th} centuries, stating that it is impossible to structure the legal domain, based on traditions, history and culture as if they were components of the natural sciences. Conceptualism has during the years maintained a rather bad reputation among legal scholars. To call the working methods of a legal scholar for conceptualism today is, according to Peczenik (1974: 148), actually regarded as almost insulting. The downfall of conceptualism was due to the too rigorous formulation of legal principles, unclear and unmotivated definitions without any relation to how legal work was carried out in real life. Rudolf von Jhering (1818–1892), who earlier had been much in favour of conceptualism, wrote a very satiric book stating that conceptualists after their death would ascend to a ‘conceptual heaven’, where they after their death, without intervention from social life, could reflect on concepts like ‘right to a right’. There would even be a ‘hair-splitting machine’, to which you could not get access without breaking down a wall with your head (Jhering 1884: 245-334)\textsuperscript{16}.

However, even if conceptualism is regarded as almost insulting today, we might use some of the principles incorporated in this method, e.g. the appliance of logic and structure on selected areas of the legal domain to achieve a standardized approach, without going back to the extreme wish to standardize ‘everything’, which reduced the movement to an intellectual pastime and a curiosity in legal history.\textsuperscript{17}

However, even if we consider contraptions such as a ‘hair-splitting machine’ as an amusing fictional anecdote, it does not take away the need for a common language for communication. This has even become more important during the computer age where e.g. correct registration of a real property right can be of vital importance for processing and analysis of information and the settling of land related conflicts. An example is the use of standards and an accepted vocabulary when storing information

\textsuperscript{15} Referenced in Peczenik (1974: 145). Author's translation from Swedish.

\textsuperscript{16} Jhering is sometimes written as Ihering.

\textsuperscript{17} Even if conceptualism is reduced to a historical curiosity today, the movement has had a strong influence on the establishment of the German legal system in the 19\textsuperscript{th} century (Peczenik 1974).
regarding real property rights and restrictions in a nation’s real property management system. For example, the importance of a standardized approach to real property information was noticed in connection with the establishment of the digital Swedish real property register and that ‘[t]he aim has to be the fitting of the separate registers into a uniform flexible net of information systems. This uniformity implies that the different registrations within the net must be able to fit in an integrated information processing’ (SOU 1966: 310).

It might be argued that the legal domain is neither sufficiently structured nor formal enough to be described into a computerized knowledge base since the domain involves the complexities of both syntax and semantics. This makes it difficult to be incorporated into legal expert systems and other databases. Furthermore, the shortcomings and inconsistent use of our natural languages has led to the development of a domain related specific language with its specific vocabulary, terms and synonyms. However, a terminological approach, focussing on the characteristics of rights and restrictions regulating ownership and interests in land might be a way to bring structure to this part of the legal domain.

3. Terminological approach

Terminology is a methodology to describe and order the use of terms and language in a number of fields. This advanced method of furthering understanding has a vital role in not only in the traditional IT community. One example is the developing of ontological models describing parts of the legal domain, e.g. the management of Intellectual Property Rights (Gangemi et al. 2005, Sagri et al. 2004).

The theoretical ideal for normative terminology is to have one expression describing one concept, but for the achievement of effective communication within specialist domains the use of synonyms cannot be excluded (Pilke 2000: 281). For example, a ‘cat’ is not only a four legged, furry creature (*Felis silvestris catus*) which we all are familiar with, but can also be a whip or a part of a ships equipment, depending on our own preferences. A ‘cat-of-nine-tales’ is an expression for a whip (Oxford 1995: 228) and ‘cat’ is also a sort of tackle used on ships (Paasch 1885: 150). In order to communicate with each other, we are forced to establish mutual preferences which we all agree too. We must, in other words, standardize our vocabulary to improve communication.

In order to apply a terminological approach we must first take a look at the basic components used in terminology: concept, object, characteristic,
definitions and term. These components are closely related and one is either the result or basis of another.

