

Patent Claim Construction: A Modern Synthesis and Structured Framework

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ABSTRACT

The construction of patent claims plays a critical role in nearly every patent case. It is central to evaluation of infringement and validity, and can affect or determine the outcome of other significant issues such as unenforceability, enablement, and remedies. Yet jurists and scholars have long lamented the challenges of construing patent claim terms. Drawing upon more than a decade of working with the Federal Judicial Center, leading jurists in those districts with the largest patent dockets, experienced litigators, and academics, this article provides a pragmatic and cohesive framework and roadmaps for navigating this rapidly evolving landscape as well as guidance on the best practices for managing claim construction.

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I. INTRODUCTION

The construction of patent claims plays a critical role in nearly every patent case. It is central to evaluation of infringement and validity, and can affect or determine the outcome of other significant issues such as unenforceability, enablement, and remedies. Over the past two decades, the substantive standards and process for delineating patent claim terms have undergone significant evolution. The Supreme Court’s decision in *Markman v. Westview Instruments*⁴ marked the beginning of the new era, but the Federal Circuit’s search for workable standards as well as the experimentation of district courts with case management process – most notably the development and spread of Patent Local Rules – also played major roles in the reformation of patent litigation. The result is a bewildering array of cases and rules that can overwhelm litigants, counsel, law clerks, and jurists.⁵ Scholars have found a relatively high reversal rate for claim construction rulings⁶ and shown that even experienced patent jurists fare little better than

⁴ 517 U.S. 370 (1996).

⁵ Even experienced district court judges have expressed deep frustration with the reversal rates for claim construction. See, e.g., Kathleen M. O'Malley et al., A Panel Discussion: Claim Construction from the Perspective of the District Judge, 54 Case W. Res. L. Rev. 671, 682 (2004) (noting that some district court judges are “demoralized” by the high reversal rate); Anandashankar Mazumdar, Federal District Courts Need Experts That Are Good 'Teachers,' Judges Tell Bar, 70 Pat. Trademark & Copyright J. (BNA) 536, 537 (2005) (quoting a district court judge suggesting that given, the high reversal rate on claim construction, “you might as well throw darts”). The Federal Circuit has noted the concern. See *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1381 (Fed. Cir. 2005) (Rader J., dissenting) (noting that the Federal Circuit “often hears criticism from district court judges that its reversal rate on claim construction far exceeds that of other circuit courts”); *Ultratech, Inc. v. Tamarak Scientific Co.*, No. C 03-03235 CRB, 2005 WL 2562623, at *7 (N.D. Cal. Oct. 12, 2005) (“Nor can the Court say that Ultratech’s claim construction position is so frivolous as to warrant sanctions; to be candid, this Court is reluctant to hold that any claim construction is frivolous, given the well-known reversal rate in the Federal Circuit.”).

⁶ See Michael Saunders, *A Survey of Post-Phillips Claim Construction Cases*, 22 Berkeley Tech. L.J. 215 (2007); Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 Lewis & Clark L. Rev. 231, 232-34 (2005); Andrew T. Zidel, *Patent Claim Construction in the Trial Courts: A Study Showing the Need for Clear Guidance from the Federal Circuit*, 33 Seton Hall L. Rev. 711 (2003); Christian A. Chu, *Empirical Analysis of the Federal Circuit’s Claim Construction Trends*, 16 Berkeley Tech. L.J. 1075 (2001). Although a 30 percent reversal rate appears troublingly high, it is not

new judges.⁷ The jurisprudence of claim construction has been roundly criticized for lacking theoretical or practical coherence.⁸

If nothing else, the past two decades have revealed the inherent difficulties of using language to define the boundaries of abstract and intangible rights. The challenges have only grown with the rise of information technologies. The boundaries of patent claims to software and business methods have proven particularly ambiguous.⁹

This article seeks to provide a cohesive framework and roadmaps for navigating this rapidly evolving landscape as well as guidance on the best practices for managing claim construction. It reflects the culmination of more than a decade of working with the Federal Judicial Center, leading jurists in those districts with the largest patent dockets, experienced litigators, and academics to understand the specialized field of patent litigation. From a conceptual standpoint, the article takes a pragmatic and experiential approach. Part II begins with a step-by-step approach to the task of construing patent claim terms. We integrate the many principles, canons, and doctrines with a structured framework. With that architecture in place, we organize and explore the various doctrines, with emphasis on their practical significance. Part III turns to the role of procedure in claim construction. We discuss the pioneering work of jurists and litigators in the Northern District of California –a prominent technology center and patent district – in developing a pragmatic set of case management and disclosure rules for managing the claim construction process. Those rules have now been adapted in many of the patent-intensive districts throughout the nation. We then examine additional best practices for structuring the claim construction determinations, including determining how many claim terms to construe (and when to make those determinations), the use of tutorials in conjunction with claim construction, and integrating claim construction and dispositive motions.

significantly above reversal rates in other areas of complex litigation. See Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Predictability of Interpretive Regimes*, 61 U. Miami L. Rev. 1033, 1038-39 (2007).

⁷ See David L. Schwartz, *Courting Specialization: An Empirical Study of Claim Construction Comparing Patent Litigation Before Federal District Courts and the International Trade Commission*, 50 Wm. & Mary L. Rev. 1699 (2009); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 Mich. L. Rev. 223 (2008).

⁸ See Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 57 U. Pa. L. Rev. 1743 (2009); Kelly C. Mullally, *Patent Hermeneutics: Form and Substance in Claim Construction*, 59 Fla. L. Rev. 333 (2007); Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 Rutgers L.J. 61, 62-63 (2006); Joseph Scott Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 Lewis & Clark L. Rev. 177 (2005); Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 Lewis & Clark L. Rev. 123 (2005); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. Pa. L. Rev. 1105 (2004); Russell B. Hill & Frank P. Cote, *Ending the Federal Circuit Crapshoot: Emphasizing Plain Meaning in Patent Claim Construction*, 42 IDEA 1 (2002); Gretchen A. Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time Is Ripe for a Consistent Claim Construction Methodology*, 8 J. Intell. Prop. L. 175 (2001); Craig A. Nard, *A Theory of Claim Interpretation*, 14 Harv. J.L. & Tech. 1 (2000).

⁹ See James Bessen & Michael J. Meurer, *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk* (2008).

II. A STRUCTURED FRAMEWORK FOR CLAIM CONSTRUCTION

It will be useful to have some historical and jurisprudential context for claim construction in place before delving into the details. With the growing resort to the use of juries in patent cases since 1980, the issue emerged of whether the judge or the jury should construe the terms of patent claims. Until 1996, it was common in jury trials for courts to include claim construction as part of the jury's charge. Resolving the scope of patent claims in this manner, however, significantly increased the complexity and uncertainty of trials. The question of who should have responsibility to determine the meaning of patent claims came before the Supreme Court in the seminal case of *Markman v. Westview Instruments*,¹⁰ from which the term “*Markman* hearing” is derived.

In *Markman*, Markman sued Westview Instruments for infringement of its patent on a system for tracking articles of clothing in a dry-cleaning operation. After a jury found infringement, Westview Instruments moved for judgment as a matter of law on the ground that the patent and its prosecution history made clear that the patent claims at issue did not extend to the defendant's accused device. The trial court granted the motion based on its examination of the patent and other evidence presented. On appeal, the patentee asserted that the trial court's judgment violated its Seventh Amendment right to a jury trial on claim construction. *Markman* called attention to the fact that it had introduced expert testimony on the issue. Based on the historical allocation of responsibilities between judge and jury as well as functional considerations (the training and experience of judges in interpreting written instruments as well as the technical nature of patent claims), the Supreme Court held that claim construction is a matter for the court and hence beyond the province of the jury. The Court emphasized that judges are better equipped than juries to construe the meaning of patent claim terms given their training and experience interpreting written instruments (such as contracts and statutes). And even though cases may arise in which the credibility of competing experts affects the determination of claim meaning, “in the main” the Court anticipated that claim construction determinations will be “subsumed within the necessarily sophisticated analysis of the whole document, required by the standard construction rule that a term can be defined only in a way that comports with the instrument as a whole.”¹¹ The Court also emphasized that judges are better able to promote uniformity and certainty in claim construction. The Court specifically noted that treating claim construction as a “purely legal” issue would serve *stare decisis* principles as courts are better situated to give due weight to decisions of other courts that have previously ruled on the same issues.

Although resolving an important issue for patent litigation, *Markman* spawned a complex set of substantive and procedural questions regarding when and how patent claims should be construed. This Article begins with the framework and substantive rules governing claim interpretation and then presents the procedural matters relating to claim construction.

¹⁰ 517 U.S. 370 (1996).

¹¹ *Id.* at 389.

A. Deriving Meaning From Claims

Although providing some guidance on the approach for construing patent claims, the *Markman* decision spawned many issues relating to the proper framework for determining claim meaning. The Federal Circuit has issued over 1,000 opinions since *Markman* addressing this subject. Its approach has shifted over the years and therefore it is critical for courts to ensure that they are focused on the most current and authoritative decisions. The Federal Circuit's *en banc* decision in *Phillips v. AWH Corp.*¹² stands as the most authoritative synthesis of claim construction doctrine. But while putting to rest various controversies, many core tensions in claim construction persist. Moreover, the decision itself does not provide a step-by-step approach to construing claims. This section provides a systematic process for approaching the *Markman* determination.

We begin by explaining the process of claim drafting so as to understand the genesis and evolution of claim terms. We then preview the sources for determining claim meaning and the general hierarchy set forth in *Phillips*. With this background in place, we offer a structured analysis of claim construction. At the highest level of abstraction, claim construction entails analysis of several threshold questions regarding whether and when a claim term is interpreted and then working through the construal process. The court begins the process with an initial interpretation of the claim term in question based on its own reading. To the extent that the parties identify additional sources of guidance from the intrinsic evidence or extrinsic sources, the court must then systematically work through the various sources to reach a proper construction. There are several special cases as well: commonly interpreted terms, means-plus-function claim terms, and mistaken or indefinite claim terms. We also explore the appropriate deference to be accorded prior claim construction rulings. The section concludes by identifying some common claim construction pitfalls and a summary of key process and substantive issues.

1. Claim Drafting: The Genesis and Evolution of Claim Terms

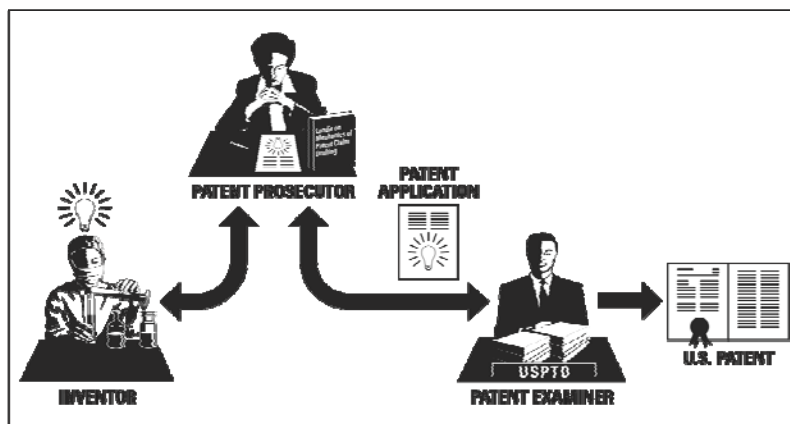
Patent claim terms emerge through a process typically involving multiple contributors employing at least three distinct and distinctive vocabularies – plain English, scientific and/or technical jargon, and the conventions of claim drafting. The court is comfortable with the former but may need assistance interpreting terms that derive from the fields of science and claim drafting. Understanding the process of claim term drafting will assist that semantic challenge.

Chart 1 illustrates the drafters and lines of communication and collaboration leading to the ultimate words used in patent claims. The claim drafting process begins with the invention and inventor(s). Whether independent or employed in a corporate or university research and development unit, the inventor(s) will in most cases communicate their ideas to a trained patent attorney or agent. That person will typically have some familiarity with the field of invention (although not necessarily to level of the inventor) as well as substantial training in the drafting of patent applications. Her job is to describe

¹² 415 F.3d 1303 (Fed. Cir. 2005).

and claim the invention in terms that will satisfy the requirements of the Patent Act. She will seek to write the claims with sufficient specificity to clear the validity hurdles while providing the patentee with significant breadth to cover the foreseeable uses of the invention. As indicated by the two headed arrow between the inventor and the patent prosecutor, there is often substantial back and forth between the inventor and the drafter before filing of the initial application. After that initial filing, however, prosecution of the application and continuations may continue for years. There is often minimal or no interaction between the patent attorney and the inventors during this period, which causes a further drift in nomenclature, which complicates claim construction. (This can lead to the anomalous and surprisingly common situation, many years later, in which a court can be called upon to construe a claim term that appears nowhere in the specification.) Whereas the inventor may be steeped in the language of his or her field, the patent drafter will be using terms from science as well as claim drafting to achieve a delicate balance of clarity, breadth, and flexibility.

Chart 1
Crafting of Patent Claim Terms



The process of claim drafting does not end when the patent application is submitted. The patent examiner will often play a role in the ultimate claim language of patents. Like the patent prosecutor, examiners have some knowledge of the technical field as well as experience in the process of claim drafting and evaluations. As with the process of application drafting, communication between the prosecutor and the examiner travels in both directions. Patent claims are frequently amended during the prosecution process based on the actions of the examiner. The examiner's interest is in ensuring that the claims are valid – (1) not anticipated, obvious, or indefinite; and (2) adequately described.

Thus, patent claim language can be an amalgam of multiple vocabularies and perspectives. The patent case law instructs courts to interpret patent claims from the perspective of a person having ordinary skill in the art (i.e., the scientist, technologist, or artisan in the relevant field of invention). This characterization, however, glosses over the role of the patent draftsman and the examiner in actual claim drafting practice.

Whereas some claim terms – such as “hydroxypropyl, methylcellulose” – undoubtedly derive their meaning from the pertinent technical art, other terms – such as the transitional phrase “comprising” – are better understood from the perspective of the person having ordinary skill in *claim drafting*. Still other terms – which frequently are the focus of the greatest disputes – are simply being used in their plain English sense. Courts need to be sensitive to these distinctions in determining which terms require construction and how those terms requiring construction are interpreted.

2. *Sources for Deriving Claim Meaning*

Claim construction draws upon two general categories of evidence: intrinsic and extrinsic. Chart 2 summarizes the main components of these sources.

