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Re: The Use of Glossaries in Patent Applications

"I don't know what you mean by 'glory,'" Alice said.

Humpty Dumpty smiled contemptuously. "Of course you don't—till I tell you. I meant 'there's a nice knock-down argument for you!'"

"But 'glory' doesn't mean 'a nice knock-down argument,'" Alice objected.

"When I use a word," Humpty Dumpty said, in rather a scornful tone, "it means just what I choose it to mean—neither more nor less."

"The question is," said Alice, "whether you can make words mean so many different things."

"The question is," said Humpty Dumpty, "which is to be master—that's all."

Lewis Carroll, *Through the Looking-Glass* (1872) p. 72.

The USPTO has proposed that patent applications contain a glossary section to assist examiners in claim interpretation. Like Humpty Dumpty, the USPTO has implicitly adopted the view that language can be mastered and controlled, that the meaning of individual words can be constrained and defined by their user in an arbitrary manner. Just as Alice questions whether the old egg can make words mean what he wants them to mean, we too should question the wisdom of using, let alone requiring, glossaries in patents.

As a preface to my remarks, I shall briefly summarize my background. I have been drafting and prosecuting software patents for more than 20 years, covering technologies from the lowest level of operating system design to the highest level of Internet-based services, as well as financial engineering, business methods and user interfaces. My clients have included some of the most well known companies in Silicon Valley and beyond. For the past 10 years I have been

the primary patent evaluator for more than a dozen different patent pools for international standards. In that capacity, I have critically evaluated more than 1,000 patents for essentiality to standards such as MPEG-4 Audio, MPEG-4 Video, 802.11, LTE and WiMAX. I have undergraduate degrees in philosophy and psychology, with an emphasis on philosophy of language, metaphysics and cognitive science, and a master's degree in software engineering. The views expressed herein are my own and not the views of my firm or of any of the firm's clients.

Sources of the Problem

What motivates the USPTO to consider the use of glossaries in patent applications is surely the hue and cry that software patents are frequently, if not inherently, vague and ambiguous, and that something must be done to help clarify—and more importantly, narrow—the scope of patent claims. See, Government Accountability Report “Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality,” August 2013, p. 28, 30.

My experience in prosecuting patents, and in particular in evaluating software patents for essentiality to technology standards, is that claims in software patents are no more or less ambiguous to one of skill in the art than claims in other disciplines. There is a difference between claims that are broad and claims that are vague, and this difference is lost on most observers. Indeed the examples used by critics of the patent system are typical of broad claims, not vague ones. See Chin, *On Abstraction and Equivalence in Software Patent Doctrine: A Reply to Bessen, Meurer and Klemens*, J. Int. Prop. Law, v.16, no. 2, pp. 197-240 (Spring 2009).

Second, to argue that the claims of issued software patents are frequently vague and ambiguous is to implicitly argue that examiners at the USPTO who examine software patents are systematically ignorant and unskilled at understanding the meaning of patent claims, something that I believe most software patent prosecutors and most examiners would dispute. It further suggests that the examination procedures that the USPTO has developed over the years have been and continue to be, fundamentally flawed. Again, this suggestion is without merit. While there are no doubt cases of bad software patents, there are equally bad patents in all other fields of technology. The studies showing software patents make up the bulk of litigated patents do not support the conclusion that software patents are vague; rather, they simply correlate with the relative rise in the pervasive nature of software technologies in all fields of commerce and the increasing penetration of digital technologies into every aspect of our daily lives. That is, the more that software is used to provide functionality—from washing machines to toasters, from smartphones to smart cars—the more patents we would expect on software-based inventions, and the more we would expect such patents to figure in litigation.

Third, even assuming that software patent claims are more ambiguous or vague than other types of patent claims, one should consider the source of the problem before proposing a remedy. Using glossaries to fix the so-called problem of ambiguity is like putting a Band-Aid on a birthmark: it covers up an unsightly but otherwise natural result, yet it cannot make it go away.

The primary problem with claims is that they are artificial linguistic products of a complicated set of rules and practices driven by tradition and case law, that is, rules that are not perfectly uniform, consistent or clear. The simple rule, set forth in MPEP 608.01(m) that a claim

must be a single sentence results in more problems than anything else, with claims running hundreds of words, having multiple clauses and subclauses all interlocked together with *wherein*, *whereby* and *further comprising*. The [Oxford Guide to Plain English](#) suggests that a well-written sentence contain 15 to 20 words; by contrast, patent claims routinely exceed 200 words, and longer claims are common place. See, [U.S. 7,593,860](#) (shortest claim is 1,019 words, longest claim is 1,053 words); [U.S. 6,763,226](#) (2,552 words); and [U.S. 6,953,802](#) (over 17,000 words!). For an insightful discussion of the history and alleged justification of the single-sentence rule, see, Stephen Scott, "[An Appeal to the New Patent Office Directory, Repeal the Single Sentence Rule.](#)" *Patently-O*, September 18, 2009.