Object An object is anything that is perceivable or conceivable. Some objects are material, (e.g. a piece of land), immaterial (e.g. a planning zone) or imagined (e.g. a unicorn). However, we cannot speak of objects in the real world, since we do not have the ability to see the world with neutral and non-biased eyes. We have our own understanding or perception, i.e. a mental picture, a concept (see below), of what we see. It might be a house, chair, horse or, focussing on the legal domain, a right in real property.

Concept A concept is a mental construction of the real world formed in our own mind. A concept does not stand alone, but is part of a concept system, where concepts are put in relation to each other according to specific rules. Concepts are based on a selected number of characteristics (see below) that we think best describe the object we see (Suonuuti 1997). Concepts are in a terminological approach to be considered mental representations of objects within a specialised context or field.

Characteristics It is the characteristics which make us identify the ‘real world’ when we create our vision of it in our mind as a concept. If we, theoretically, never have seen a ‘house’, we still are able to produce the concept based on characteristics like walls, roof and windows and the fact that the building is intended to be used for dwelling or industry. However, we would not call it a ‘house’, but something else since a ‘house’ does not exist in our mental view of the world.

Definition We cannot use objects, concepts or characteristics to communicate effectively. In order to communicate precisely we need to define the concept as a unit. To define means to describe the concept by a descriptive statement which serves to differentiate it from other, related concepts. Producing definitions is producing ‘true’ statements or statements as near to ‘truth’ as possible, delimiting the concept from other concepts.

A definition must be as precise as possible to avoid misunderstandings and confusions. Ambiguity of words makes it difficult to express precisely what is meant. A general, methodological problem is the use of words. It is a major task for any standardization project to apply the correct terminology and ensure the correct understanding of the texts and diagrams describing the content of the standard. However, it would be rather

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18 This chapter is based on the international standards ISO 704 (2000), ISO 860 (1996) and ISO 1087-1 (2000) unless otherwise noted.
complicated to always use definitions when we communicate. We therefore need terms to express them.

**Term** Terms are the instruments we use for communication. A term must have a specific meaning, based on the definition delimiting and describing a concept. Otherwise it would mean different things to different people. A term is a verbal designation, i.e. representation of a concept by a sign which denotes it within a specific subject field. A term might exactly describe the object in question, but it might also be a commonly accepted word. For example, the use of the English term ‘Parcel’ does not only mean (a part of) land belonging to a real property, but also does also mean a small container used for sending postal goods. The English term ‘Lot’, does, among other things, also mean a part of land. The problem becomes even greater when communicating in different languages. Communicating with other communities we are forced to use other terms based on the same concept described by the same characteristics, e.g. ‘Katasterparzelle’ (German), or ‘Fastighetsområde’ (Sweden), which equals the English real property term ‘Parcel’. Terms may not only consist of words. Symbols, e.g. ©, @ or $, are also considered terms as they describe real or imaginary objects (ISO 704: 2000).

Any term must be based on the discussion of our mental pictures of real world objects, delimited by a number of characteristics which are mandatory for the object in question. The characteristics are the basis for how we identify, describe and name an object. It is the relations between the terminological elements that are the basis for any description.

### 4. A legal cadastral domain model

Bearing the principles of terminology in mind, we are now able to illustrate our understanding of parts of the real world and communicate the result using terms based on certain characteristics and definitions. The LCDM described below is a hypothesis classifying rights and regulations regulating real property. The accompanying descriptions listing the characteristics and definitions are placed in appendix.

It must be noted that ‘to own’ has not been properly defined by any author and is somewhat unclear. Black (2004: 933) describes ownership as a ‘bundle of rights’ allowing one to use, manage, and enjoy property, including the right to convey it to others. Friedman, et al. (1984: 193) describes real property ownership as methods of owning real estate, which affect income tax, estate tax, continuity, liability, survivorship, transferability, disposition at death and at bankruptcy. Gifs (1984: 331) describes ownership as one’s exclusive right of possessing, enjoying, a
disposing of a thing. In this paper ownership is regarded as the right to sell, transfer or in other way use a piece of land. To 'own' is, in its outmost consequence, the 'ultimate' right to a piece of land. See, e.g. Stubkjær (2003), MacCarty (2002), Honore (1987) and Snare (1972) for discussions regarding ownership.