Chart 2	
Sources of Evidence for Claim Construction	
Intrinsic Evidence:	
	<ul style="list-style-type: none">• Patent• Prosecution History• Foreign and Related Patents (and their Prosecution Histories)• Prior Art that is cited or incorporated by reference in the Patent-in-Suit and Prosecution History
Extrinsic Evidence:	
	<ul style="list-style-type: none">• Inventor Testimony• Expert Testimony• Other Documentary Evidence<ul style="list-style-type: none">○ Dictionaries○ Treatises

Prior to the *en banc Phillips* decision, the Federal Circuit doctrine on whether extrinsic evidence could be considered and what role it should play shifted significantly. From 1996 until 2002, consideration of extrinsic evidence beyond educating the court about the technology was heavily disfavored.¹³ But nearly contemporaneous decisions

¹³ See *Vitronics Corp. v. Conceptonics, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (finding it was “improper to rely on extrinsic evidence”).

cautioned against such a strong reading.¹⁴ In 2002, the Federal Circuit appeared to elevate dictionaries, a special category of extrinsic evidence, to a central role in claim construction.¹⁵ Within a short time, however, the limitations of this approach became apparent: “The main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent. . . . [H]eavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification.”¹⁶

Phillips shifted attention back toward the intrinsic record while recognizing that extrinsic evidence can be considered, although with healthy skepticism. Extrinsic evidence may be considered if the court deems it helpful “to educate [itself] regarding the field of invention . . . [and to] determine what a person of ordinary skill in the art would understand claim terms to mean.”¹⁷ The court emphasized, however, that extrinsic evidence must be considered “in the context of the intrinsic evidence[,]” but is “less reliable than the patent and its prosecution history in determining how to read claim terms.”¹⁸ Since *Phillips*, the law is clear that intrinsic evidence serves as the principal source for claim construction and that it trumps any extrinsic evidence that would contradict it.

a) Principal Source: Intrinsic Evidence

“Intrinsic” evidence refers to the patent and its file history, including any reexaminations and reissues. Intrinsic evidence also includes related patents and their prosecution histories. In addition, the Federal Circuit generally treats as intrinsic evidence the prior art that is cited or incorporated by reference in the patent-in-suit and prosecution history.

i) Specification

The patent specification provides a written description of the invention and the manner and process of making and using it.¹⁹ It includes the field and background of the invention, the drawings, detailed description of the invention, preferred embodiments, best mode of practicing the invention (although it need not be labeled as such), and the patent claims. Noting “the close kinship between the written description and claims”²⁰ as required by the Patent Act, the Federal Circuit in *Phillips* emphasized that claims “must

¹⁴ See, e.g., *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998) (noting that *Vitronics* “might be misread by some members of the bar as restricting a trial court’s ability to hear [extrinsic] evidence. We intend no such thing.”).

¹⁵ See *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002).

¹⁶ *Phillips*, 415 F.3d at 1321.

¹⁷ 415 F.3d at 1319.

¹⁸ *Id.* at 1318-19.

¹⁹ See 35 U.S.C. §112.

²⁰ *Phillips*, 415 F.3d at 1315.

be read in view of the specification, of which they are a part”²¹ and that the specification is “‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’”²² Where the specification reveals a special meaning to a claim term or an intentional disclaimer, such definition or limitation governs claim construction.²³ It is common and “entirely appropriate” for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims.²⁴

ii) Prosecution History

Beyond the specification and other claims, an important source of evidence in claim construction is a patent’s prosecution history. A “prosecution history” consists of “the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent.”²⁵ During those exchanges, the Patent Office will commonly reject the pending patent claims as unpatentable in light of prior art technologies. In response, the patent applicants will typically explain why their claimed inventions are patentable over what had come before. The Federal Circuit cautions that “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.”²⁶

More specifically, the patentee may expressly limit the scope of its patent through disclaimers in order to avoid prior art. Because the inherent tension between validity and infringement issues often plays out in claim construction, it can be particularly illuminating in determining what the claims *do* cover to analyze what the applicant said they do *not* cover in order to get the patent issued. However, courts must carefully evaluate such disclaimers, which can be ambiguous, during claim construction.

The communications between the applicant and the Patent Office may reveal the “ordinary meaning” of a claim term – *i.e.*, the communications may show the meaning of a claim term in the context of the patent.²⁷ For example, in *Nystrom*, the prosecution history of the patent confirmed that the claim term “board” in the patent referred to wooden boards, and not plastic boards.²⁸

iii) Related and Foreign Applications

Some patents issue from single applications, with a single prosecution history. Other patents are members of large families of related patents, with a web of underlying

²¹ *Id.* at 1316 (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), *aff’d*, 517 U.S. 370 (1996).).

²² *Id.* at 1316 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996).

²³ *See Id.*

²⁴ *See Id.* at 1317.

²⁵ *Id.* at 1317.

²⁶ *Phillips*, 415 F.3d at 1317.

²⁷ *See Phillips*, 415 F.3d at 1317 (“Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.”).

²⁸ *See Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1145 (Fed. Cir. 2005).

patent applications, along with counterparts filed in foreign countries. In such instances, when one patent is in suit, parties may find statements in its related patents and patent applications, and in its foreign counterparts, that bear on claim construction. To what extent these statements in related filings affect the construction of the patent in suit is a common dispute in patent litigation.

Where there are a series of patent applications, with the patent in suit issuing from a later-filed application, disputes frequently arise over the implications of statements made during prosecution of an earlier-filed application (*i.e.*, in a “parent” application). The statements in the parent application are most relevant where the earlier statements address common claim terms with the patent being construed.²⁹ Moreover, where an amendment in a parent application “distinguishes prior art and thereby specifically disclaims a later (though differently worded) limitation in the continuation application,” prosecution disclaimer may apply.³⁰ The earlier disclaimer may continue to apply throughout a patent family, particularly if the applicants do not later inform the Patent Office that they want to rescind the earlier disclaimer.³¹ However, the general rule is that when different claim terms are present in the parent and descendant applications, the earlier statements have no bearing on claim construction.³²

Statements to foreign patent offices in counterpart filings may be relevant to construing a U.S. patent where the statements made to the foreign office demonstrate the ordinary meaning of a claim term.³³

²⁹ *Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.*, 265 F.3d 1294, 1305-06 (Fed. Cir. 2001).

³⁰ *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1078 (Fed.Cir. 2005).

³¹ *See Hakim v. Cannon Avent Group, PLC*, 479 F.3d 1313, 1317 (Fed. Cir. 2007) (“Although a disclaimer made during prosecution can be rescinded, permitting recapture of the disclaimed scope, the prosecution history must be sufficiently clear to inform the examiner that the previous disclaimer, and the prior art that it was made to avoid, may need to be re-visited.”).

³² *See Ventana Med. Sys., Inc. v. Biogenex Labs., Inc.*, 473 F.3d 1173, 1182 (Fed. Cir. 2006) (“[T]he doctrine of prosecution disclaimer generally does not apply when the claim term in the descendant patent uses different language.”); *ResQNet.com, Inc. v. Lansa, Inc.*, 346 F.3d 1374, 1383 (Fed. Cir. 2003) (“Although a parent patent’s prosecution history may inform the claim construction of its descendant, the [parent] patent’s prosecution history is irrelevant to the meaning of this limitation because the two patents do not share the same claim language.”).

³³ *See Glaxo Group Ltd. v. Ranbaxy Pharms., Inc.*, 262 F.3d 1333, 1337 (Fed. Cir. 2001)(noting that a statement in a related U.K. prosecution history “bolsters this reading” of the claimed “essentially free from crystalline material” limitation in the asserted U.S. patent); *see also Tanabe Seiyaku Co., Ltd. v. U.S. Int’l Trade Comm’n*, 109 F.3d 726, 733 (Fed. Cir. 1997) (“In the present case, the representations made to foreign patent offices are relevant to determine whether a person skilled in the art would consider butanone or other ketones to be interchangeable with acetone in Tanabe’s claimed N-alkylation reaction.”). However, because legal requirements for obtaining a patent in other countries may be unique to those countries, statements made to comply with those requirements are generally disregarded in interpreting a U.S. patent. *See Pfizer, Inc. v. Ranbaxy Labs., Ltd.*, 457 F.3d 1284, 1290 (Fed. Cir. 2006) (“[T]he statements made during prosecution of foreign counterparts to the [patent in suit] are irrelevant to claim construction because they were made in response to patentability requirements unique to Danish and European law.”).

b) Extrinsic Evidence Permissible, But It May Not Contradict or Override Intrinsic Evidence

“Extrinsic evidence” refers to all other types of evidence, including inventor testimony, expert testimony, and documentary evidence of how the patentee and alleged infringer have used the claim terms. Dictionaries are considered to be “extrinsic” evidence.³⁴ *Phillips* reaffirmed that the intrinsic evidence is of paramount importance in construing patent claims. Nonetheless, extrinsic evidence can be useful, and *Phillips* confirms that district courts are free to consider extrinsic evidence, including expert testimony, dictionaries, treatises, and other such sources. Litigants continue to argue that it is improper to consider extrinsic evidence in *Markman* rulings, citing *Vitronics Corp. v. Conceptronics, Inc.*³⁵ However, the Federal Circuit long ago disavowed any such interpretation of *Vitronics*, and *Phillips* puts to rest any suggestion it is wrong to consider extrinsic evidence.

A key to relying on extrinsic evidence is recognizing its limitations. *Phillips* spells out five reasons why extrinsic evidence is inherently less reliable than the intrinsic evidence:

First, extrinsic evidence by definition is not part of the patent and does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning. Second, while claims are construed as they would be understood by a hypothetical person of skill in the art, extrinsic publications may not be written by or for skilled artisans and therefore may not reflect the understanding of a skilled artisan in the field of the patent. Third, extrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence. . . . Fourth, there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that could be brought to bear on any claim construction question. . . . Finally, undue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the “indisputable public records consisting of the claims, the specification and the prosecution history,” thereby undermining the public notice function of patents.³⁶

Thus, expert testimony must always be probed for bias, and courts should ensure that any expert whose opinion is offered be subject to cross examination. The chief risk of relying on dictionaries, treatises, and other outside documents is pertinence – there is often a gap between how such outside sources characterize a technology and the way it is presented and claimed in a patent.

³⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (*en banc*).

³⁵ 90 F.3d 1576 (Fed. Cir. 1996).

³⁶ *Phillips*, 415 F.3d at 1318-19.

Nonetheless, extrinsic evidence is an increasingly important source for claim construction. The Federal Circuit is moving away from the view that claim construction is purely a question of law, as was held in *Cybor Corp. v. FAS Techs., Inc.*³⁷ The court appears to be on the verge of recognizing, *en banc*, that claim construction may involve underlying questions of fact, particularly in regard to the assessment of extrinsic evidence.³⁸

Thus, the Federal Circuit is likely to formally rule that there is a role for district court fact-finding in the claim construction process, especially with regard to assessing the credibility of competing expert witnesses. In the meantime, it appears that the Federal Circuit may be informally according such deference.³⁹ Thus, reliance on extrinsic evidence can be an important way for trial courts to bolster the “factual” nature of their findings and promote deferential review on appeal.⁴⁰ What follows are some lessons from post-*Phillips* caselaw as to the appropriate, and inappropriate, roles for extrinsic evidence.

i) Illustrations of Reliance (and Non-reliance) upon Extrinsic Evidence

Where the specification supports two interpretations of a disputed claim, extrinsic evidence can be used to confirm which interpretation is more consistent with what a person having ordinary skill in the art would have understood at the time of invention. For example, in *Conoco Inc. v. Energy & Env'tl. Int'l*,⁴¹ the question was whether a “stable” suspension of polymer required sufficient stability to remain suspended when stored for a long period of time, or just stability at the time the suspension was introduced into a pipeline. The court determined from the intrinsic evidence that the appropriate frame of reference was stability at the time the suspension was introduced into the

³⁷ 138 F.3d 1448 (1998) (*en banc*).

³⁸ See *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039, 1040-41 (Fed. Cir. 2006) (Michel, C.J., dissenting from denial of petition for rehearing *en banc*) (“I believe the time has come for us to re-examine *Cybor*’s no deference rule. I hope that we will do so at our next opportunity, and I expect we will.”); *id.* (Newman, J., dissenting from denial of petition for rehearing *en banc*) (“And if the meaning is recognized as a case-specific finding of fact, appellate review warrants deference to the trier of fact, a deference here lacking.”); *id.* (Rader, J., dissenting from denial of petition for rehearing *en banc*) (“I urge this court to accord deference to the factual components of the lower court’s claim construction.”); *id.* at 1045 (Gajarsa, Lynn, Dyk, concurring in denial of petition for rehearing *en banc*) (stating that reconsideration of *Cybor* may be appropriate in a case “in which the language of the claims, the written description, and the prosecution history on their face did not resolve the question of claim interpretation, and the district court found it necessary to resolve conflicting expert evidence to interpret particular claim terms in the field of the art”); *id.* at 1046 (Moore, J., dissenting from denial of petition for rehearing *en banc*) (“I dissent because I believe this court should have taken this case *en banc* to reconsider its position on deference to district court claim construction articulated in *Cybor*. . .”).

³⁹ See *Ortho-McNeil Pharm., Inc. v. Caraco Pharm.*, 476 F.3d 1321 (Fed. Cir. 2007) (affirming construction based in part on approval of expert testimony that claim term “about 1:5” means “approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1”).

⁴⁰ See *Phillips*, 415 F.3d at 1332 (Mayer, C.J., dissenting) (“In short, we are obligated by Rule 52(a) to review the factual findings of the district court that underlie the determination of claim construction for clear error.”).

⁴¹ 460 F.3d 1349, 1362 (Fed. Cir. 2006).

pipeline. The court confirmed its interpretation against the extrinsic evidence, which indicated that all suspensions eventually separate, and thus that the appropriate time frame for assessing stability is at the time the suspension is introduced into the pipeline.

Tap Pharm. Prods., Inc. v. Owl Pharms., L.L.C.,⁴² is another example of extrinsic evidence being used to decide between two plausible interpretations from the specification. *Tap Pharmaceutical* concerned claims to a composition “comprising a copolymer ... of lactic acid and ... of glycolic acid.” The question was whether the claims were limited to compositions resulting from a polymerization of lactic acid and glycolic acid, or whether the claims also covered the polymer resulting from cyclic precursors that transformed into lactic acid and glycolic acid during polymerization. The district court properly relied on treatises that recognize that copolymers of lactic acid and glycolic acid can be made either by direct polymerization or by ring opening, and on expert testimony that a person of ordinary skill in the art would use the terms “lactic acid” and “glycolic acid” interchangeably with their cyclic analogs.⁴³

Attempts to use extrinsic evidence as the *source* for claim constructions are more problematic. Basing the meaning of claim terms on sources external to the patent raise concerns about the notice function of patents. Thus, when extrinsic evidence is used as the source of claim construction, special care must be taken to ensure that the extrinsic evidence is consistent with the patentee’s own description of the invention. For example, an appropriate use of extrinsic evidence concerned claims to a “scanner,” where the term “scanner” was not defined in the specification, which simply contained one illustrative embodiment having a moving scanner head.⁴⁴ Faced with the question of whether a digital camera qualified as a “scanner,” the court turned to dictionaries and concluded that a scanner required “movement between a scanning element and an object being scanned.”⁴⁵ This definition was appropriate because it tracked what the patentee had disclosed in the specification as being a scanner.⁴⁶

In a more tenuous example, the Federal Circuit approved the use of expert testimony to set numeric limits on a claim. The claim concerned a pharmaceutical composition with a ratio of “about 1:5” for two chemical components.⁴⁷ The court reviewed the intrinsic evidence, including claims directed to other ratios, and experimentation disclosed in the specification directed to a range of ratios, and credited the testimony of an expert who opined that “about 1:5” meant “a ratio up to and including 1:7.1 and a ratio down to and including 1:3.6.” The Federal Circuit credited the expert testimony, which justified this range as appropriate in that it was not statistically different from the claimed ratio of 1:5.⁴⁸

⁴² 419 F.3d 1346 (Fed. Cir. 2005).