The rigors of strict antecedent basis and the fear that a stray singular or an accidental plural will preclude infringement or lead to indefiniteness results in such monstrosities as

a meta-policy for representing said network security policy, said meta-policy comprising:

an association with zero or more outcomes;

an association with zero or more relationships;

an association with zero or more network objects; and

an association with zero or more services;

wherein a relationship of said zero or more relationships is associated with at most one of said zero or more services and is associated with at most one of said zero or more outcomes, wherein a protocol of said only one of said zero or more services must match a protocol at said only one of said zero or more outcomes, and wherein said relationship associated with an initiator network object and a target network object

See, U.S. [8,074,256](#).

Kristina Osenga, in [Linguistics and Claim Construction](#), insightfully observes that one of the inherent problems with the single-sentence claim form is "the difficulty of explaining anything complex in a single, concise, and comprehensible sentence." Even something as simple as a "sealed" peanut butter and jelly sandwich is reduced to a tangle of geometry and foodstuffs:

1. A sealed crustless sandwich, comprising:

a first bread layer having a first perimeter surface coplanar to a contact surface;

at least one filling of an edible food juxtaposed to said contact surface;

a second bread layer juxtaposed to said at least one filling opposite of said first bread layer, wherein said second bread layer includes a second perimeter surface similar to said first perimeter surface;

a crimped edge directly between said first perimeter surface and said second perimeter surface for sealing said at least one filling between said first bread layer and said second bread layer;

wherein a crust portion of said first bread layer and said second bread layer has been removed.

See, U.S. [6,004,596](#).

If this is what it takes to describe a sandwich, can we really expect claims to complex technology to be easily understood by judges and juries? Indeed, the problems created by the single-sentence rule motivated Judge Plager of the Federal Circuit to suggest that “Because claims in U.S. patents are written using words and phrases that purport to be in the English language, it might help if the rest of English language practice was used: short declarative sentences, careful and precise phrasing, and so on.” See, S. Jay Plager, [Challenges for Intellectual Property Law in the Twenty-First Century: Indeterminacy and Other Problems](#). Of import, the single-sentence rule is not required by statute or regulation, it is merely customary, and the Office could cease “to insist” upon its usage.

The second major source of confusion and dispute about claims comes from the doctrines of claim construction themselves. Over the years, the Federal Circuit has provided incomplete, conflicting guidance on claim construction, particularly regarding whether to rely on the specification or dictionaries as the primary source of the meaning of the claim terms (the literature is replete with commentary, and I will not repeat it here; an excellent summary is discussed by [Osenga](#), above). That conflict, along with the rule that claim construction is a matter of law and subject to de novo review, has contributed to a reversal rate of district court claim construction that has ranged between 20 percent and 50 percent over the past 10 years. And while Anderson & Menell have [recently shown](#) that reversal rates have dropped, they argue that the “Federal Circuit’s adherence to the de novo standard has frustrated district courts’ distinctive capabilities for apprehending and resolving the factual disputes inherent in claim construction determinations, undermined the transparency of the claim construction process, discouraged detailed and transparent explanations of claim construction reasoning, and produced alarming levels of appellate reversals.” Further, the Federal Circuit’s claim construction doctrines are at odds with well-established principles of linguistics, which explain how readers extract meaning from text. As Osenga explains in detail, “the Federal Circuit is disregarding many of the linguistic intuitions that everyday speakers and listeners use to understand language, which may lead to inaccurate claim interpretations and decreased public notice.” Glossaries will not fix these wounds.

A third source of potential confusion comes from the legal requirements for infringement that result in separate claims for apparatus versus method, and user versus manufacturer versus seller. Patent drafters specifically craft claims that can be directly infringed by an individual or other entity in different ways, such as by using a method, operating a system, or providing software for download. However, software products and services increasingly rely on interoperability and interconnectivity between multiple different entities, from the user of the device, through a network provider, to an online service, as well as hidden third parties, such as content delivery systems, advertising networks and so forth. Different claims are often drafted for each of these, with subtle but important differences in scope, such as whether an entity is “sending” or “receiving” or merely “displaying” a given item of information. These differences often lead to potential ambiguity as to which entity is performing which claim element.

The rules of claim drafting, claim construction and infringement result not individual words or terms being unclear, but rather in ambiguity in entire clauses. In my experience, disagreements with examiners over the scope of the claim focus on the meaning of a particular clause or entire limitation of a claim, and whether the examiner's interpretation of that clause or limitation as a whole is reasonable—not on the meaning of individual words.