The approach is based on the hypothesis that it is possible, in contrast to what Jhering believed only could be done in a conceptual heaven, to structure 'rights to rights'. The numerous rights (and restrictions) influencing real property can be systemised as belonging to a few numbers of 'classes'. Furthermore, they are 'connections' between real property and the one's who are executing them, e.g. a person who has been given the right to harvest fruits from the land. The connections do not have to exist, but there might also exist one or more rights or restrictions. These connections can be expressed as being either beneficial or burdening to ownership, based on their characteristics. The LCDM is intended to give an explanatory view of the categorization of real property rights and restrictions in relation to the Person, Ownership right and Land classes.

Ownership right is in the LCDM used as an equivalent for real property (i.e. the connection between land, person and ownership), in the same way as the real property registration number symbolises the whole real property in modern registrations systems. That is why the relations expressed in the model go from the different rights and restrictions to ownership right and not to land and person.

However, real property is in this paper defined as land in combination with ownership and person (Paasch 2005a). The LCDM illustrated in Figure 3 allow the existence of a real property without any land, since there is the possibility that it exists without having any direct, but indirect connection to land, since they only exist as shares in other real properties which have land. Illustrated by the 'zero-to-many' (0..*) relation in the model. This is e.g. the case with the Swedish 'andelsfastighet' (shared property). However, the most common scenario is that a real property has land and is executed by a person - ownership right - land relation.

The rights and restrictions in Figure 3 have relations to the Ownership right class, since they are benefiting or limiting ownership and thereby, according to the definition used in this paper, regulating the real property as such. They are divided into four main sections: Appurtenance (i.e. rights beneficial to ownership), Encumbrance (i.e. rights burdening to ownership).

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19 'Class' is a term used in UML (Unified Modelling language). A class is normally presented as a box.

20 A Swedish shared property exists solely as parts in other real properties and does not have any land of its own.
ship), Public advantage (i.e. public regulations beneficial to ownership) and Public regulation (i.e. public regulations burdening to ownership).

The appurtenance and encumbrance classes are divided into specific types of real property rights which are labelled 'Common right', 'Real property right', 'Personal right', 'Latent right' and 'Lien'. All rights can be an appurtenance (i.e. beneficial) or an encumbrance (i.e. limiting) to ownership. The classes appear in ‘two places’ in the model mirroring each for pedagogic reasons, being either beneficial or limiting to ownership. Publicly imposed restrictions are labelled ‘Public advantage’ (i.e. beneficial to ownership) and ‘Public regulation’ (i.e. limiting to ownership).

Figure 3  A legal cadastral domain model (based on Paasch 2005a: 132)

The analysis of the content of the classes is limited to the real property domain. It would otherwise be difficult to make clear and precise definitions. An example is the characteristics describing a ‘person’, which are limited to human and legal persons which own real property according to legislation. The definition of ‘person’ would have to change if used in another context where it is of no importance whether a person is allowed to buy or own a property or not. For example, a person executing a right is not the same person as described in the ‘Person’ class, which is limited to
the person(s) who own the real property in question. An example of a description of a class is shown in Table 1. All classes are described in the appendix.

Table 1 Description of ‘Person’ in the Legal Cadastral Domain Model

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>Owner of real property</td>
</tr>
</tbody>
</table>

**Characteristics**
- Part of the Person – Ownership right – Land connection
- An entity, i.e. an individual or an incorporated group having certain legal rights and responsibilities\(^{21}\)
- Can be any physical or legal person, also including state, municipalities and other private or governmental authorities
- Owns real property according to legislation

**Definition** Human being or legal person, state, municipality and other private or governmental authority who are owns real property according to legislation.