⁴³ *Id.* at 1349-50.

⁴⁴ *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1351 (Fed. Cir. 2006).

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326-28 (Fed. Cir. 2007).

⁴⁸ *Id.*

An example of expert testimony that strayed too far afield from the patent disclosures is in *Biagro W. Sales, Inc. v. Grow More, Inc.*,⁴⁹ in which the proffering party sought to use expert testimony to reconceptualize the claims. *Biagro* concerned claims to a fertilizer “wherein said phosphorous-containing acid or salt thereof is present in an amount of about 30 to about 40 weight percent.”⁵⁰ The amount of phosphorus-containing acid actually present in the accused fertilizer product did not meet the levels stated in the claim, but the patentee tried to use expert testimony to argue that the amount of phosphorous-containing acid in the claim limitation should be read to refer to a “chemical equivalent amount,” rather than the amount actually present. In support, the patentee cited fertilizer labeling guidelines and standards and expert declarations, asserting that phosphorus levels in fertilizer are measured by chemically equivalent amounts. This evidence was unpersuasive for the trial court or the Federal Circuit, because *Biagro* could not tie its measurement approach to the patent’s own description of the invention.⁵¹

ii) Conclusory Expert Opinions Should Be Disregarded

Expert opinions should be grounded both in the intrinsic evidence, and as well have support in other independent, reliable sources. Where these criteria are lacking, the expert opinions should not be relied upon. For example, in *Network Commerce, Inc. v. Microsoft Corp.*,⁵² a patentee sought a construction based upon its expert declaration that a claimed “download component” need not contain a boot program. The expert declaration failed to explain why quoted passages from the specification supported his opinion, and failed to support the expert’s conclusion with any reference to industry publications or other independent sources. Accordingly, the declaration was properly disregarded.⁵³

B. A Structured Approach to Claim Construction: Two Stages of Analysis

With that background in place, we are ready to map out the overarching structure of claim construction. Chart 3 presents the two distinct steps. Litigants sometimes skip over the first inquiry – whether (and when) claim construction is necessary – and jump right into the complexities of claim construction. Many courts – through Patent Local Rules⁵⁴ or case management – focus attention on the threshold issues. Before the court confronts the challenge of construing a claim term, it must consider a series of threshold doctrines and principles that determine whether construction is required (as well as the proper timing).

⁴⁹ 423 F.3d 1296 (Fed. Cir. 2005).

⁵⁰ *Id.* at 1302.

⁵¹ *Id.* at 1303.

⁵² 422 F.3d 1353, 1361 (Fed. Cir. 2005).

⁵³ *Id.*

⁵⁴ *See, e.g.*, N. D. Cal. Patent Local Rules.

Chart 3
Claim Construction Flowchart

Step 1: Is Construction of a Claim Term Required?

Step 2: Interpretation of a Claim Term

1. *Step 1: Is Construction of a Claim Required?*

Chart 4 presents the series of threshold issues that the court should consider in determining whether and when interpretation of a claim term is appropriate.

Chart 4

Step 1: Is Construction of a Claim Term Required?

A. Disputed Meaning that Can Be Derived from the Patent/PHOSITA:

1. Disputed Meaning: Is the meaning of the claim term the subject of legitimate disagreement?
2. Meaning Derivable from Patent/PHOSITA: For non-technical terms, is there a special meaning that can be ascertained from the patent?

B. Priority/Discretion/Timing: Courts have broad discretion to limit and phase claim construction

- some courts limit first and usually final *Markman* proceeding to 10 terms
- Court can revisit claim construction; it must eventually construe all legitimately disputed and construable terms before trial
- Means+Function claims (in dispute) must be interpreted to identify corresponding structure, material, or acts.

C. Issue Preclusion: Deference to Prior *Markman* Ruling

- Issue preclusion cannot be applied offensively against a party not represented in prior proceeding; but it can be applied defensively if 4-part test is satisfied.
 - Judicial estoppel can be applied where patentee changes positions
 - Reasoned deference under *stare decisis* principles.

D. Is the Term Amenable to Construction?

- See Table A

a) Is There a Genuine Dispute about the Claim Term?

It is all too common for the parties to propose differing construction but be unable to articulate why the differences matter. Courts generally order a structured meet-and-confer process to address this problem and thereby narrow the number of claim terms requiring the court's resolution.⁵⁵ Holding a brief telephone conference prior to claim construction briefing at which the parties must articulate the basis for the dispute often narrows the number of terms further.

b) Would Claim Construction of the Term Help the Jury?

The point of claim construction is to instruct the jury on what the claim means from the perspective of a person having ordinary skill in the art. For many claim terms, attempting to "construe" the claim language adds little in the way of clarity. Where the perspective of a person having ordinary skill in the art would add nothing to the analysis, there may be no need to construe the terms. Thus, non-technical terms (*e.g.*, "on" or "above" or "surround") and terms of degree (*e.g.*, "approximately" or "about" or "substantially") may not require construction by the court. Where "construing" a claim term would involve simply substituting a synonym for the claim term, it may be appropriate to allow the claim language to speak for itself.

Construction of a term is clearly appropriate in the case of technical terms, where a typical juror would not understand the term without assistance. Of course, in all cases, where the intrinsic and applicable extrinsic evidence provide further meaning to a term (such as disclaimers, descriptions of "the present invention," and claim differentiation), the court should account for such added evidence in the claim construction. But where the intrinsic evidence and extrinsic evidence do not meaningfully add to the definition of a term, it is appropriate (and often preferred) to allow straightforward claim language to stand as-is.

c) Is Claim Construction of the Term a Priority?

Not all terms need to be construed in the initial *Markman* hearing. Courts increasingly focus the initial *Markman* hearing on about 10 "priority" terms, with the expectation that resolving the key terms may dispose of the case. Courts are free to revisit any remaining disputes later in the case, but are required to construe all disputed claim terms before the case is submitted to the jury. How courts wish to balance the priorities of early decision-making, versus overall completeness, will depend on the circumstances of the case.

d) Has the Term Been Construed Before?

There may have been prior proceedings involving the same patents-in-suit or closely related patents. Where there has been a prior construction, the court needs to

⁵⁵ See Peter S. Menell, Lynn Pasahow, James Pooley, Matthew D. Powers, Patent Case Management Judicial Guide §2.1.1 (Federal Judicial Center 2009) (hereinafter cited as "PCMJG"); Northern District of California, Pat. L. R. 3; *infra* Section III.A.

learn the context of the prior proceedings to determine the impact of doctrines of issue preclusion, claim preclusion, judicial estoppel, and *stare decisis*. Although the prior proceedings may not be binding in the present litigation, the court should hear from parties to determine the factors that determine any preclusive effect or basis for according deference to the prior claim construction.⁵⁶ These important considerations are discussed in Section II.F.

Similarly, in the increasingly common scenario where the patent-in-suit becomes the subject of patent reexamination proceedings, the district court may wish to stay claim construction until those collateral proceedings are resolved.

e) Is the Term Amenable to Construction?

As illustrated in Table A, claim terms can usefully be categorized as three potentially overlapping general types: (1) lay terms; (2) terms of degree; and (3) technical terms (including seemingly lay terms which have a different meaning in a technical context). As discussed previously,⁵⁷ not all terms in a claim require construction by the court. It can be improper to construe terms that do not have special meaning that can be derived from the patent. A fourth category – means-plus-function claim terms – must be construed by the court if their meaning is disputed so as to determine corresponding structure, materials, or acts from the specification. We discuss this special category in section II.D.

⁵⁶ See *infra* Section II.F.

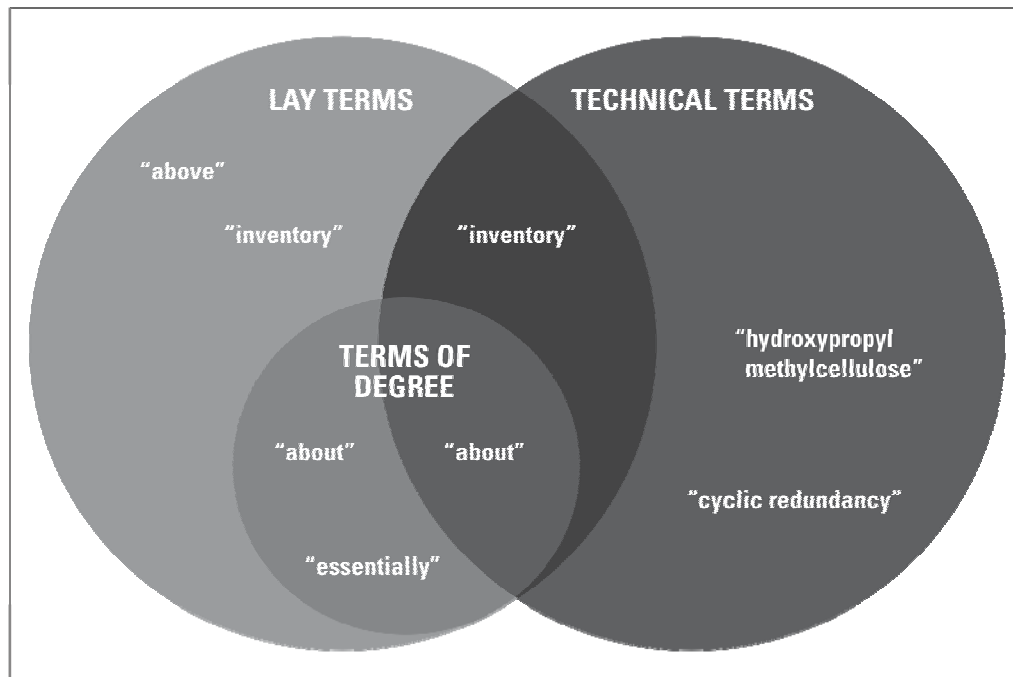
⁵⁷ See *supra* Section II.C.1.

Table A Typology of Claim Terms			
Type	Lay Terms	Terms of Degree	Technical Terms
Examples	a, above, below, comprising, in, surround, to	approximately, essentially, substantial, dose	hydroxypropyl, methylcellulose, cyclic redundancy, oligonucleotide
Amenability to Claim Construction	<ul style="list-style-type: none"> • such terms are often understood by fact-finder; to construe arguably trenches upon jury's domain • but such terms may have conventional / established meaning in the technical field 	<ul style="list-style-type: none"> • such terms are often understood by jury; to construe arguably trenches upon jury's domain • such terms are inherently contextual • must be careful not to inappropriately import limitations from specification • but must base interpretation on standard set forth in the spec: if no basis set forth in spec, then no basis for construction 	<ul style="list-style-type: none"> • Must be interpreted if meaning is disputed; PHOSITA perspective is essential

As reflected in Chart 5, the three types of claim terms are not mutually exclusive and the question of which category is most appropriate will not always be evident based solely on a reading of the claim. The court will need to examine the intrinsic record in making this assessment. Some plain English terms can have technical meanings in particular fields. For example, the word “inventory” can, depending upon on the context, be considered a lay term (“an itemized list of merchandise or supplies” or a “detailed list of all items in stock”) as well as more specialized meaning in the fields of dry cleaning process inventions.⁵⁸

⁵⁸ See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed.Cir. 1995) (*en banc*) (interpreting “inventory” as used in patent claim to mean “articles of clothing” rather than cash or inventory receipts), *aff’d*, 517 U.S. 370 (1996).

Chart 5



Some technical terms, such as “hydroxypropyl methylcellulose,” may well be self-evident. Terms of degree, however, can be ambiguous. For example, the word “about” can obviously have a non-technical meaning. But when used in describing the scope of a particular invention, it may well take on meaning that is delimited by intrinsic, and possibly even extrinsic, evidence.⁵⁹

i) Lay Terms

Patent law has long struggled with how precisely claims should be construed. Many claim terms are inherently imprecise. These include terms of degree, such as “substantially”, “about”, and “approximately”, which we deal with separately below because they have been the focus of substantial jurisprudence. District courts are commonly asked to give lay terms additional clarity in claim construction. When imprecise language should be left to the jury remains a subtle, confounding, and thorny aspect of patent adjudication.

Efforts to construe lay terms with precision are in tension with *Markman*’s division of authority between judges and juries.⁶⁰ It is the court’s role to construe the claims, while it is the jury’s role to apply that construction to an accused device or piece of prior art. That is, “Step 1” of the infringement analysis is to construe the claims, and

⁵⁹ See *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326-28 (Fed. Cir. 2007).

⁶⁰ See *Markman*, 517 U.S. at 384.

“Step 2” is to apply the construed claims to a specific set of facts. Construing terms of degree with more precise language may be error, not only because it “imports limitations” from the specification into the claims, but also because it can impinge on the role of the jury in resolving the question of infringement or validity. The Federal Circuit has recently observed that “line-drawing” questions over what meets the scope of the claims is appropriately left to the jury in some contexts.⁶¹

One the other hand, the Federal Circuit’s decision in *O2 Micro Int’l. Ltd. v. Beyond Innovation Tech. Co., Ltd.*,⁶² states that although “district courts are not (and should not be) required to construe *every* limitation present in a patent’s asserted claims,”⁶³ the court must interpret the scope of any claim term for which the parties have presented a “fundamental dispute.”⁶⁴ In that case, the district court had declined to construe the term “only if” on the ground that it has a well-understood meaning that is capable of application by the jury without judicial interpretation. The parties in the case agreed that “only if” had a common meaning, but the parties disputed the scope of the claim based on this phrase and argued that dispute to the jury. The Federal Circuit vacated the jury verdict and permanent injunction and remanded the case for reconsideration. If this decision remains valid, the prudent course for district courts will be to construe any claim term – including lay words or phrases – for which there is a legitimate dispute. Nonetheless, courts should be skeptical of construing lay terms for which neither party can produce intrinsic evidence indicating a specialized meaning.

ii) Terms of Degree

Determining how far courts should go in construing lay terms arises with particular frequency in the context of terms of degree, such as “about”, “approximately”, and “essentially”. The issues are whether such words are used in a technical sense or otherwise derive meaning from the specification.

When construing a term of degree, a key question is whether the intrinsic evidence provides some standard for measuring that degree.⁶⁵ Often there may be no such standard, and the Federal Circuit has frequently ruled that it would be error to impose a more exact construction on terms of degree.⁶⁶

⁶¹ See *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 806 (Fed. Cir. 2007) (“[A] sound claim construction need not always purge every shred of ambiguity. The resolution of some line-drawing problems-especially easy ones like this one-is properly left to the trier of fact.”).

⁶² 521 F.3d 1351 (Fed. Cir. 2008).

⁶³ *Id.* at 1362 (emphasis in original).

⁶⁴ *Id.* at 1362.

⁶⁵ *Exxon Research and Eng’g Co. v. United States*, 265 F.3d 1371, 1381 (Fed. Cir. 2001) (“When a word of degree is used the district court must determine whether the patent’s specification provides some standard for measuring that degree.”).

⁶⁶ See, e.g., *Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 907 (Fed. Cir. 2005) (“But the definition of ‘substantially flattened surfaces’ adopted by the district court introduces a numerical tolerance to the flatness of the gripping area surfaces of the claimed applicator [which] contradicts the recent precedent of this court, interpreting such terms of degree.”) (citing *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1361 (Fed. Cir. 2003) and *Anchor Wall Sys. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1311 (Fed. Cir. 2003)).