Most patent attorneys and agents come from the sciences; they are not English majors or skilled grammarians, and yet are required to draft some of the most complex and convoluted sentences in the English language. As Justice Brown observed, “The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy.” *Topliff v. Topliff*, 145 U.S. 156 (1892). If anything, this difficulty has increased in the past 120 years. No glossary can make up for the problems inherent in the nature of claims themselves, or the rules that dictate their complicated forms.

The Nature of Meaning and the Function of Glossaries

The Office has focused upon glossaries as a potential mechanism for addressing ambiguity in patent applications without apparently sufficiently considering how glossaries function in ordinary discourse. A glossary is a collection of textual “glosses” of technical or difficult words. A gloss is an explanation or definition of a word or expression. The assumption then is that the words of some patent claims are sufficiently “technical” or “difficult” to understand that some additional explanation is required, above and beyond their use either generally, or more particularly, in the context of the patent specification.

But there are inherent, inescapable problems that will arise from the Office's proposed use of glossaries to provide “explanations or definitions.” These problems result from confusion about how we understand the meaning of words in language and how glossaries or “definitions” function. There are (at least) two different ways we understand the meaning of a word, one is its “sense” and the other its “reference.” A word's reference is the set of things in the world to which the word refers. The “reference” of *cat* is the group of animals that we refer to when using the word.

A word's sense is its dictionary definition. Webster's Third New International Dictionary provides this definition of *cat*:

A long-domesticated carnivorous mammal that is usually regarded as a distinct species (*Felis catus* syn. *F. domestica*) though probably ultimately derived by selection from among the hybrid progeny of several small Old World wildcats (as the Kaffir cat and the European wildcat), that occurs in several varieties distinguished chiefly by length of coat, body form, and presence or absence of tail, and that makes a pet valuable in controlling rodents and other small vermin but tends to revert to a feral state if not housed and cared for.

Now obviously, when you use the word *cat*, unless you are a felinologist, you certainly do not have *this* definition in your head. Even this definition, lengthy as it is, admits of a certain amount of open-endedness: Cats “probably” derived from certain Old World species, but not necessarily; they are distinguished “chiefly” but not solely by certain physical attributes (which are not at all specified here); they “tend” to revert to a wild state, but not always. What we see

here is typical of definitions: a general outline of features that are useful for identifying things that are cats, but which themselves are not fixed.

Perhaps you use a more simple definition, such as “a small domesticated carnivorous mammal with soft fur, a short snout and retractile claws. It is widely kept as a pet or for catching mice.” But that’s no good either because we know that some cats—that is, animals that are referenced by the word—do not meet this definition, such as various breeds of hairless cats or cats without claws. We would not say these animals are not *cats*—nor would we say that the definition is wrong. And note that this definition specifies particular physical attributes—soft fur, short snout—that are absent from Webster’s. Is the definition in Webster’s wrong then? Can they both be correct? How does one decide? Given even this simple example, it is clear that we do not understand language simply by reliance on dictionary definitions. How then do we understand what people mean when they use the word *cat*? This is a question that linguists and philosophers of language have discussed and debated for hundreds of years, and I do not propose to answer that question here.¹

For our purposes, it is enough to note that any dictionary definition is incomplete source of the meaning of a word. The dictionary definition of almost any word has two notable features. First, most words have multiple meanings, sometimes related, sometimes not. This is called *polysemy*. Typically, the more common the word, the more meanings it has. The word *rose* has more than a dozen different meanings, including the flower, a color, a smell, a part of a compass, a virtuous person, a gemstone cut and a type of window—as well as the past tense of the verb *rise*. The complete definition of *cat* includes the animal, as well as a male jazz enthusiast, a boat and a malicious woman. Even something as apparently simple as *on* has multiple different meanings: there are [at least 28](#) distinctive meanings of *on*, depending “on” (that’s one of them) how it is used. Second, the individual definitions vary in their precision, and often are expressed in terms of a thing’s attributes, qualities, functions, relationships and so forth, as well as synonyms and exemplary usages.

In linguistic terms, the formal dictionary definition is the main source of the *semantics* of a word. But as we can see, we do not understand words in a sentence simply by their dictionary meanings. The definitions are understood as guides to the meaning of the word built upon a larger context of knowledge and experience. That is, dictionary definitions do not “stand alone” but instead they assume the use of two other key elements: *syntax*, the rules that govern the form of expressions, and *pragmatics*, the principles describing the use of a word in practice. To grasp the meaning of a word, the reader must have an understanding of the context of the word, a certain knowledge about the world, and an understanding of the syntax and grammar of the language.