At the moment the author cannot see the duality of all classes, e.g. the existence of encumbering *Common rights* or appurtenant *Personal rights*. However, they are part of the theoretical model where appurtenances and encumbrances are mirroring each other. Their existence will, together with the other classes, be validated or falsified through case studies on different legislations.\(^{22}\) The case studies will focus on the validation or falsification of the characteristics and definitions described in the appendix. This means that the model in Figure 3 might be changed, too, depending on further research.

This paper has so far been focusing on legal domain, terminology, and a description of the LCDM. However, it is necessary to describe the interaction between the legal domain and standardization in order to analyse if it in fact is realistic to apply the term on the legal domain and if the approach described in this paper in fact is a standardized approach.

\(^{21}\) Based on Gifis (1984: 343) and Freidman (1984: 200).

\(^{22}\) The model has so far only been briefly tested on the Dutch and Swedish legislation by the author. The tests were positive, even if there were some discussions regarding the classification of some rights due to Dutch legal traditions (Paasch 2005b). Further studies of the Dutch and Swedish legislations, together with studies of the Irish and German legislations are currently being planned by the author.
5. Interaction between the legal domain and standardization

According to Jørgensen (1997), legislation is the oldest way of standardization we know. However, these legal instruments are traditionally normally not regarded as formal standards. Legal rules and standards are not substitutes, but interact. They are the result of different processes. Formal standardization differs from legalisation in the way that standards are private agreements based on voluntary implementation and legislations are officially imposed rules. However, it is possible to talk about e.g. the standardization of legal rules and procedures as long as we keep in mind that we do not mean the process of formal standardization by a national or international standardization institute. The legal domain can be seen as a ‘standardized’ framework in which a society and individuals can operate. See e.g. Adams (1994), who discusses the ‘standardization’ of legal norms and regulations within the European Union.

During the last decades the increased use of computers and the establishing of databases on a national level has forced a standardization of terms within numerous fields in order to communicate effectively between e.g. governmental and municipal organisations. Furthermore, there are situations where standards are used as legislative references. A governmental body may issue legislation based on the implementation of certain standards or actions fulfilling the intentions of certain standards. If legislation refers to a standard, the use of the standard might become mandatory in the fields which are covered by the standard. Examples are the New Approach and the Global Approach initiatives\(^\text{23}\), launched by the European Commission (EC). The principle is based on the use of standards in order to reach the essential requirements allowing a product free movement on the European market. Furthermore, the EC does also have the possibility of inviting the European standards organizations to elaborate European standards and enabling the free movement of goods (EC 2000). However, the application of standards is voluntary and a manufacturer may use other means than standards to meet the technical requirements laid out in a standard, thus fulfilling the requirements.

Legislative harmonisation is limited to essential requirements that products placed on the Community market must meet, if they are to benefit from free movement within the Community. Another example

illustrating the co-operation between the concepts of legalisation and standardization is the continued development of the Core Cadastral Domain Model (CCDM) (Oosterom et al. 2006). The CCDM has recently been submitted as a proposal for formalising the model and elevating it to an international standard (ISO 2008).

There are also several glossaries describing land tenure (i.e. rights in a land owner’s resource) and other land and ownership related terms in existence throughout the world today, aiming at improving the correct use of terms applied in the cadastral domain, e.g. UNECE (2004), Leonard and Longbottom (2000) and Bruce (1998). These glossaries are important tools when communicating within the real property field, but they are, in this author’s opinion, to be seen as a rather limited tool for structuring a common terminology due to the fact that they are based on the principles of different legal families or legal traditions, regardless of their good intentions. In many cases they can therefore not be seen as an efficient way of furthering any standardized approach towards the structuring of real property rights and restrictions on a pan-national level.

6. Conclusion

The aim of this paper has been to discuss a terminological framework for the handling, processing, retrieving and exchanging of real property information on a pan-national basis. The author has argued that it is necessary to develop a framework based on the characteristics of real property rights and restrictions. A terminological framework would make it easier to compare rights and restrictions existing in different legislations, thus reducing transactions costs in pan-national real property transactions.