A standard for measuring a term of degree may come from the patent specification and the working examples. As noted above, a recent case concerns construction of the term “about 1:5,” referring to a pharmaceutical composition having a particular ratio of two components.⁶⁷ The Federal Circuit approved its construction as “a ratio up to and including 1:7.1 and a ratio down to and including 1:3.6.”⁶⁸ This construction was derived from the specification, which contained other examples of ratios that were tested and claimed, and from expert testimony, declaring that a range of 1:7.1 and a ratio down to and including 1:3.6 was not statistically different from the stated ratio of 1:5. This case may represent the high-water mark in terms of extrapolating examples from the specification and imposing numerical limits on claim scope, and may suggest a willingness (as discussed above) to credit district court fact-finding based on extrinsic evidence. By contrast, other cases have refused to assign numerical bounds to the scope of the claim term “about.”⁶⁹

A standard for measuring a term of degree may come from the applicant’s statements distinguishing the prior art. For example, in *Glaxo Group Ltd. v. Ranbaxy Pharms, Inc.*,⁷⁰ the Federal Circuit found that the claim phrase “essentially free of crystalline material” could be properly construed as requiring a crystalline content of less than 10%, based in part on the applicant’s statements describing the prior art. Similarly, in *Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*,⁷¹ the Federal Circuit approved construing the term “substantially water free” as having a water content below 5% in accordance with statements during prosecution history distinguishing a prior art reference having a water content from 5% to 30%.

Terms of degree frequently do not warrant a more precise construction, and it is often appropriate to pass imprecise terms to the jury in its role as fact-finder. However, the intrinsic evidence may suggest an appropriate standard for providing a more concrete measure of claim scope. The right approach is the one that recognizes the tension between the goals of clarifying claim scope and of avoiding imposing extra limitations on claim language, and then carefully assessing the objective measures that can be used to give standards for the claim terms.

iii) Technical Terms

The easiest call relates to technical terms. When these are disputed, there is no doubt that construction by the court is required. As reflected in Chart 5, however, some

⁶⁷ *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326-28 (Fed. Cir. 2007).

⁶⁸ *Id.* at 1328.

⁶⁹ *See* *Modine Mfg. Co. v. USITC*, 75 F.3d 1545, 1551 (Fed. Cir. 1996) (“It is usually incorrect to read numerical precision into a claim from which it is absent... it is a question of technologic fact whether the accused device meets a reasonable meaning of ‘about’ in the particular circumstances.”), *overruled in part* by *Fresenius Med. Care Holdings, Inc. v. Baxter Int’l, Inc.*, 2006 U.S. Dist. LEXIS 36788 (N.D. Cal. May 24, 2006).

⁷⁰ 262 F.3d 1333, 1337 (Fed. Cir. 2001).

⁷¹ 249 F.3d 1341, 1347 (Fed. Cir. 2001).

lay terms – such as “about” – might have a technical meaning in the context of the patent and hence will require interpretation by the court.⁷²

2. *Step 2: Interpretation of Claim Language*

a) General framework

Once it is determined that claim language must be construed and is ripe for construing, the court must then apply the various substantive rules to the claim language to arrive at the proper construction. Before discussing the disputes that commonly arise in claim construction, it will be useful to state the principles that are generally *not* in dispute. The *Phillips en banc* decision is the most recent and authoritative attempt by the Federal Circuit to distill these principles.

A “bedrock principle” of patent law is that “the claims of a patent define the invention to which the patentee is entitled the right to exclude.”⁷³ Courts must interpret claims from the perspective of “how a person of ordinary skill in the art understands a claim term,”⁷⁴ in the context of the patent.⁷⁵ This frame of reference “is based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art.”⁷⁶ Often, other evidence will provide context for characterizing the person having ordinary skill in the art. Courts look to the meaning that the term would have to a person of ordinary skill in the art “at the time of the invention, *i.e.*, as of the effective filing date of the patent application.”⁷⁷ The “effective filing date” is the earlier of the actual filing date or the filing date of an application from which priority is accorded. This is quite significant (and can generate evidentiary challenges) because the meaning of scientific and technical terms can change significantly during the life span of a patent. In the field of digital technology, for example, change can occur unbelievably rapidly given the exponential rate of advance in computer technology. Litigation over patent claims can occur multiple technological generations after the patent claim term was drafted.

Claim interpretation is highly context-dependent. The person of ordinary skill in the art “is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field.” The meaning that this person would give to claim language, after having considered the intrinsic and extrinsic evidence, is the “ordinary meaning” of the claim terms. This ordinary meaning is considered to be the “objective baseline” for claim construction. Interpreting patent claims thus requires the court to consider “the same resources as would that person, *viz.*, the patent specification and the prosecution

⁷² See *O2 Micro Int’l. Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (failure to construe the term “only if” was error where parties disputed its scope).

⁷³ *Phillips*, 415 F.3d at 1312.

⁷⁴ *Id.* at 1313.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ *Id.*

history.”⁷⁸ The patent and its prosecution history “usually provide[] the technological and temporal context to enable the court to ascertain the meaning of the claim to a person having ordinary skill in the art at the time of the invention.”⁷⁹ Thus, patent claims are to be interpreted in light of this “intrinsic” evidence (*i.e.*, the patent specification and its prosecution history) as well as pertinent “extrinsic” evidence (*i.e.*, evidence showing the usage of the terms in the field of art).

b) Claim Construction Methodology

As noted above, *Phillips* holds that the “ordinary meaning” of a claim term is the “objective baseline” for construing patent claims. This is the perspective that the court must adopt when interpreting claim language. The phrase “ordinary meaning” is deeply engrained in the caselaw, but it is a slippery concept. The “ordinary meaning” of a term is what a court arrives at after doing the work of reviewing the specification, the other claims, the file history, the cited prior art, and the pertinent extrinsic evidence. Thus, the “ordinary meaning” is not the first step in the analysis. Nor is it the endpoint, as *Phillips* and its progeny have confirmed – the proper construction is frequently not a term’s ordinary meaning. Thus *Phillips*’ identification of ordinary meaning as the “objective baseline” puts tremendous emphasis on this term, which can create unfortunate confusion and error.

Focusing on “ordinary meaning” has other shortcomings. The term “ordinary meaning” tends to drive the claim construction analysis to the meaning of a single word, or at most to a short phrase. But atomizing the dispute down to a word, or a short phrase, often does not make sense. Most patent disputes go to the overall approach of a patent claim, and focusing on a single word tends to lose the forest for the trees. When the overall approach of a patented invention is the central issue in a patent case, there may be no “ordinary meaning” that attaches. Trying to boil down the overall approach of an invention to a few selected words often misses the point of the dispute. There is a real danger that resolving a dispute over the meaning of a particular claim term will be mistaken for a resolution on the merits of a more fundamental infringement or validity dispute.

A more simple and useful description of the claim construction process starts with the “initial understanding” of claim language. This is the understanding that comes from the first reading of the claims, and from getting a sense as to what the patentee is trying to claim. This “initial understanding” may be focused on a particular claim term of interest, or may take into consideration larger blocks of claim text. The endpoint of the analysis is the “proper construction.” Between this starting point and this ending point, is an analytical framework represented below by a black box, as follows:

⁷⁸ *Id.*

⁷⁹ *Phillips*, 415 F.3d at 1313 (quoting *V-Formation, Inc. v. Benneton Group SpA*, 401 F.3d 1307, 1310 (Fed. Cir. 2005)).

Chart 6
Claim Construction Process: Starting Point and Destination

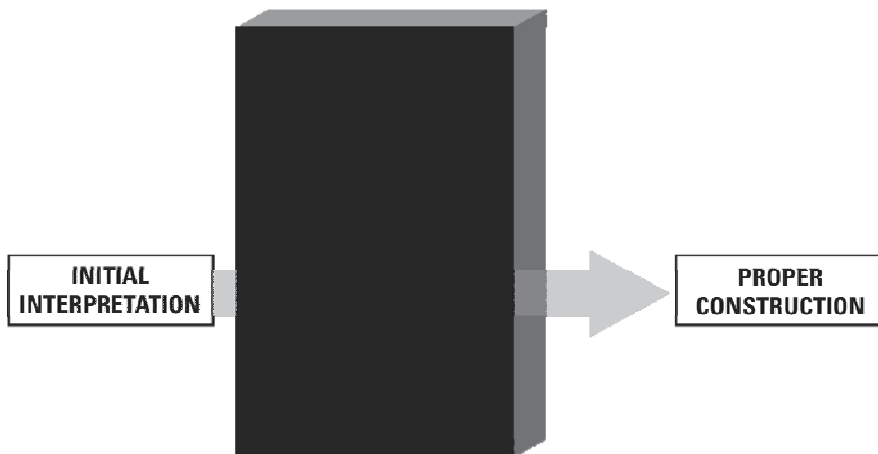
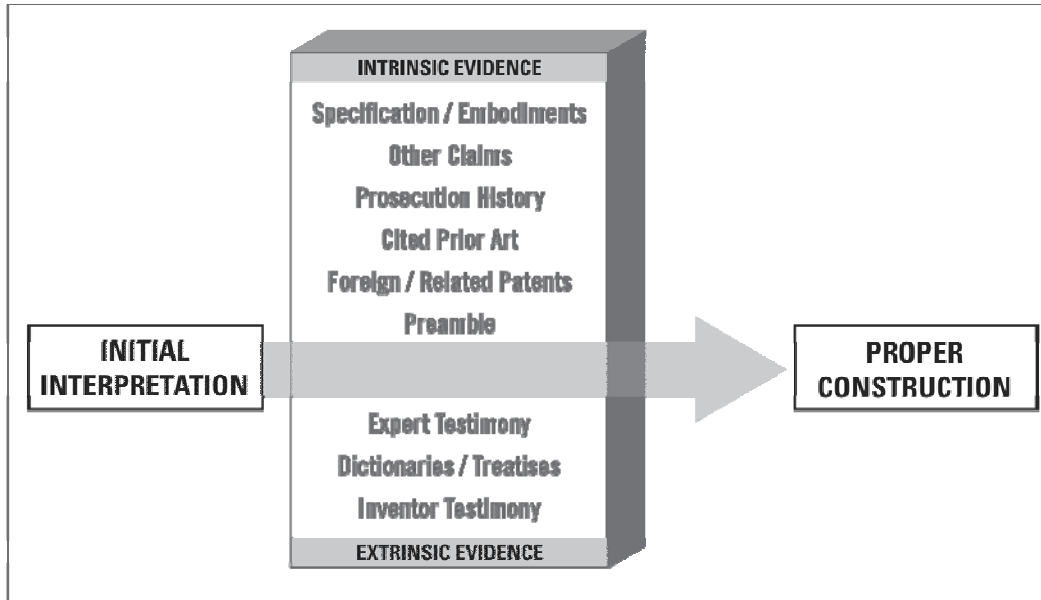


Chart 6 illustrates the starting and ending points for claim construction. The first step is to consider the claim itself, and to account for the initial understanding the court ascribes to it. If the claim language employs common, non-technical language, its scope will immediately begin to take on meaning. If the claim language term is technical, the court may ascribe little if any meaning to the term without further review of the patent and surrounding evidence.

The ultimate destination for this process is the “proper construction.” Arriving at the proper construction requires filtering the claim language at issue through a number of rules of claim construction, taking into consideration the pertinent statements in the intrinsic and extrinsic evidence. This process requires that the court view the evidence from the appropriate perspective of a person of ordinary skill in the art, from the relevant time period. The rules to be taken into consideration include the doctrine of claim differentiation, the rules for reviewing the specification for meanings of claim terms, prosecution history estoppel, a review of related patents, etc. The various rules that the court must take into analysis are sometimes contradictory, and typically involve a balancing of considerations. Chart 7 illustrates the principal points of analysis :

Chart 7
Claim Construction Process: Inside the Black Box



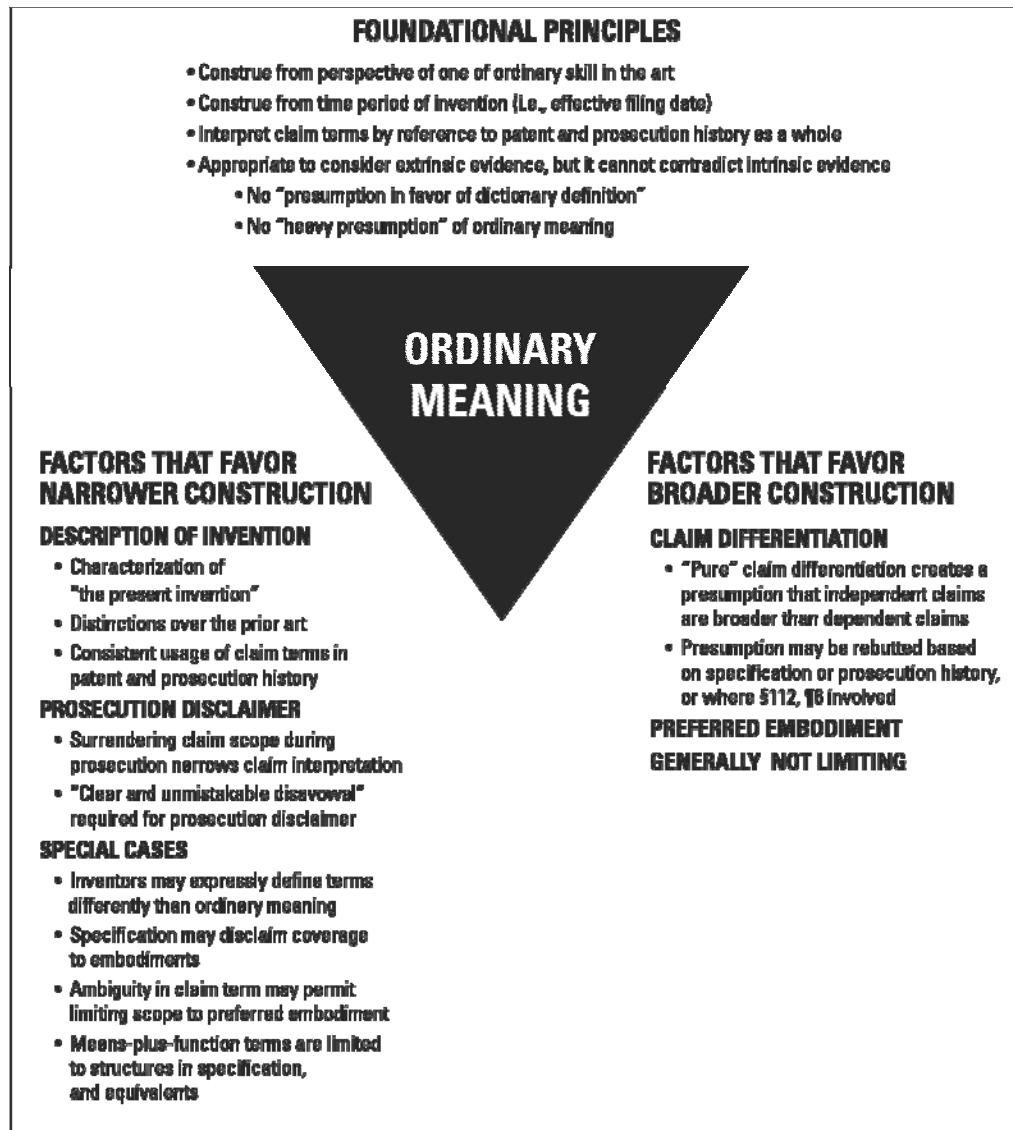
In Chart 7, the various factors that govern claim construction are vertically aligned in roughly the order of persuasiveness, with intrinsic evidence at the top, and extrinsic evidence below. The Federal Circuit has often noted, and the *Phillips* decision affirms, that the specification is the “primary basis for construing the claim” and is in most cases “the best source for understanding a technical term.” However, there is no fixed hierarchy of claim construction rules -- “there is no magic formula or catechism for conducting claim construction. Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequence, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence.”