¹ The role of language in the law is itself a deep field of study, starting at least as far back as Jeremy Bentham’s *A Fragment on Government* (1776). Modern scholars include John Austin, H.L.A. Hart, and Ronald Dworkin. An introduction to the issues in law and the use of language is found at *Law and Language*, Stanford Encyclopedia of Philosophy, at <http://plato.stanford.edu/entries/law-language/#1>.

Just as individual words are susceptible to multiple definitions, so too are most sentences. During the Roundtable at Berkeley, it was suggested that claims should have “one plausible meaning.” This is simply not a tenable goal. Every claim has multiple *plausible* meanings, but we quickly rule out a majority of them and settle on the one that is most probable, again relying on the lexical and experiential context to guide our selection.

Stand-Alone Glossaries

The Office has proposed that glossaries “stand alone”: “The glossary definitions must “stand alone” and cannot simply refer to other sections or text within the specification or incorporate by reference a definition (or portion) from another document.” Using glossaries in this manner is contrary to how they are typically used, and how speakers of a language use their words. Dependence on glossaries further ignores the essential role that syntax and grammar play in providing meaning in claims.

Assume that you needed to know the scope of the word *cat* in a patent claim (this is not unreasonable, as there are *thousands* of patents addressing the needs of cats), and you consulted Webster’s dictionary definition, set forth above. First, there is the obvious problem that you know the meaning of other words in a definition to understand the definition at all. Thus, you have to know what *carnivorous* and *domesticated* mean before you understand the definition of *cat*. Second, you need to understand the cultural custom of humans keeping animals as *pets*—that a pet is not merely a domesticated animal, but something more intimate, like a companion. Cows, horses, goats and donkeys are domesticated but are not typically considered to be pets. Someone from a culture that does not keep pets would not understand why one would do so and would fail to understand an important aspect of *cathood*. Finally, you need to know that this kind of pet sometimes (but not always) kills mice, rats and so forth, and why this activity is “valuable” to the human keeper. But not all cats kill rats—and we would not say that Fluffy is not a cat just because he does not catch mice. Obviously then, dictionary definitions are not meant to express the complete meaning of a word “standing alone,” but within the framework of knowledge and experience that the reader is expected to have. This framework provides the *experiential context* for a word’s meaning.

However, knowledge and experience of the world is insufficient to provide the complete meaning of a word or expression, since the presence of other words in the sentence itself—or more importantly in the larger context of the document—are necessary. If I say to you, “that cat picked up the rose,” my meaning depends on the *lexical context* of our conversation—what our prior words were up to the point of my utterance. Are we discussing kittens playing with flowers in the park or are we people watching at Birdland in Manhattan?

Another aspect of lexical context is the syntax of the expression containing the term of interest. Syntax is an essential element to understanding meaning:

The apparatus has a rod that is connected by a frame to a bar.

The apparatus has a frame that is connected by a bar to a rod.

The same words are in both sentences, but the different orders result in entirely different meanings. A glossary defining *rod*, *frame* and *bar*, would provide no assistance in determining the meaning of these sentences.

The above sentences are perfectly “normal” English, but unacceptable as claim limitations. Patent claims have syntactical forms that consistently violate the ordinary rules of grammar. Consider the following clauses:

generating a control signal from an input signal using a regulation signal;

generating using a regulation signal a control signal from an input signal;

from an input signal, generating a control signal using a regulation signal;

from an input signal, generating using a regulation signal a control signal;

These clauses each use the same words, but have different meanings, some of which are ambiguous. Normal English speakers—such as judges and juries—would wince at most, if not all of them, but patent drafters and examiners think nothing of drafting in this manner.

The definitions in a dictionary and conventional glossaries are guides, not strict masters like Humpty Dumpty. We would draw a perverse stare if, in discussing our affection for Maine Coons with our neighbor, we insisted that his Ukrainian Levkoy was not a *cat* because it was hairless, declawed, and never caught or killed a rat. *Experiential context matters*. Likewise, we would be mystified if our neighbor inquired whether our tomcat preferred Thelonious Monk to Sun Ra. *Lexical context matters*.

The very fact that you knew immediately and unquestionably that a Ukrainian Levkoy was a type of domesticated cat kept as a pet—and neither a species of tiger nor a lover of the European free jazz style—without looking in a dictionary, even though you’ve likely never heard of it before, demonstrates that we do not rely on dictionaries to provide the meaning of words we do not know: we use lexical and experiential context, and only if that fails do we turn to the dictionary.