During the last decades, the terminological aspects in regard to the correct registration and use of e.g. real property terms have become increasingly important. They are meant to improve the harvesting, handling, processing and exchange of digital information for land management in a cost effective way.

The first step has been to achieve conformity of the registration on a national level, regulated by one’s own national body of real property legislation, for creating computerised national real property registers. During the last decades this has to a large extent been done by national authorities. However, an analysis of the terminological aspects of the legal domain in regard to the Legal Cadastral Domain Model and the description of the characteristics describing real property rights and restrictions in the model

24 The model has been renamed to Land Administration Domain Model when it was submitted to ISO, see (ISO 2008).
are the next step from national registration towards pan-national exchange of real property information. This would make comparison easier when conducting cross border real property transactions without changing the existing national real property legislations and real property registers.

This paper has illustrated that it is possible to apply the principles derived from traditional terminology on a limited part of the legal domain. However, more research is needed to confirm or falsify the Legal Cadastral Domain Model outlined in this paper, especially through testing the proposed terms, characteristics and definitions by means of case studies on real property rights and restrictions originating from different legal families.

Appendix: Description of the classes in the Legal Cadastral Domain Model, LCDM

The classes with their designating term, characteristics and definition listed in table A1 below are the content of the LCDM. The content is to be seen as the highest level of information. Each class can be divided into sub-classes refining the content of each type of right or restriction. Examples are the division of personal rights into time-limited rights and rights granted for the duration of the right holders’ life. Another example are subrights, e.g. real property rights established through lease.

Table A1  The characteristics and definitions of the classes illustrated in the Legal Cadastral Domain Model illustrated in Figure 3

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>Owner of real property</td>
</tr>
</tbody>
</table>

Characteristics

- Part of the Person – Ownership right – Land connection.
- An entity, i.e. an individual or an incorporated group having certain legal rights and responsibilities\(^2\).
- Can be any physical or legal person, also including state, municipalities and other private or governmental authorities.
- Owns real property according to legislation.

Definition  Human being or legal person, state, municipality and other private or governmental authority who owns real property according to legislation.

\(^2\) Based on Gifis (1984: 343) and Freidman (1984: 200).
### Characteristics
- A connection between Person and a specific piece of Land.
- An executed right to own real property.
- Can be executed by one or more Persons.
- Subject to legislation.

**Definition**
Owns real property according to legislation.

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>Part of Earth</td>
</tr>
</tbody>
</table>

**Class**
Land

**Object**
Part of Earth

**Characteristics**
- Part of the Person – Ownership right – Land connection.
- Solid entity.
- A limited part of Earth.
- Can be regulated through legislation.

**Definition**
Part of Earth which is regulated through ownership. Land is the surface of the Earth and the materials beneath.

**Note**
Based on UNECE (2004: 58). Water and the air above land might also be considered land in some legislation.

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common right</td>
<td>A connection between two or more real properties</td>
</tr>
</tbody>
</table>

**Characteristics**
- An executed right by two or more real properties in land owned by the properties.
- The right is transferred together with a real property when the property is sold or otherwise transferred.
- The right is similar to Ownership right, but executed by real properties, not persons.
- The right can be beneficial or encumbering to ownership.

**Note**
The Common right is not a so-called common property in for example the Anglo-American legal tradition, which is a property acquired by e.g. husband and wife in common.26

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Property Right</td>
<td>A connection between two real properties</td>
</tr>
</tbody>
</table>

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26 See e.g. Gifis (1984: 81-82) and Friedman, et al. (1984: 55).
### Characteristics
- Right executed by the owner of a (i.e. dominant) real property in another (i.e. servient) real property.
- Right executed on the whole real property or a part of the real property.
- The right is transferred together with the real property when the property is sold or otherwise transferred.
- The right can be beneficial or encumbering to ownership.

### Definition
Right executed by the owner of a real property (the dominant tenement) in another real property (the servient tenement), due to his ownership. The right is transferred together with the real property when the property is sold or otherwise transferred.