The parties’ briefing will inform the court which sources of evidence are most relevant to interpreting the claim and what specific evidence bears on the proposed interpretation. If no evidence is adduced or if the evidence cited is not illuminating, then the court’s initial interpretation will probably be the proper construction. More commonly, the parties will call attention to various sources of meaning from the specification, file wrapper, or extrinsic sources. We explore the jurisprudence relating to this process below.

Note that the term “ordinary meaning” is not reflected in Chart 7. This viewpoint is not the first step in the analysis, and it is not the endpoint. It is a helpful reference point, and probably occurs somewhere along the path. The “ordinary meaning” might be determined after doing the work of reviewing the pertinent intrinsic and extrinsic evidence, but before the final construction is rendered.

This ordinary meaning then might be found to be the proper construction, or the proper construction may be broader, or narrower, than the ordinary meaning based on the application of the various claim construction doctrines. Some of these doctrines tend to narrow claim scope, while others broaden it. These doctrines push and pull on the concept of “ordinary meaning,” and drive the final construction. Chart 8 reflects this dynamic. The principles set forth at the top of the chart are foundational principles of claim construction which ground the inquiry. The factors on the left tend to narrow the construction (but may in some cases broaden it), which the factors on the right tend to broaden the construction:

Chart 8
Functional Landscape of Claim Construction Principles and Doctrines



The Appendix to this article provides a chart illustrating cases that narrow or broaden ordinary meaning based upon the various doctrines in play. We discuss these doctrines below.

c) Misuse of “Ordinary Meaning”

Phillips’ main contribution to claim construction law was reining in the *Texas Digital* line of cases. *Texas Digital* and its progeny had put undue emphasis on dictionaries as defining the “ordinary meaning” of claim terms. *Texas Digital* established a “heavy presumption” that the “ordinary meaning” from dictionaries applies, and that this presumption could only be overcome by explicit definitions in the specification, or by clear disavowals of claim scope.⁸⁰ Following *Texas Digital*, the Federal Circuit routinely referred to a “heavy presumption of ordinary meaning,” which became a mantra in the years leading up to *Phillips*.

Phillips explicitly rejected statements in *Texas Digital* that had been interpreted as elevating dictionary definitions above statements in the patent documents. This was an important clarification of claim construction law, and has largely succeeded in putting to rest *Texas Digital*’s over-emphasis on dictionaries. However, *Phillips* was perhaps not as clear as it could have been in silencing the *Texas Digital*-era statement that there is a “heavy presumption of ordinary meaning.” Lawyers and district courts have largely overlooked an important and fundamental shift in Federal Circuit law that has emerged since *Phillips*. Whereas the Federal Circuit routinely referred to this “heavy presumption of ordinary meaning” prior to *Phillips*, this “heavy presumption” is all but gone from the Federal Circuit’s opinions. Indeed, since *Phillips* issued, the Federal Circuit has referred to this “heavy presumption of ordinary meaning” on only two occasions, which may be viewed as outliers, and which themselves rely on pre-*Phillips* law.⁸¹ This appears to have been a deliberate shift by the Federal Circuit to drop a powerful presumption from claim construction law. This important change in Federal Circuit law that has gone largely unnoticed.

It is unfortunate that the Federal Circuit has failed to expressly disavow the “heavy presumption of ordinary meaning.” Lawyers have persisted in citing pre-*Phillips* caselaw to argue this standard, and district courts have all-too-frequently adopted this obsolete rule. The result is that many district courts are unduly wedded to what they perceive to be the “ordinary meaning” of a claim term. As the Federal Circuit’s post-*Phillips* caselaw makes clear, courts may depart from ordinary meaning in arriving at the proper construction. It is appropriate to depart from the “ordinary” meaning where the intrinsic evidence persuasively demonstrates “what the inventors actually invented and intended to envelop with the claim.”⁸² In sum, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention

⁸⁰ *Id.* at 1202.

⁸¹ *Elbex Video, Ltd. v. Sensormatic Elecs. Corp.*, 508 F.3d 1366, 1371 (Fed. Cir. 2007); *Epistar Corp. v. International Trade Comm’n*, 566 F.3d 1321, 1334 (Fed. Cir. 2009).

⁸² *Phillips*, 415 F.3d at 1316 (quoting *Renishaw*, 158 F.3d at 1250).

will be, in the end, the correct construction.”⁸³ This standard is lower than the “explicit definition” or “clear disavowal” standard that the court used to insist upon for deviating from ordinary meaning.

d) Interpreting Claim Language in Light of the Specification

A fundamental challenge in patent law is how to construe claims “in view of the specification.”⁸⁴ Tension arises from the competing principles that provide, on the one hand, that “the claims made in the patent are the sole measure of the grant,”⁸⁵ and, on the other hand, that a claim term “can be defined only in a way that comports with the instrument as a whole.”⁸⁶ When, and to what extent, the terse wording of patent claims should be interpreted in light of the inventor’s other statements in the specification gives rise to a common tension in patent litigation. Indeed, *Phillips* arose out of precisely this type of dispute. And since *Phillips*, the Federal Circuit has continued to acknowledge the “tightrope” that district courts must walk when construing claims in light of the specification.⁸⁷

There are several common sources of meaning for claim construction: the preferred embodiments; the manner in which the patentee distinguishes the prior art; the usage of the claim term elsewhere in the patent document (including other claims); disclaimers within the prosecution history; and the preamble. Furthermore, as explored in subsequent sections, some commonly used claim terms have developed greater clarity through patent drafting convention and judicial decisions.

i) The Role of Preferred Embodiments in Claim Construction

Patent specifications typically describe the claimed invention through the use of illustrations or example. In the jargon of patent law, they are characterized as “preferred embodiments.” Often the specification will recite a few or even many preferred embodiments of an invention. Claim construction disputes often center on the import of such illustrations: (1) Must each claim encompass the preferred embodiments?; (2) Are the claims limited to the preferred embodiments?; (3) Does the number or range of embodiments affect the breadth of the claims?; (4) Does ambiguity in a claim term limit its scope to the preferred embodiments?; (5) Do characterizations of embodiments as “the invention” or “the present invention” limit the patent accordingly?; (6) Does the patent distinguish over the prior art in a way that defines the invention?; and (7) Does the patent provide a consistent usage of claim terms to clarify their meaning?

1. Claim Scope Generally Includes Preferred Embodiments

The patent claims should generally be construed to encompass the preferred embodiments described in the specification, and it is generally error to adopt a

⁸³ *Id.*

⁸⁴ *Phillips*, 415 F.3d at 1315.

⁸⁵ *Phillips*, 415 F.3d at 1312 (quoting *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961)).

⁸⁶ *Phillips*, 415 F.3d at 1316 (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 389 (1996)).

⁸⁷ *See Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1373 (Fed. Cir. 2007).

construction that excludes them.⁸⁸ Important exceptions to this oft-cited rule apply – such as where there is a disclaimer in the specification or prosecution history,⁸⁹ an embodiment is directed to only a subset of claims,⁹⁰ the claims evolved significantly during prosecution, or the ordinary meaning simply cannot be stretched to encompass the embodiment.⁹¹

There are the two primary scenarios in which a claim can properly be construed in a way that excludes an embodiment: (1) where a change occurs in the file history – i.e., the specification remains static during prosecution but the applicant disclaims some claim scope that she originally sought during prosecution; and (2) where the specification contains and claims multiple embodiments, a particular claim may not cover a particular embodiment because other claims do.

2. Is the Patent Limited to the Preferred Embodiments?

A common dispute is whether the claim scope should be limited to the embodiments. The mere fact of a particular embodiment being taught (or even “preferred”) is generally not sufficient to justify limiting otherwise broad claim scope to the particular embodiment taught.⁹² The mere fact that the disclosed embodiments of a patented invention have a certain feature does not, by itself, justify limiting the scope of the claims to what is disclosed in the specification. Rather, the fact that the preferred embodiment teaches a certain configuration is just one factor that must be weighed along with other factors such as the clarity of the claim language, the specification’s descriptions of the claimed invention, its statements distinguishing the invention from the prior art, and the consistent and uniform usage of claim terms. Other contributing factors include the applicant’s statements to the Patent Office during patent prosecution and the doctrine of claim differentiation. Depending on the strength of these other factors, the scale may tip so that the claim is limited to the embodiment disclosed in the specification.

The *Phillips* court acknowledged that “there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from

⁸⁸ See *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (“[A] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.”), quoted in *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007).

⁸⁹ See *Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1277 (Fed. Cir. 2008); *N. Am. Container, Inc. v. Plastipak Packaging, Inc.*, 415 F.3d 1335, 1345-46 (Fed. Cir. 2005); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1344 (Fed. Cir. 2001); see also III.C.2.c.

⁹⁰ See *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379 (Fed. Cir. 2008).

⁹¹ See *id.*

⁹² See, e.g., *Agfa Corp. v. Creo Prods., Inc.*, 451 F.3d 1366, 1376-77 (Fed. Cir. 2006) (finding that a claimed “stack” of printing plates was not limited to the particular horizontal stack shown in the specification); *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1306-07 (Fed. Cir. 2006) (finding that a claimed “geometry” of orthodontic teeth was not limited to the geometries of orthodontics shown in the specification); *Acumed LLC v. Stryker Corp.*, 483 F.3d 800 (Fed. Cir. 2007) (finding that a claimed “transverse” hole in a bone nail was not limited to the particular “perpendicular” orientation shown in the specification).

the specification.”⁹³ The Federal Circuit suggested that courts can reasonably and predictably discern this line by focusing on how a person of ordinary skill in the art would understand the claim terms.⁹⁴ The Federal Circuit has specifically rejected the contention that a court interpreting a patent with only one embodiment must limit the claims of that patent to that embodiment.⁹⁵

After reading the specification from the perspective of a person of ordinary skill in the art, the patentee’s usage of a term within the specification and claims will sometimes make the distinction between a specification meant to set out specific examples of the invention to disclose how to make and use it and one in which the claims and embodiments are meant to be strictly coextensive.⁹⁶ Nonetheless, claim drafters routinely avoid providing a clear distinction between embodiments that define the invention as opposed to merely illustrating it so as to preserve later flexibility regarding patent scope. In doing so, they may get the benefit of a narrow interpretation during prosecution (which may enhance the chances of allowance) while preserving the option asserting a broad interpretation after the patent issues in enforcement actions. Thus, the “fine line” to which the Federal Circuit refers is often blurred.

3. Does the Number and/or Range of Embodiments Affect the Scope of the Claims?

Disputes over how broadly to construe claims in light of the specification trace back to the patent drafter. The patent drafter is the “least cost avoider” in terms of creating a document that can be readily understood and relied on by the public and any courts that may have to interpret it.⁹⁷ Scant descriptions of the invention may not necessarily be limiting, but it is uniquely in the power of the patentee to avoid close calls of claim interpretation by clear descriptions, backed by multiple embodiments, of the full scope of the claimed invention. Just as empirical scientists will provide multiple data points so as to gauge the limits or reach of their theories, it might reasonably be expected that patentees should likewise express inventions of an empirical nature in a number and range of embodiments to convey fully the scope of the claimed invention to the public. Where the patentee provides but one or a few closely situated embodiments, then courts

⁹³ 415 F.3d at 1323 (quoting *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186-87 (Fed.Cir.1998)).

⁹⁴ *Id.*

⁹⁵ *Id.* (construing *Gemstar-TV Guide*, 383 F.3d at 1366).

⁹⁶ *Phillips*, 415 F.3d at 1323.

⁹⁷ *Cf.* Joseph Scott Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 Lewis & Clark L. Rev. 177, 183 (2005) (suggesting that that the Patent Office could improve claim construction through enhanced disclosure requirements, including that “that every applicant state on the face of any patent (a) the field of art to which the claimed invention pertains; (b) all problems that the claimed invention helps solve; (c) a lexicon of all claim terms to which the applicant gives a meaning other than its accustomed meaning to people having ordinary skill in the pertinent art; and (d) a list of preferred objective reference sources, such as technical treatises and dictionaries (general or specialized), to which an interested reader should refer to learn about the ordinary meaning of the remaining claim terms to a person having ordinary skill in the art.).

have relatively little basis for determining boundaries of a claim. Even though a claim is not ordinarily limited to a particular disclosed embodiment, the number and range of embodiments ultimately affects the scope that can be supported. Proper claim drafting will reduce the burden of, uncertainty surrounding, and need for claim construction, but claim drafters do not always perceive this to be to their advantage.

It may be somewhat ironic, therefore, that claim construction often affords patents supported by just a few or maybe even a single embodiment with potentially broader scope (ordinary meaning) than more fully illustrated patents. Without much to go on, the court in the former case is often left with simply the plain language. The principal countervailing force confronting the patentee – the risk that the claim will fail the written description requirement – does not exert much effect as it is often difficult to prove this basis for invalidity. (The written description doctrine is particularly subtle and, as a jury issue, it is fraught with uncertainty.⁹⁸) By contrast, patents that are more fully illustrated provide a clearer basis for construing (and, in some cases, circumscribing) the scope of the claims. A more balanced middle ground would be to consider the lack of any significant range of illustrative embodiments to be a factor in construing claims based on an empirical foundation. Just as an empirical theory supported by just a single or few examples will be narrow, so a patent supported by a single or narrow range of embodiments should, all other factors the same, be understood more narrowly. Such an approach would have the benefit of providing patent drafters with greater incentive to articulate the boundaries of the claimed invention. By contrast, claims based upon a conceptual or theoretical foundation may not require disclosure of multiple embodiments to prove their validity or delineate their scope.

4. Does Ambiguity in a Claim Term Limit its Scope to Preferred Embodiment(s)?

When the claim language is ambiguous, courts look to the specification to determine a reasonable interpretation.⁹⁹ In *Comark Communications, Inc. v. Harris Corp.*,¹⁰⁰ the Federal Circuit observed that interpreting claim language in light of the specification is proper when a term is “so amorphous that one of skill in the art can only reconcile the claim language with the inventor's disclosure by recourse to the specification.” At the same time, the court cautioned against reading limitations from the specification into the claims (as opposed to interpreting claim language in light of the specification) and declined to do so in that case.¹⁰¹ Nonetheless, courts have on occasion

⁹⁸ See Mark D. Janis, On Courts Herding Cats: Contending With the “Written Description” Requirement (And Other Unruly Patent Disclosure Doctrines), 2 Wash. U. J.L. & Pol’y 55 (2000).