There is a further, and equally important, reason we do not constrain our understanding of the meaning of words to dictionary definitions, and that is the use of *tropes*. Tropes are the figurative use of words or phrases in a manner where the literal meaning of the words is not true or does not make sense, but the context of usage provides a non-literal meaning that does make sense. Tropes include metaphor, simile, hyperbole, metonymy, synecdoche and others. Of particular relevance to patents is the use of metaphor. Metaphor is a key mechanism by which inventors describe inventions that previously did not exist, and hence for which there are no precise words or phrases that encapsulate the inventive concepts. The use of metaphor in science and technology is well documented. See Lakoff & Johnson, *Metaphors We Live By*, University of Chicago Press (1980); Schon, *Generative metaphor*, in Ortony (ed.), *Metaphor and Thought*, Cambridge University Press (1993); Dasgupta, *Technology and Creativity*, Oxford University Press (1996); Brown, *Making Truth, Metaphors in Science*, University of Illinois Press (2003);

and Gentner & Jerzioski, *Historical shifts in the use of analogy in science*, in Gholson et. al. (Eds.) *The Psychology of Science: Contributions to Metascience* (1989).

One well-known example of metaphor in the development of technology is the commonly used “desktop” metaphor for the user interface of a computer, along with “folders,” “windows,” “trash cans,” “menus” and the like. These features are now so ingrained in our daily use of computers that we entirely forget that they are metaphorical constructs: there is no “desktop” inside your computer, let alone a “trash can” or a “window.” If the inventors of these features were limited to the literal dictionary definitions of these familiar words at the time, it would have been impossible to so fully capture and express the nature of these inventions in such succinct words. Metaphors work precisely because they allow the speaker to leverage relevant conceptual aspects from a source domain to a target domain (that real desktops are used to organize documents into folders) while ignoring the irrelevant aspects (that desktops are made of wood). Thus, by using these words in a decidedly non-literal sense, inventors are able to leverage the experiential context associated with the literal meanings into a new and different lexical context. Steven Pinker, in *The Stuff of Thought*, provides this explanation of how metaphors are used to express inventive ideas:

Scientists constantly discover new entities that lack an English name, so they often tap a metaphor to supply the needed label: *selection* in evolution, *kettle pond* in geology, *linkage* in genetics, and so on. But they aren’t shackled by the content of the metaphor, because the word in its new scientific sense is distinct from the word in the vernacular (a kind of polysemy). As scientists come to understand the target phenomenon in greater depth and detail, they highlight the aspects of the metaphor that ought to be taken seriously and pare away the aspects that should be ignored....The metaphor evolves into a technical term for an abstract concept that subsumes both the target phenomenon and the source phenomenon. It’s an instance of something that every philosopher of science knows about scientific language and that most laypeople misunderstand: scientists don’t “carefully define their terms” before beginning an investigation. Instead they use words loosely to point to phenomenon in the world, and the meanings of the words become gradually more precise as the scientists come to understand the phenomenon more thoroughly.

This ability to extend the meaning of words through metaphorical uses is an essential feature of human language and creativity. The very act of inventing is to create something new, something that has not been known before; in many cases there simply are no existing words or expressions that describe the invention, and so the inventor must either invent an entirely new word—the term *escalator* was coined by its inventor Charles Seeberger—or use an existing word in a metaphorical sense. In either case, language plays a critical role that cannot be exhausted fully by the use of dictionary definitions.

Thus, we cannot determine the meaning of a given word or phrase alone by looking it up in a dictionary or a glossary, no matter how artfully constructed. A word’s meaning in a claim depends every bit as much on the words that surround it in the claim, the syntax of the claim, its use in the patent specification itself—in sum, its *lexical context*—as well as its use in the

community of relevant readers, namely those of ordinary skill in the art, to explain a new concept—its *experiential context*.

We can now see that a “stand-alone” glossary would operate in a manner entirely contrary not just to how dictionaries are typically used, but also to how speakers of a language use words to both communicate and create new meanings. A fully decontextualized hyper-literal approach that treats the “definition” provided for a term as precise and absolutely limiting, would improperly ignore the lexical context of the patent specification or other claim language, the experiential context of the relevant community, and the expressive, metaphorical nature of inventive speech.

The foregoing points address some of the fundamental problems that arise from the underlying assumptions the Office appears to make about the use of glossaries. I will now address some of the implementation problems.

Identification of Glossary Terms

The very first problem faced by the patent drafter is which words to include in a glossary. Most claims are drafted using terms that are familiar to the drafter and the inventor, and that are by assumption familiar to the examiner as someone expected to be familiar with the relevant technology. Words like *computer*, *memory*, *module*, *circuit*, *logic*, *database*, etc. are commonly used, and patent attorneys expect that examiners understand these terms and that no specific definitions need be provided.