### Note
An example is a road on a part of land used for access by the owner(s) of another real property, i.e. a right of way.

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal right</td>
<td>A connection between a person (not owner) and a real property</td>
</tr>
</tbody>
</table>

### Characteristics
- A right executed by a person other than the owner in a real property.\(^{27}\)
- The right to use or harvest the fruits/material of a real property, rent or lease the real property in whole or in part.
- The right follows the real property when the property is sold or otherwise transferred.
- The right can be beneficial or encumbering to ownership.

### Definition
Right executed by a person to use, harvest the fruits/material of, rent or lease the real property in whole or part, including the claim against a person. The right follow the property when it is sold or otherwise transferred.

### Note
A person might in theory belong to the property as an asset. However, this seems not to be the case today, since it would be the same as serfdom.\(^{28}\)

27 The person in not the same person as the one defined in the Person class, i.e. the owner of the real property in question. The person might in this case have several characteristics in common with Person, but e.g. but not being allowed to own real property.

28 Serfdom is the situation where a labourer is not free to move from the land on which he worked. It is part of the old feudal system and a serf were allowed to farm a part the lords estate land for his own benefit and give a part of the outcome the lord. A serf also had to work on the lord’s land for a certain number of days without pay (Oxford 1995: 1322). Serfdom is not the same as slavery, where a person is owned by another person and has no direct connection to land.
Latent right

A connection between a latent right and a real property

Characteristics
- A latent right waiting to be executed on or by a real property.
- Regulating the exploration of a real property by another real property or person.
- When a real property is sold or otherwise transferred the right normally follows with it.
- The right will be classified as a *Common Right*, *Real property right*, *Personal right*, *Public regulation* or *Public advantage* when executed, depending on its specific characteristics.
- The right can be beneficial or encumbering to ownership.
- The right does not contain security for payment and other financial interests, such as mortgage. These rights are placed in the *Lien* class, see below.

Definition
A right which is not yet executed on a real property. Regulating the exploration of a real property by another real property or person. When the real property is sold or otherwise transferred the right normally follows with it. Liens are not considered latent rights.

Note
When executed, a latent right will be classified as another right depending on its characteristics, e.g. a pre-emption right for a neighbour’s real property. Another example is an expropriation situation where the government has given permission for expropriation, but the expropriating party has not fulfilled the procedure by seeking a court decision for taking possession.

Class
*Lien*

Object
A connection between a financial right or interest that a creditor has and a real property

Characteristics
- A legal right or interest that a creditor (person or real property) has in another’s real property.
- Lasting usually until a debt or duty that it secures is satisfied.
- A latent, financial security for payment.
- The real property is used as security for payment and can be subject for forced sale.
- When executed, the *Lien* will be transferred to *Personal right* or *Real property right* depending on the type of creditor.
- The right can be beneficial or encumbering to ownership.

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29 Based on Black (2004: 766).
Definition  A latent, financial security for payment.

Note  An example is mortgage, which is a financial security granted by an owner of a real property to a person, normally a financial institution. Lien is a Latent right by nature, but is here classified as a separate class for pedagogic reasons. Friedman, et al. (1984:155) states that Lien is a type of encumbrance, but is here classified as being either beneficial or encumbering.

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public regulation</td>
<td>A connection between a public imposed regulation and a real property</td>
</tr>
</tbody>
</table>

Characteristics

- Publicly imposed burden.
- Encumbering to ownership and use of real property.

Definition  Legally imposed burden by an official organisation.

Example  A municipal zoning plan regulating the use of real properties located within a specific area.

<table>
<thead>
<tr>
<th>Class</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public advantage</td>
<td>A connection between a beneficial public imposed regulation and a real property</td>
</tr>
</tbody>
</table>

Characteristics

- Publicly imposed advantage.
- Beneficial to ownership and use of real property.

Definition  Publicly imposed advantage which is beneficial to ownership and use of real property.

Note  A dispensation from an existing regulation, e.g. a zoning plan, benefiting the real property when compared with the original regulation which is still regulating the neighbouring areas.

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