⁹⁹ See *Rexnord Corp. v. Laitrop Corp.*, 274 F.3d 1336, 1343 (Fed. Cir. 2001) (“[I]f the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained by one of ordinary skill in the art from the language used, a court must look to the specification and file history to define the ambiguous term in the first instance.”) (internal marks omitted).

¹⁰⁰ 156 F.3d 1182, 1187 (Fed. Cir.1998).

¹⁰¹ *Id.*

limited claim terms to the preferred embodiments where there is no other way of grounding the ambiguous language.¹⁰²

ii) Characterizations of “The Invention” or “The Present Invention”

When the patentee uses descriptive terms such as “the invention” or “the present invention” to describe what is claimed, then those descriptive embodiments may be definitional. For example, *Honeywell International, Inc. v. ITT Industries, Inc.*,¹⁰³ concerned claims to a “fuel injection system component.” Even though the ordinary and customary meaning of a “fuel injection system component” is not limited to a fuel filter, the Federal Circuit found that the proper construction was narrower than that customary meaning and should be limited to a fuel filter because all the disclosed embodiments disclosed only fuel filters and the specification repeatedly described the fuel filter as “this invention” and “the present invention.” Applying *Phillips*, the court found that there was no need to show that the inventor had “disavowed or disclaimed scope of coverage,” as *Texas Digital* had previously set as the standard.¹⁰⁴ Rather, the Federal Circuit noted, given the repeated descriptions in the patent specification of “the invention,” that “[t]he public is entitled to take the patentee at his word and the word was that the invention is a fuel filter.”¹⁰⁵ The fact that a specification discloses only a single embodiment does not, by itself, compel limiting claim scope to that embodiment.¹⁰⁶ There must be additional evidence beyond the disclosure of a single embodiment to justify narrowing a construction to that embodiment.¹⁰⁷ However, the fact that only a single embodiment is shown is a factor that, when taken into consideration with the patentee’s description of the invention, may show that the inventor only intended to claim a particular feature as his invention.¹⁰⁸

¹⁰² See, e.g., *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371 (Fed. Cir. 2005)

¹⁰³ 452 F.3d 1312, 1318 (Fed. Cir. 2006).

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*; See also *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1367-68 (Fed. Cir. 2007) (limiting claim term “composite composition” to pellets in light of statements in specification that are “not descriptions of particular embodiments, but are characterizations directed to the invention as a whole”); *Microsoft Corp. v. Multi-Tech. Sys., Inc.*, 357 F.3d 1340, 1348 (Fed. Cir. 2004) (finding that statements in common specification serve to limit claim language because they “are not limited to describing a preferred embodiment, but more broadly describe the overall inventions of all three patents”); *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1370 (Fed. Cir. 2003) (“[T]his court looks to whether the specification refers to a limitation only as a part of less than all possible embodiments or whether the specification read as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment.”).

¹⁰⁶ *Phillips*, 415 F.3d at 1323.

¹⁰⁷ *Agfa Corp. v. Creo Prods. Inc.*, 451 F.3d 1366, 1376-77 (Fed. Cir. 2006).

¹⁰⁸ See *Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006) (limiting scope of “fuel injection system component” to a “fuel filter” because “[t]he written description’s detailed discussion of the prior art problem addressed by the patented invention, viz., leakage of non-metal fuel filters in EFI systems, further supports the conclusion that the fuel filter is not a preferred embodiment, but an only embodiment.”).

iii) Distinctions Over the Prior Art

As with descriptions of “the invention,” the patentee’s manner of distinguishing her invention over the prior art may be definitional. That is, the specification’s emphasis on the importance of a particular feature in solving the problems of the prior art is an important factor in defining the claims. These statements distinguishing the claimed invention from the prior art go to the heart of *Phillips*’ instruction to construe claims consistent with a “full understanding of what the inventors actually invented.”¹⁰⁹ For example, in *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*,¹¹⁰ the Federal Circuit affirmed the construction of “host interface” as a “direct parallel bus interface.” Among the dispositive factors in this narrow construction were that the only embodiment disclosed was a direct parallel bus interface and that “the specification emphasizes the importance of a parallel connection in solving the problems of the previously used serial connection.”¹¹¹ Since under *Phillips*, there was no need to show that the inventor had disclaimed scope of coverage, T-Mobile obtained a narrowing construction by demonstrating “what the inventor has described as the invention.”¹¹²

Statements distinguishing the prior art must be sufficiently clear to warrant a narrowing construction. *Ventana Med. Sys., Inc. v. Biogenex Labs., Inc.*,¹¹³ concerned claims to a method of “dispensing” reagents onto a microscope slide. The question was whether “dispensing” was limited to “direct dispensing” (i.e., where the reagent container directly dispenses reagents onto the slide without an intermediary), or whether the claims encompassed the use of an intermediary device to “sip and spit” the reagents from the reagent container onto the slide. The specification contained general criticisms of prior art dispensers, including those using “sip and spit” approaches, as well as those using “direct dispensing” approaches. Because the specification equally criticized both types of prior art dispensers, there was nothing to suggest that the inventor was describing the invention to be the use of “direct” instead of “sip and spit” dispensing. Therefore, the Federal Circuit found it was inappropriate to limit the claim scope.¹¹⁴

iv) Consistent Usage of Claim Terms

Another claim construction principle is that the consistent and uniform usage of a claim term in a certain way in the specification may be definitional, showing the “ordinary meaning” of the claim term in the context of the invention. In such circumstances, otherwise broad language in the claim may be limited by the specification’s description of the invention. Consistent usage of a claim term in the specification can be definitional even without a showing that there is an “express definition” of the term or a “disclaimer,” which the now-overruled *Texas Digital* would have required. For example, the claim term “board” was found to be limited to wooden

¹⁰⁹ *Phillips*, 415 F.3d at 1316.

¹¹⁰ 450 F.3d 1350, 1354-55 (Fed. Cir. 2006).

¹¹¹ *Id.*

¹¹² *Id.* at 1355 (quoting *Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed. Cir. 2001)).

¹¹³ 473 F.3d 1173, 1180-81 (Fed. Cir. 2006).

¹¹⁴ *Id.* at 1181.

boards (as opposed to plastic lumber) in light of consistent statements in the specification and prosecution history describing the claimed “boards” as made from wood.¹¹⁵

e) Prosecution Disclaimers

Beyond using the prosecution history to ascertain the ordinary meaning of claim terms, the prosecution history can also be used to determine whether there was a “disclaimer” of claim scope. In order to convince the Patent Office to issue patent claims that have been rejected in light of the prior art, patent applicants frequently have to represent that their patent claims do *not* cover certain technologies. These statements are important limitations on claim scope.¹¹⁶ The legal standard for finding a prosecution history disclaimer requires “a clear and unmistakable disavowal of scope during prosecution.”¹¹⁷ For example, in *Atofina v. Great Lakes Chem. Corp.*,¹¹⁸ the Federal Circuit found a prosecution disclaimer to apply, and construed “chromium catalyst” as a catalyst where the only catalytically active material is chromium without the addition of metal oxides or non-inert additives. The decision was based on the applicants’ statements in the prosecution history which distinguished the claimed invention from the prior art’s use of metal oxides and non-inert additives, and which emphasized the “criticality of utilizing chromium catalyst alone rather than in combination with other metal components.”¹¹⁹

By contrast, ambiguous statements in the prosecution history do not warrant a disclaimer, particularly when the applicant’s statements are subject to multiple interpretations.¹²⁰ For example, in *Golight, Inc. v. Wal-Mart Stores, Inc.*,¹²¹ a claim to a “rotating” spotlight was not found subject to a disclaimer where statements in the prosecution history referring to the spotlight rotating “through 360°” were attributable to other claims, not the claim at issue.¹²²

f) Looking to Other Claims: The Doctrine of Claim Differentiation

Patents typically contain multiple claims, with variations among the claims describing the patented invention. The doctrine of “claim differentiation” provides that “each claim in a patent is presumptively different in scope.”¹²³ The doctrine is based on “the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope.”¹²⁴ It also

¹¹⁵ *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1145 (Fed. Cir. 2005).

¹¹⁶ *Phillips*, 415 F.3d at 1317.

¹¹⁷ *Purdue Pharma L.P. v. Endo Pharms. Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006).

¹¹⁸ 441 F.3d 991, 997 (Fed. Cir. 2006).

¹¹⁹ *Id.*

¹²⁰ *SanDisk Corp. v. Memorex Prods., Inc.*, 415 F.3d 1278, 1287 (Fed. Cir. 2005).

¹²¹ 355 F.3d 1327, 1332 (Fed. Cir. 2004).

¹²² *See also* *LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1373-74 (Fed. Cir. 2006) (finding that prosecution history statements that the prior art did not teach accessing data signals “over a system bus” were not sufficiently clear to justify limiting claims to require claimed signals to travel over a system bus), *reversed by* *Quanta v. LG Elecs.*, 128 S. Ct. 2109 (2008).

¹²³ *RF De., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1263 (Fed. Cir. 2003).

¹²⁴ *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1369 (Fed. Cir. 2007).

reflects the economic reality that patent fees depend on the number of claims in the patent. Patentees would be disinclined to purchase additional claims if they did not offer different scope. But it is important to recognize that the uncertainties of claim interpretation lead all but the most financially sensitive patent drafters to seek multiple overlapping claims.¹²⁵ Additional claims do not always cover different subject matter. Claim differentiation gives rise to a rebuttable presumption for claim construction purposes, especially when comparing the scope of an independent claim in view of its dependent claims: “[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”¹²⁶

“Pure” claim differentiation refers to the situation where there is no meaningful difference between an independent claim and its dependent claim, except for the presence of an added limitation in the dependent claim. In that situation, the presumption is especially strong that the independent claim is *not* restricted by the added limitation in the dependent claim.¹²⁷ In such situations, construing the independent claim to share that limitation would render the dependent claim “superfluous.”¹²⁸

The doctrine of claim differentiation has less force when there are additional differences between the independent claim and its dependent claim, such that the dependent claim would not be rendered “superfluous” by limiting the independent claim.¹²⁹

In the case of two independent claims, the doctrine of claim differentiation is generally not applicable because patent drafters are free to, and commonly do, claim an invention using multiple linguistic variations in multiple independent claims.¹³⁰

Even in cases of “pure” claim differentiation where the presumption would apply most strongly, the doctrine can be trumped by other considerations. Claim differentiation “can not broaden claims beyond their correct scope.”¹³¹ That is, “the written description and prosecution history overcome any presumption arising from the doctrine of claim

¹²⁵ See generally Mark A. Lemley, *The Limits of Claim Differentiation*, 22 BERKELEY TECH. L.J. 1389 (2007).

¹²⁶ *Phillips*, 415 F.3d at 1315.

¹²⁷ *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 806 (Fed. Cir. 2007).

¹²⁸ *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1369-70 (Fed. Cir. 2007).

¹²⁹ See, e.g., *SRAM Corp. v. AD-II Eng’g, Inc.*, 465 F.3d 1351, 1358 (Fed. Cir. 2006) (restricting independent claim to use of “precision index downshifting” even though this term was present in dependent claim, when additional differences existed between the independent and dependent claim).

¹³⁰ See, e.g., *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1370 (Fed. Cir. 2007) (declining to apply claim differentiation to separate groups of claims to “pellets,” “linear extrudates,” and “composite compositions” where there were other differences varying the scope of the claims); *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380-81 (Fed. Cir. 2006) (recognizing that “[c]laim drafters can also use different terms to define the exact same subject matter.”); *Hormone Research Found. v. Genentech, Inc.*, 904 F.2d 1558, 1567 n.15 (Fed. Cir. 1990) (“It is not unusual that separate claims may define the invention using different terminology, especially where (as here) independent claims are involved.”).

¹³¹ *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380-81 (Fed. Cir. 2006).

differentiation.”¹³² For example, where the patent applicant disclaimed subject matter during prosecution in order to obtain the patent, the patentee cannot attempt to recapture that subject matter through the doctrine of claim differentiation.¹³³ Given the wide variety of situations where the doctrine of claim differentiation does not apply, the Federal Circuit has cautioned that “[c]laim differentiation is a guide, not a rigid rule.”¹³⁴

Limiting statements in the specification or prosecution history can rebut a broad claim term interpretation, even if the breadth of that term is reinforced by the doctrine of claim differentiation.¹³⁵ For example, in *Regents of Univ. of Cal. v. Dakocytomation Cal., Inc.*,¹³⁶ the Federal Circuit approved of a limiting construction on the independent claim term “heterogenous mixture” to exclude repetitive sequences, notwithstanding the presence of dependent claims that do not exclude them.

As discussed more fully below, means-plus-function claims are limited to the corresponding structures, and their equivalents under §112, ¶6. The statutorily-mandated scope of these claims cannot be stretched through resort to claim differentiation.¹³⁷

g) Significance of the “Preamble” in Claim Construction

Patent claims commonly have a “preamble” that introduces the claimed invention. Some preambles may be just a few words, while others may be lengthy and detailed. A common dispute is whether or not the wording of the preamble is a limitation on the scope of the patent. A famously vague standard governs this inquiry: terms in the preamble are limiting when they are “necessary to give life, meaning, and vitality to the claims.”¹³⁸ The following principles are used in applying this standard.

Where the preamble is grammatically essential to the claim, the general rule is that it is limiting.¹³⁹ For example, where other terms in the body of the claim derive “antecedent basis” from the preamble, then the preamble is commonly found to be limiting.¹⁴⁰ Likewise, where the preamble is “essential to understand limitations or terms in the claim body,” it is similarly limiting.¹⁴¹

¹³² *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1369-70 (Fed. Cir. 2007).

¹³³ *See Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002).

¹³⁴ *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991).

¹³⁵ *See Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1369 (Fed. Cir. 2005) (noting that claim differentiation is “not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history”).

¹³⁶ 517 F.3d 1364, 1375 (Fed. Cir. 2008).

¹³⁷ *See, e.g., Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1304 (Fed. Cir. 2005) (“[A]lthough the doctrine of claim differentiation suggests that claim 5 should be broader than claim 1, any presumption that the claims differ with respect to this feature may be overcome by a contrary construction mandated by the application of §112, ¶ 6.”); *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991).

¹³⁸ *Kropa v. Robie*, 187 F.2d 150, 861 (CCPA 1951).

¹³⁹ *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808-09 (Fed. Cir. 2002).

¹⁴⁰ *Id.* at 808; *see also Bicon, Inc. v. Strauman Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006).

¹⁴¹ *Catalina*, 289 F.3d at 808.