However, it is terms like these that are often the subject of dispute during claim construction, because they are precisely the kind of terms that can have highly varied scope, precisely as technology changes over time. Does a *database* include a lookup table in memory, or is it limited to a relational database based on Codd’s relational model? Is a *circuit* limited to an integrated circuit, or does it cover a DSP executing an algorithm? Since it is unlikely that patent counsel would include definitions of such common terms in glossaries, the proposal would have limited, if any, impact on the ambiguities—and arguments—that arise in litigation.

That leaves terms that are specifically constructed for the application, typically “functional” terms that take the form of <function word><structural noun>, such as “determination module” or “identification logic,” or <noun modifier><function word>, such as “user identifier” or “threshold tester.” These are arguably the terms that most need definition and thus the ones that the patent drafter would be most likely to attempt to define as broadly as possible. One problem arises however, the precise contours of these terms are not known at the time the application is drafted—but are worked out between the patent examiner and the patent attorney in view of prior art—paralleling Pinker’s explanation above of how scientists refine the meanings of their lifted metaphorical terms as they better understand the contours of the phenomenon of interest. Further, in some cases, the terms ultimately used in the allowed claims are not employed at all in the initial claims but only arise later on as the patent drafter amends the claim to avoid prior art. If the glossary is fixed when the application is filed, little benefit is gained.

Restrictions on Glossary Definitions

The Office has also proposed that “Alternative definitions for the same claim term that are inconsistent with each other are not permissible.” What does it mean to be “inconsistent with each other?” What if the examiner and the applicant disagree on whether definitions are inconsistent? For example, an applicant may define *circuit* as both hardware and software (logically consistent, but physically different) while an examiner may consider these inconsistent. Again, this restriction is contrary to the natural use of glossaries and definitions, which routinely list alternative definitions, precisely because words have different meanings, sometimes slight, sometimes significant, depending on the literal and experiential context of their use. To prohibit alternative definitions is to assume that there can be only one possible interpretation of a word regardless of the context of its use. This assumption is simply unreasonable and inconsistent with our use of language.

Amendments to Glossary Definitions

During the Berkeley Roundtable, the question of whether a glossary could be amended during prosecution was discussed. The Office raised the concern that this would introduce the possibility of new matter. However, this should not be a concern. Patent counsel routinely amend their specifications, and they understand the requirements against new matter. Examiners likewise are trained to identify and reject new matter, and can be presumed to do so effectively if such is added to a glossary, either in the form of a new definition that is unsupported, or the revision of an existing definition. Accordingly, if glossaries are to be required, then amendments to the glossaries should be allowed, and treated in the same manner as amendments to the specification.

That said, allowing amendments to a glossary is quite a different thing from *requiring* amendments. If a patent attorney is required to amend a glossary when a new functional term is added to the claim, this will hamper prosecution. Counsel would be more inclined to either argue claim rejections or amend claims in more obtuse long-winded ways that avoid the introduction of new terms requiring a definition. This is an example of strategic behavior, which I believe is the single most significant impediment to the use of glossaries.

“Rejections” of Glossary Definitions

Related to the question of amendment, was the question as to whether examiners should evaluate glossary definitions and reject those that are insufficient. Let us assume that is the case, and an examiner can reject a definition under § 112 for indefiniteness, in which case the applicant would turn to the rest of the specification to show the meaning of the term. This simply pushes back the problem: if an examiner can reject a glossary definition as indefinite, unsupported, etc. then that same rejection could have been made with respect to the claim. If ultimately the applicant relies on the specification to support a rejected glossary definition, then there is no need for the glossary to begin with. Thus, any issues regarding the meaning of claim terms can be settled in the “old fashioned” way, without relying on glossaries.

I think this point is fundamental and brings into sharp focus why the entire program for glossaries is unnecessary. Any claim term that the examiner believes requires definition can be defined precisely where it belongs: in the claims. And any support that is necessary for a claim

term will be found in the specification itself. There is nothing to be gained by having an examiner reject a claim term for indefiniteness or reject its accompanying glossary definition, as a well-founded rejection of the claim achieves all that is necessary: an amendment to clarify the claim and identification of support in the specification. The accompanying glossary definition is simply extra baggage.

And like airline fees, extra baggage costs money: the cost of prosecution will certainly increase if patent counsel has to deal with two separate rejections—of claims and of a glossary—with two sets of amendments, additional arguments, showings of specification support and so forth. Nothing is free in patent prosecution.

Glossaries and definitions typically are not used by inventors in their explanations of their inventions. Except for those whose work demands precise definitions such as mathematicians, inventors do not routinely provide rigorous definitions of the terms describing their inventions, but instead rely on the creative use of language in view of the common experiential context of their community. As a result, the task of manufacturing a glossary will be principally left to patent counsel, and we can expect then definitions that do not fully capture the understanding of the inventor or the relevant knowledge of the community of those of skill in the art. We can also expect predictable responses by patent attorneys to potentially limiting rules, as discussed next.