If a preamble term is a “necessary and defining aspect of the invention” the preamble is limiting.¹⁴² This principle applies with special force where the language of the preamble was used during prosecution history to distinguish the claimed invention from the prior art.¹⁴³

The countervailing principle is that a preamble is not limiting when the body of the claim “describes a structurally complete invention.”¹⁴⁴ Statements of intended uses of an invention are generally *not* limiting.¹⁴⁵ This is because “the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure.”¹⁴⁶ Thus, many cases turn on the question of whether a statement in the preamble describing the purpose of an invention is deemed to describe a “necessary and defining aspect of the invention” (which is limiting), or is simply a “statement of intended use” (which is not limiting). A review of the Federal Circuit’s cases over the past 10 years in cases that litigated the issue of whether to construe the preamble reveals that the dominant approach in the close cases is to construe the preamble as a limitation.¹⁴⁷

¹⁴² *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343 (Fed. Cir. 2006); *see also* *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1330 (Fed. Cir. 2007) (interpreting the preamble term “immediately” as limiting, because “[t]he patentee here has clearly indicated via the specification and the prosecution history that the invention provides as an essential feature, immediate needle safety upon removal from the patient.”).

¹⁴³ *Catalina*, 289 F.3d at 808; *see also* *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1347-48 (Fed. Cir. 2004) (finding the preamble phrase “rich in glucosinolates” limiting because the patentee relied on the preamble to distinguish the prior art in prosecution).

¹⁴⁴ *Catalina*, 289 F.3d at 809; *see also* *Intertool, Ltd. v. Texar Corp.*, 369 F.3d 1289, 1295 (Fed. Cir. 2004) (finding the preamble non-limiting where the body of the claim described the invention in “complete and exacting structural detail”).

¹⁴⁵ *Catalina*, 289 F.3d at 809.

¹⁴⁶ *Id.*

¹⁴⁷ *See, e.g.*, *TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1370 (Fed. Cir. 2008) (interpreting “handle” to be a structural limitation of the claim at issue); *Bass Pro Trademarks, L.L.C. v. Cabela’s, Inc.*, 485 F.3d 1364, 1369 (Fed. Cir. 2007) (reversing the district court and noting that the term “vest” in the preamble of the claim at issue was stressed during patent prosecution and was thus limiting); *MBO Laboratories, Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1330 (Fed. Cir. 2007) (holding that the specification and the prosecution history clearly indicated that the term “immediately” in the preamble was a limitation); *Seachange Intern., Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1376 (Fed. Cir. 2005) (“The preamble provides the only antecedent basis and thus the context essential to understand the meaning”); *NTP, Inc. v. Research In Motion, Ltd.*, 392 F.3d 1336, 1358 (Fed. Cir. 2004) (“[I]f the preamble helps to determine the scope of the patent claim, then it is construed as part of the claimed invention.”); *Eaton Corp. v. Rockwell Intern. Corp.*, 323 F.3d 1332, 1342 (Fed. Cir. 2003) (“[T]he inventor chose to use both the preamble and the body of the claim to define his invention. The preamble therefore limits the claimed invention.”). *But see* *Symantec Corp v. Computer Associates Intern., Inc.* 522 F.3d 1279, 1288-89 (Fed. Cir. 2008) (“[T]he general purpose of a claim preamble is to give context for what is being described in the body of the claim; if it is reasonably susceptible to being construed to be merely duplicative of the limitations in the body of the claim (and was not clearly added to overcome a rejection), we do not construe it to be a separate limitation).

3. Claim Terms Having Conventional, Presumed, or Established Meanings

Claim terms generally take their meaning from the language of the patent, the prosecution history, and the applicable extrinsic evidence. Some terms, however, have meanings that are derived from conventional usage in claim drafting or prior judicial construction. The case law in this area, however, is notoriously malleable. Take, for example, the term “a” (or “an”). The Federal Circuit “has repeatedly emphasized that an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising.’”¹⁴⁸ The court commented that this interpretation can “best [be] described as a rule, rather than merely as a presumption or even a convention. The exceptions to this rule are extremely limited: a patentee must ‘evince[] a clear intent’ to limit ‘a’ or ‘an’ to ‘one.’ . . . An exception to the general rule that ‘a’ or ‘an’ means more than one only arises where the language of the claims themselves, the specification, or the prosecution history necessitate a departure from the rule.”¹⁴⁹

Just two weeks after stating this “rule,” the Federal Circuit found that the exception (singular meaning) applied based upon the claims and written description in *Tivo, Inc. v. Echostar Communications Corporation*.¹⁵⁰ Thus, even for as simple and commonplace a word as “a,” the term can have divergent meanings based on the context of the patent (and despite the best efforts of the Federal Circuit to institute “rules” for its construction). Courts must remain sensitive to the context of patent claims, and avoid rigidly applying what may appear to be an established meaning.

“Transitional phrases” are terms that are used to link the various limitations in a claim. These transitional phrases govern, among other things, whether the claim is “open” or “closed” to the presence of additional elements. Restated, these transitional phrases define whether a claim with defined limitations can be infringed by a device that has additional elements beyond what is specified in the claim. The term “consisting of” is a closed transitional phrase, while the term “comprising” is an open transitional phrase.¹⁵¹ These terms have particularly established meanings based upon decades of consistent use in claim drafting.

Table B collects common terms that have been construed by the Federal Circuit. As the table reflects, some of these terms have been construed differently depending upon the context. Thus, courts should not woodenly adopt meanings from prior cases. Rather, they should be aware that the Federal Circuit has considered some terms in the past and has, in some cases, attributed general meanings. In every case, however, courts should

¹⁴⁸ *Baldwin Graphic Sys., Inc. v. Sibert, Inc.* 512 F.3d 1338, 1342 (Fed. Cir. 2008).

¹⁴⁹ *Id.* at 1342-43 (quoting *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed.Cir.2000)) (alterations in original).

¹⁵⁰ 516 F.3d 1290, 1303-04 (Fed. Cir. 2008) (“The pertinent claim language refers to ‘assembl[ing] said video and audio components into an MPEG stream,’ which in context clearly indicates that two separate components are assembled into a single stream, not that the video components are assembled into one stream and the audio components into a second stream.”).

¹⁵¹ *See AFG Indus., Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1244-45 (Fed. Cir. 2001).

carefully examine the claim term in context. Where a term does not have a clear meaning from the intrinsic evidence, then the jurisprudence may offer useful guidance.

Table B Common Terms Construed by the Federal Circuit		
Term	Meaning	Citation
ARTICLES		
a, an	<p>Dominant meaning in open-ended claim: one or more.</p> <p>However, sometimes means: only one.</p>	<p><i>Baldwin Graphic Sys., Inc. v. Siebert</i>, 512 F.3d 1338, 1342-43 (Fed. Cir. 2008) (“That ‘a’ or ‘an’ can mean ‘one or more’ is best described as a rule, rather than merely as a presumption or even a convention.”); <i>Lava Trading v. Sonic Trading Mgt.</i>, 445 F.3d 1348, 1354 (Fed. Cir. 2006); <i>Free Motion Fitness v. Cybex Int’l</i>, 423 F.3d 1343, 1350 (Fed. Cir. 2005) (holding that “a” meant “one or more” where “references to a single cable in the specification are found in the description of the preferred embodiments, and do not evince a clear intent by the patentee to limit the article to the singular); <i>Collegenet, Inc. v. Applyyourself, Inc.</i>, 418 F.3d 1225, 1232 (Fed. Cir. 2005).</p> <p><i>Cat Tech LLC v. Tubemaster, Inc.</i>, 528 F.3d 871, 886 (Fed. Cir. 2008) (holding that even though “a” typically means “one or more”, the prosecution history trumped this conventional meaning and the patentee was playing “semantic antics”); <i>Tivo, Inc. v. Echostar Commc’ns Corp.</i>, 516 F.3d 1290 (Fed. Cir. 2008); <i>Baldwin Graphic Sys., Inc. v. Siebert</i>, 512 F.3d 1338, 1342-43 (Fed. Cir. 2008) (“An exception to the general rule . . . only arises where the language of the claims themselves, the specification, or the prosecution history necessitate a departure from the rule.”); <i>Norian Corp. v. Stryker Corp.</i>, 432 F.3d 1356, 1359 (Fed. Cir. 2005) (“[T]he</p>

Table B Common Terms Construed by the Federal Circuit		
Term	Meaning	Citation
		claim language ‘consisting of . . . a sodium phosphate,’ on its own, suggests the use of a single sodium phosphate.”).
at least one	There can be only one or more than one.	<i>Z4 Tech., Inc. v. Microsoft Corp.</i> , 507 F.3d 1340, 1348-49 (Fed. Cir. 2007); <i>Rhine v. Casio, Inc.</i> , 183 F.3d 1342, 1345 (Fed. Cir. 1999).
the, said	Indicates identity with a previously used claim term.	<i>Baldwin Graphic Sys., Inc. v. Siebert, Inc.</i> , 512 F.3d 1338, 1342-43 (Fed. Cir. 2008).
plurality	At least two	<i>Verizon Servs. Corp. V. Vonage Holding Corp.</i> , 503 F.3d 1295, 1308-09 (Fed. Cir. 2007) (holding that a limitation in the specification requiring a “plurality . . . may be satisfied by a single object”); <i>York Prods., Inc. v. Cent. Tractor Farm & Family Ctr.</i> , 99 F.3d 1568, 1575 (Fed. Cir. 1996).
first, second	Distinguishes between repeated instances of an element or limitation.	<i>Free Motion Fitness, Inc. v. Cybex Int’l</i> , 423 F.3d 1343, 1348 (2005); <i>3M Innovative Properties Co. v. Avery Dennison Corp.</i> , 350 F.3d 1365, 1371 (Fed. Cir. 2003).
TRANSITIONAL PHRASES		
comprising, comprised of	Is an “open” phrase and allows coverage of technologies that employ additional, unrecited elements.	<i>Predicate Logic, Inc. v. Distributive Software, Inc.</i> , 544 F.3d 1298, 1304 (Fed. Cir. 2008); <i>CIAS, Inc. v. Alliance Gaming Corp.</i> , 504 F.3d 1356, 1360 (Fed. Cir. 2007) (“The usual and generally consistent meaning of ‘comprised of’ . . . is, like ‘comprising,’ that the ensuing elements or steps are not limiting.”); <i>AFG Indus., Inc. v. Cardinal IG Go., Inc.</i> , 239 F.3d 1239, 1245 (Fed. Cir. 2001). <i>But see Dippin’ Dots, Inc. v. Mosey</i> , 476 F.3d 1337, 1343 (Fed. Cir. 2007) (“Comprising is not a

Table B Common Terms Construed by the Federal Circuit		
Term	Meaning	Citation
		weasel word with which to abrogate claim limitations” and “[t]he presumption raised by the term ‘comprising’ does not reach into each of the six steps to render every word and phrase therein open-ended.”)
containing	Synonymous with “comprising.”	<i>Mars, Inc. v. H.J. Heinz Co.</i> , 377 F.3d 1369, 1377 (Fed. Cir. 2004).
including	Synonymous with “comprising.”	<i>Lucent Techs., Inc. v. Gateway, Inc.</i> , 525 F.3d 1200, 1214 (Fed. Cir. 2008) (“This court has consistently interpreted ‘including’ and ‘comprising’ to have the same meaning, namely that the listed elements . . . are essential but other elements may be added.”); <i>Amgen Inc. v. Hoechst Marion Roussel, Inc.</i> , 314 F.3d 1313, 1345 (Fed. Cir. 2003). Note that in <i>Toro Co. v. White Consol. Indus., Inc.</i> , 199 F.3d 1295 (Fed. Cir. 1999), the term “including” was found to require permanency of the recited element – <i>i.e.</i> , the claim phrase “cover including means for increasing the pressure” required the device’s restriction ring to be permanently affixed to and included as part of the air inlet cover, so claims were not literally infringed by device having separate restriction ring that was inserted and removed as a separate part.
having	May be “open” but does not convey an “open” meaning as strongly as “comprising.”	<i>Crystal Semiconductor Corp. v. TriTech Microelectronics Intern., Inc.</i> , 246 F.3d 1336 (Fed. Cir. 2001); <i>Piecznik v. Dyax Corp.</i> , 76 F. App’x 293, 296 (Fed. Cir. 2003)(unpublished);

Table B Common Terms Construed by the Federal Circuit		
Term	Meaning	Citation
	May be closed, depending on the context of the patent.	<i>Lampi Corp. v. Am. Power Prods., Inc.</i> , 228 F.3d 1365, 1376 (Fed. Cir. 2000).
consisting of	Is a “closed” phrase and excludes elements, steps, or ingredients not specified in the claims.	<i>Immunocept, LLC v. Fullbright & Jaworski, LLP</i> , 504 F.3d 1281, 1286 n.4 (Fed. Cir. 2007) (noting that “a competitor could design around a claim with this transitional phrase by adding any step or element not recited in the claim”); <i>CIAS, Inc. v. Alliance Gaming Corp.</i> , 504 F.3d 1356, 1361 (Fed. Cir. 2007) (holding that even though “consisting of” limits the claimed invention to what is expressly set forth in the claim, “it does not limit aspects unrelated to the invention”); <i>AFG Industries, Inc. v. Cardinal IG Go., Inc.</i> , 239 F.3d 1239, 1245 (Fed. Cir. 2001).
consisting essentially of	Occupies a middle ground between “open” and “closed” claims and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention.	<i>PPG Industries v. Guardian Indus. Corp.</i> , 156 F.3d 1351, 1354 (Fed. Cir. 1998); <i>see also Ecolab, Inc. v. FMC Corp.</i> , 569 F.3d 1335, 1343 (Fed. Cir. 2009) (noting that “a patentee can alter [the] typical meaning” of “consisting essentially of” by making clear in the specification what it regarded as constituting a material change in the basic and novel properties of the invention); <i>Atlas Powder Co. v. E.I. du Pont De Nemours & Co.</i> , 750 F.2d 1569, 1574 (Fed. Cir. 1984);.
composed of	Synonymous with “consisting essentially of.”	<i>AFG Indus., Inc. v. Cardinal IG Go., Inc.</i> , 239 F.3d 1239, 1245 (Fed. Cir. 2001).
TERMS OF DEGREE		
about	Avoids a strict numerical boundary.	<i>Cohesive Techs., Inc. v. Waters Corp.</i> , 543 F.3d 1351, 1368 (Fed. Cir. 2008); <i>Cen. Admixture Pharmacy Servs.</i> ,

Table B
Common Terms Construed by the Federal Circuit

Term	Meaning	Citation
		<i>Inc. v. Advanced Cardiac Solutions, P.C.</i> , 482 F.3d 1347, 1355-56 (Fed. Cir. 2007); <i>Ortho-McNeil Parm., Inc. v. Caraco Pharm. Labs., Ltd.</i> , 476 F.3d 1321, 1327 (Fed. Cir. 2007) (noting that in determining how far beyond the claimed range the term “about” extends the claim, a court “must focus . . . on the criticality of the [numerical limitation] to the invention.”).
approximately	Serves only to expand the scope of literal infringement, not to enable application of the doctrine of equivalents.	<i>U.S. Philips Corp. v. Iwasaki Elec. Co. Ltd.</i> , 505 F.3d 1371, 1379 (Fed. Cir. 2007); <i>see also Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.</i> , 520 U.S. 17, (25-28) (1997) (failing to even mention the patentees use of the term “approximately” in allowing consideration of the doctrine of equivalents).
effective amount	Any amount (or dosage) that can achieve therapeutic synergy.	<i>Geneva Pharma., Inc. v. GlaxoSmithKline PLC</i> , 349 F.3d 1373, 1383-84 (Fed. Cir. 2003) (“‘[E]ffective amount’ is a common and generally acceptable term for pharmaceutical claims and is not ambiguous or indefinite, provided that a person of ordinary skill in the art could determine the specific amounts without undue experimentation.”); <i>Abbott Labs v. Baxter Pharma. Prods.</i> , 334 F.3d 1274, 1280 (Fed. Cir. 2003).
essentially	Synonymous with “about.”	<i>Eiselstein v. Frank</i> , 52 F.3d 1035, 1039 (Fed. Cir. 1995).
substantially	Meaning is highly dependent on intrinsic evidence.	<i>Deering Precision Instruments, L.L.C. v. Vector Distribution Sys., Inc.</i> , 347 F.3d 1314, 1322 (Fed. Cir. 2003) (construing the term “substantially in an imaginary plane.”); <i>Epcon Gas Sys., Inc. v. Bauer</i>