Strategic Behavior Arising from the Requirement of Glossaries

It may here be replied that all of these objections are beside the point because the burden rests upon the patent drafter to take all of these issues into consideration when formulating the glossary definitions, and to carefully construct the definition that bests reflects the scope of the claim that they are entitled to. If the drafter chooses poorly, they must accept the consequences of too narrow a definition, such as non-infringement, or too broad of one, invalidity.

This is trivially true but fails to consider what happens in the real world of patent prosecution—how patent attorneys will likely behave in the face of any set of rules. As a general principle, patent attorneys will seek to maximize flexibility in the meaning and use of particular words, and minimize the likelihood of a narrowing definition. And the more rules or the more restrictive the rules governing the implementation of the glossaries—limits on length of definitions, number of alternatives, etc.—the more strategic the behavior by patent counsel to avoid the impact of such rules. This behavior may be intentional, but need not be: patterns of strategic behavior can arise entirely without a party intentionally trying to manipulate the rules.

For example, if glossaries are optional, then some attorneys will simply avoid them entirely. Consider the practice of many attorneys to simply dispense with a summary of invention. This arose in response to a trend in Federal Circuit cases to construe claims based primarily on how the invention was described in the summary. Rather than adapt to these cases and draft a summary in broad and non-limiting terms, these practitioners simply eliminated what they perceived as the source of risk. Other drafters took a different route: they simply repeated the independent claims in prose form in the summary (a practice that is all too common today—and whose practitioners often have no idea why they do it, they were simply taught this style). In either case zero useful information is provided to the examiner or any other reader.

If the only use of a glossary is by the examiner and the court to narrow the scope of the claim—which must be assumed—then there is no reason a patent attorney would include one absent compulsion. Obviously, no benefit is obtained by either the examiner or the public for understanding the claims if no glossary is provided. “Incentives” such as faster examination, or other procedural benefits are simply the patent equivalent of the adage “a moment on the lips [the glossary], forever on the hips [the claim scope].” Or to put it more directly, glossaries are perfect subjects for a *Miranda* warning: “Everything you say can and will be used against you in a court of law.”

Let us assume then that the Office requires glossaries in future applications. We can predict a number of different approaches by patent drafters to minimize their impact. First, it is likely that any glossary will have a minimal number of entries. One way this will be achieved is by avoiding the use of specially defined terms, relying perhaps on more long-winded and complex expressions in place of shorter more succinct terms or expressions. For example, instead of using the technical term *encoder* in a claim and having to provide a glossary definition thereof, counsel may instead use the more cumbersome *digital information format conversion module*, relying on the customary meanings of the individual words or providing general definitions for each of these words. No additional clarity is gained by this approach, but the risk of a narrowing definition is arguably avoided.

Another approach would be to follow the *claims-as-summary-of-invention* model: entries in the glossary will simply be taken directly from the patent claims themselves, preserving as carefully as possible the exact phrasing and limitations of any particular elements. For example, consider a method claim for encoding an audio bitstream, with the following step:

receiving the audio bitstream, the audio bitstream containing encoded data that represents audio content of an audio input signal, wherein the audio bitstream also contains encoding parameters generated by an audio encoder when encoding the audio input signal to produce the audio bitstream...

The glossary entry for “audio bitstream” could be simply:

An audio bitstream is a bitstream that contains encoded data that represents audio content of an audio input signal, and also contains encoding parameters generated by an audio encoder when encoding the audio input signal to produce the audio bitstream.

The net result is that no useful information is provided to the examiner, but again the drafter has minimized the risk of a narrowing claim interpretation. In short, rules mandating glossaries with particular features will only further turn patent attorneys into “clever draftsmen,” precisely the opposite of the intended goal.

USPTO Pilot Program

During the Berkeley Roundtable, the Office discussed an initial study it did of some 72 patents having glossaries to determine whether there were any identifiable metrics to support the argument that glossaries were beneficial. The metrics included a reduction in the number of false positive rejections (rejections that should not have been made) and false negative rejections (rejections that should have been made but were not), as well as a reduction in the number of

office actions. The results were inconclusive, leading the Office to propose a pilot program whereby applicants can choose to participate and include a glossary. Apparently, the Office intends to again evaluate these and similar prosecution metrics to determine whether glossaries are beneficial.

This approach is perhaps interesting, but it is both irrelevant and flawed. This impact of glossaries is not a “data driven” problem, for the reasons I have discussed above; the issues are systemic, resulting from the nature of language and the behavior of individuals in complex, rule bound systems. Similarly, surveys of examiners for their opinions (even with management not present) as to whether they think glossaries would be helpful are simply not relevant: examiners, though critical to the prosecution process, are not the ultimate “consumers” of patents. Of course we would expect examiners to support any change that makes, or appears to make, their work easier and quicker, regardless of the long-term consequences of the change, or whether that change in fact improves the “quality” of patents. The simple fact is that the majority of examiners have no knowledge of, or experience in, the legal and practical issues that arise during patent litigation (e.g., claim construction, prosecution history estoppel, etc.), or how patents are licensed or used in technology transactions—all of which can be critically impacted by the scope of claims, and thus by extension, by the presence of glossaries.

Second, the proposed metrics—or any metrics that derive from the prosecution process—are simply measuring the wrong thing. What matters is not the number of office actions, how many rejections were in error, etc. What matters is what happens to patents after they are granted. Ideally, one would want to know whether patents with glossaries are less frequently litigated (i.e., because the scope of the claims was more readily determined by the parties), resulted in larger royalties or licensing fees, or had other indicia of improved value. Of course, these questions are years away from being capable of determination, and largely outside the reach of the Office, and so naturally the Office has decided to measure attributes more under its immediate control and within its purview.

But the measurement problem remains—just because the Office can measure internal prosecution metrics does not mean that it should or that they are meaningful. Let us assume that the pilot program demonstrates that patents with glossaries have a shorter pendency and fewer rejections errors (false positives and false negatives). Does this tell us anything about whether the patent claims are actually less ambiguous in the “real world”? It does not—precisely for the many reasons I set forth above. If examiners tend to allow patents more quickly because they see a glossary of claim terms and think that the claims will necessarily be limited by the definitions regardless of what they actually cover—and if experience is any guide, this is precisely what some examiners will do—the resulting claims are just as likely to be broad and potentially vague as patents without glossaries.

The response to this argument is that I’m assuming examiners are not always diligent, and that’s not the case in practice and certainly not in the pilot program. Let us assume then that the examiners in the pilot program are extremely conscientious about reviewing the glossary and making sure all terms are well defined, etc., setting aside all of the issues I have discussed above. Let us assume that the metrics demonstrate “better” outcomes, however measured. These results still cannot be meaningfully used to extrapolate the impact of glossaries’ rules on patent applicants in general. This is because the participants in the pilot program are self selected—

they do not represent applicants operating under required rules, but instead those who choose to be in the pilot program. As a result, they are more likely to pay particular attention to carefully crafting their glossary definitions, to be motivated to provide complete and detailed responses to any objections or rejections, and to respond to all other aspects of how the glossaries impact prosecution in a non-representative fashion. Self selection inherently results in a form of [sampling bias](#) called “self-selection bias,” in which the decision of certain individuals (here, patent applicants) to participate in a study is correlated with the behaviors being studied. Short of randomly sampling applicants and requiring them to provide a glossary (which obviously the Office cannot do) the problem of sampling bias cannot be eliminated in this pilot program, though it can be minimized by careful study design.

There is a third major problem with the pilot program, at least as it was described at the Berkeley Roundtable. What is the relevant control group? To decide whether glossaries make a difference in prosecution, one has to ask: compared to what? It is not sufficient for the Office to simply compare its prosecution metrics to known metrics that it currently has on hand—average pendency, error rates, etc.—because the population from which these known metrics were derived is by definition not similar to the population of the pilot program (self-selected as it may be). Instead, the Office has to create a control group of applications that is [sample matched](#) to the applications in the pilot program. Sample matching here would be along the lines of selecting one or more applications from the same art unit, classification and examiner for every pilot program application. Ideally, there would be multiple matching samples for each pilot program application, and the metrics for these samples would be compared to the corresponding metrics of the pilot applications to determine whether the pilot applications have statistically significant differences in metrics. In short, the Office should consult an expert statistician to assist in the pilot program design.

Conclusion

The use of glossaries or other forms of definitions implicates fundamental issues in the nature of language and meaning, and I have only touched upon a few of these. The Office, for all of its experience in the examination of patents, does not have deep expertise in these areas. To further understand the issues I have set forth above, and to develop a theoretically sound and practically effective approach, the Office should consult with experts in linguistics and philosophy of language. The Office’s visit to Berkeley to discuss the use of glossaries was unintentionally felicitous, as some of the best linguists, philosophers and other scholars of language are resident there: [George Lakoff](#), Chair of Berkeley’s Department of Linguistics; [John Searle](#), Philosophy; and [Geoffery Nunberg](#), School of Information, to name a few.

Sincerely,



Digitally signed by Robert R
Sachs
DN: cn=Robert R Sachs, o, ou,
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c=US
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