Table B
Common Terms Construed by the Federal Circuit

Term	Meaning	Citation
		<i>Compressors, Inc.</i> , 279 F.3d 1022 (Fed. Cir. 2002) (construing the terms “substantially constant” and “substantially below”); <i>Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.</i> , 206 F.3d 1408 (Fed. Cir. 2000) (construing the term “substantially inward”); <i>York Prods., Inc. v. Cent. Tractor Farm & Family Ctr.</i> , 99 F.3d 1568 (Fed. Cir. 1996) (construing the term “substantially the entire height thereof”); <i>Tex. Instruments Inc. v. Cypress Semiconductor Corp.</i> , 90 F.3d 1558 (Fed. Cir. 1996) (construing the term “substantially in the common plane”).
up to about	May include or exclude the endpoint, depending on the context. Where the endpoint is numeric (<i>e.g.</i> , up to about 10%), the endpoint may be included; whereas, where the endpoint is physical (<i>e.g.</i> , painting the wall up to about the door), the endpoint may be excluded.	<i>AK Steel Corp. v. Sollac and Ugine</i> , 344 F.3d 1234 (Fed. Cir. 2003).
SPATIAL RELATIONSHIPS		
adjoining	Touching.	<i>Int’l Rectifier Corp. v. IXYS Corp.</i> , 361 F.3d 1363, 1375 (Fed. Cir. 2004) (holding that as a matter of law, “adjoining” means “touching”).
surround	To encircle on all sides simultaneously.	<i>Libman Co. v. Quickie Mfg. Corp.</i> , 74 F. App’x 900, 904-05 (2003) (unpublished) (heavy reliance on dictionary definition).
in, between, within	Not required to be completely or continuously in, between or within; between may be satisfied even if extension beyond boundaries.	<i>Foster v. Hallco Mfg. Co., Inc.</i> , 1997 U.S. App. LEXIS 18989 (Fed. Cir. 1997) (unpublished) (heavy reliance on dictionary definition).

Table B Common Terms Construed by the Federal Circuit		
Term	Meaning	Citation
to	When A travels “to” B, it is sufficient to travel on a pathway with B as a destination, possibly visiting intervening components.	<i>Cybor Corp. v. FAS Techs., Inc.</i> , 138 F.3d 1448, 1458-59 (Fed. Cir. 1998).
defined	Can be used to mean that one element creates or forms the outline or shape of another element.	<i>Rival Co. v. Sunbeam Corp.</i> , 185 F.3d 885 (table) (Fed. Cir. 1999).
OTHER		
whereby	<p>A “whereby” clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim.</p> <p>However, a “whereby” clause that sets forth a structural limitation and not merely the results achieved by the claimed structure is a positive limitation of the claim.</p>	<p><i>Hoffer v. Microsoft Corp.</i>, 405 F.3d 1326, 1329 (Fed. Cir. 2005); <i>Tex. Instruments Inc. v. U.S. Int’l Trade Comm’n</i>, 988 F.2d 1165, 1172 (Fed. Cir. 1993).</p> <p><i>Scheinman v. Zalkind</i>, 112 F.2d 1017, 1019 (CCPA 1940).</p>
standard, normal, conventional, traditional	Time-dependent terms that are limited to technologies existing at the time of the invention.	<i>PC Connector Solutions LLC v. SmartDisk Corp.</i> , 406 F.3d 1359, 1363 (Fed. Cir. 2005).
mixture	Open ended and does not exclude additional, unnamed ingredients.	<i>Mars, Inc. v. H.J. Heinz Co., L.P.</i> , 377 F.3d 1369, 1376 (Fed. Cir. 2004).
such as, may	Of a kind or character about to be indicated, suggested, or exemplified; for instance.	<i>In re Johnston</i> , 435 F.3d 1381, 1384 (Fed. Cir. 2006) (“[O]ptional elements do not narrow the claim because they can always be omitted.”); <i>Catalina Mktg. Int’l v. Coolsavings.com, Inc.</i> , 289 F.3d 801 (Fed. Cir. 2002).
adapted	Fit for a purpose; capable of a purpose.	<i>Mattox v. Infotopia, Inc.</i> , 136 F. App’x 366, 369 (Fed. Cir. 2005) (unpublished).
assembly	A collection of parts to form a structure.	<i>Kegel Co., Inc. v. AMF Bowling, Inc.</i> , 127 F.3d 1420,

Table B Common Terms Construed by the Federal Circuit		
Term	Meaning	Citation
		1427 (Fed. Cir. 1997).
uniform	Having always the same form.	<i>Middleton, Inc. v. Minn. Mining and Mfg. Co.</i> , 411 F.3d 1384, 1387 (Fed. Cir. 2002) (reliance on <i>Texas Digital</i> and “heavy presumption” rule).
predetermined	Determined beforehand.	<i>Koito Mfg. Co., Ltd. v. Turn-Key-Tech, LLC</i> , 381 F.3d 1142, 1147-48 (Fed. Cir. 2004).

4. *Interpreting Terms to Preserve Validity*

Construing claims to preserve validity is a doctrine with a long and conflicted past. The Supreme Court has held that “if the claim were fairly susceptible to two constructions, that should be adopted which will secure to the patentee his actual invention.”¹⁵² The doctrine arises from the presumption that the Patent Office has properly examined claims, and if those could be interpreted in two ways consistent with the patent documents, then the presumption of validity should drive the construction to maintain the patent’s validity. *Phillips* reaffirmed the doctrine (and given the doctrine’s Supreme Court roots, there was no choice), but simultaneously limited it to all but a rarity. There is a fundamental tension between this doctrine and the basic canons for construing claims. Claims are to be construed in light of the intrinsic and the pertinent extrinsic evidence that bears on the meaning of terms as they are used in the patent claims. That basic framework does not accommodate further modifications of claim language based on other prior art disclosures. Indeed, the public notice function of patents would suffer if untold prior art references were used in litigation to limit claim scope in ways to rescue claims that would otherwise be invalid. Thus, when the doctrine of construing claims to preserve validity is mentioned by the Federal Circuit, it is commonly in the context of reversing district courts that improperly relied on the doctrine.¹⁵³ The limited circumstances where the doctrine does have applicability are when two constructions are equally plausible, and a strong inference can be shown “that the PTO would have recognized that one claim interpretation would render the claim invalid, and that the PTO would not have issued the patent assuming that to be the proper construction of the term.”¹⁵⁴ This is a rare circumstance, and the best course will usually be to construe the claim language in view of the pertinent intrinsic and extrinsic evidence, and let the validity chips fall where they may.

C. **Special Case: Means-Plus-Function Claims**

A special class of claim language is construed as “means-plus-function” claim terms. When a party seeks to have a term construed as a “means-plus-function” term, the analysis is governed by §112, ¶6:

An element in a claim for a combination may be expressed as a means or a step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

¹⁵² *Smith v. Snow*, 294 U.S. 1, 14 (1935).

¹⁵³ *See, e.g., Saunders Group, Inc. v. Comfortrac, Inc.*, 492 F.3d 1326, 1335 (Fed. Cir. 2007) (“[W]e hold only that the court’s validity analysis cannot be used as basis for adopting a narrow construction of the claims.”).

¹⁵⁴ *Phillips*, 415 F.3d at 1328.

When §112, ¶6 is found to apply to claim language, then the claim term is construed by identifying the “function” associated with the claim language, and then identifying the corresponding “structure” in the specification associated with that function. The claim is construed to be limited to those corresponding structures and their equivalents. Thus, parties frequently attempt to invoke §112, ¶6 as a way to narrow the scope of a patent to the particular technologies disclosed in the specification. Chart 9 sets forth the framework for construing functional claims terms. The court addresses Steps 1, 2A, and 2B as part of claim construction. Step 2C – determining whether the accused device is an “equivalent thereof” – is a question of fact for the jury.

Chart 9
Framework for Construing Means-Plus-Function Claims

Step 1: Is term in question “means-plus-function”?

Rebuttable Presumption: inclusion of “means”

- rebutted if claim includes sufficient structure to perform recited function

Step 2: Interpretation Process:

- A. Identify function of term (based on claim term language; not embodiments)
- B. Identify corresponding structure, material, or act based on disclosed embodiments
- C. Infringement Stage (Question of Fact): Determine whether accused device is the corresponding structure or “equivalents thereof” (as of time of issuance)

1. *Step 1: Is the Term in Question “Means-Plus-Function”?*

When presented with a request to invoke §112, ¶6, the court must first determine if that section applies. Means-plus-function claiming applies only to “purely functional limitations that do not provide the structure that performs the recited function.”¹⁵⁵ There

¹⁵⁵ *Depuy Spine, Inc. v. Medtronic Sofamor Sanek, Inc.*, 469 F.3d 1005, 1023 (Fed. Cir. 2006).

is a rebuttable presumption that §112, ¶6 applies “[i]f the word ‘means’ appears in a claim element in association with a function.”¹⁵⁶ The use of the term “means” or “mechanism”¹⁵⁷ in a claim limitation typically implies that the inventor used the “means-plus-function” claim format, which invokes the associated statutory limits on the literal scope of that claim limitation.¹⁵⁸ Nonetheless, this implication does not apply where the claim language itself provides the structure that performs the recited function.¹⁵⁹

Conversely, “a claim term that does not use ‘means’ will trigger the rebuttable presumption that 35 U.S.C. §112, ¶6 does not apply.”¹⁶⁰ Disputes commonly arise over whether terms should be construed as means-plus-function language despite lacking an explicit “means” format. The presumption that such terms are *not* means-plus-function terms “can be rebutted by showing that the claim element recites a function without reciting sufficient structure for performing that function.”¹⁶¹ Whether a claim invokes §112, ¶6 is decided on a limitation-by-limitation basis looking to the patent and the prosecution history.¹⁶²

For example, the Federal Circuit applied §112, ¶6 to the term “colorant selection mechanism,” explaining that “[t]he term ‘mechanism’ standing alone connotes no more structure than the term ‘means,’” and “the term ‘colorant selection’ ... is not defined in the specification and has no dictionary definition, and there is no suggestion that it has a generally understood meaning in the art.”¹⁶³ By contrast, the Federal Circuit found §112, ¶6 inapplicable to the term “compression member” because “dictionary definitions and experts on *both* sides confirm that ‘compression member’ is an expression that was understood by persons of ordinary skill in the art to describe a kind of structure.”¹⁶⁴

¹⁵⁶ *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1368 (Fed. Cir. 2005).

¹⁵⁷ *See Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1095-97 (Fed. Cir. 2008); *Massachusetts Institute Of Technology v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006) (noting that “[t]he generic terms ‘mechanism,’ ‘means,’ ‘element,’ and ‘device,’ typically do not connote sufficiently definite structure [to avoid means-plus-function treatment] ... The term ‘mechanism’ standing alone connotes no more structure than the term ‘means.’”).

¹⁵⁸ *See Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1584 (Fed. Cir. 1996).

¹⁵⁹ *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) (finding that a claim limitation stating “means disposed inside the shell for increasing its load bearing capacity comprising internal steel baffles” provides the relevant structure (“internal steel baffles”) and hence is not limited to the embodiments in the specification and equivalents thereof); *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996) (finding that use of the phrase “perforation means” does not invoke §112, ¶6).

¹⁶⁰ *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1023 (Fed. Cir. 2006).

¹⁶¹ *Id.* (citation omitted); *see also Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 957 (Fed. Cir. 1983) (construing functional language introduced by “so that” to be equivalent to “means for” claim language) (1984); *Mas-Hamilton Group v. LaGard, Inc.*, 156 F.3d 1206, 1213-15 (Fed. Cir. 1998) (finding that “lever moving element” was not a known structure in the lock art and hence should be read to invoke the specific embodiments in the specification and equivalents thereof).

¹⁶² *See Cole*, 102 F.3d at 531.

¹⁶³ *Mass. Inst. of Tech v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006).

¹⁶⁴ *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1023 (Fed. Cir. 2006).

2. Step 2: Interpretation of Means-Plus-Function Claim Terms

a) Step 2A: Identify Claim Term Function

If the court concludes that §112, ¶6 applies to a claim term, then the court must first identify the function of that term. It is important to identify the function associated with means-plus-function claim language before identifying the corresponding structure, material, or acts, and not to confuse these two analytically separate steps.¹⁶⁵ Errors arise when courts attempt to identify the function of a claimed invention in reference to a working embodiment, rather than by identifying function solely based on the claim language.¹⁶⁶ Attributing functions to a working device, rather than focusing on the claim language, may wrongly sweep additional functions into the claim.¹⁶⁷

b) Step 2B: Identify “Structure, Material, or Acts”

After identifying the claimed function, the court must identify the corresponding structure in the specification. This step is a frequent source of disputes. As a preliminary matter, if there is no structure in the specification corresponding to the claimed function, the claim is deemed to be indefinite, and is therefore invalid.¹⁶⁸ To find a claim invalid due to lack of a corresponding structure, clear and convincing evidence must be shown in order to overcome the presumption of validity (which is one of the few instances where there is a burden of proof in *Markman* proceedings).¹⁶⁹ Material incorporated by reference in a specification cannot serve as “corresponding structure.”¹⁷⁰

If there is some structure identified, the next question is how much structure is “corresponding structure.” Where there are multiple embodiments of structures corresponding to the claimed function, all those embodiments are deemed to be “corresponding.”¹⁷¹ Thus, the claim would be infringed by an accused product using any of those corresponding structures.

A closely related question, however, is the extent of the structures that should be swept into the analysis. The structures “necessary” to the claimed function must be disclosed.¹⁷² However, the range of “necessary” structures can be pushed to the absurd. For example, when a claimed function is a means for computing, there is no need to disclose the power plant that provides the electricity to run the computer. And similarly when patents disclose some of the underlying infrastructure for carrying out the

¹⁶⁵ See *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (“Determining a claimed function and identifying structure corresponding to that function involve distinct, albeit related, steps that must occur in a particular order.”).

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ See *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1376 (Fed. Cir. 2001).

¹⁶⁹ *Id.* (finding that the disclosure of “commercially available units” was sufficient disclosure of vacuum sensors, especially in the face of weak expert testimony to show how persons of skill in the art would interpret the specification).

¹⁷⁰ *Default Proof Credit Card System, Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1301 (Fed. Cir. 2005).

¹⁷¹ See *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1369 (Fed. Cir. 2005).

¹⁷² See *In re Dossel*, 115 F.3d 942, 946 (Fed. Cir. 1997).

invention, there is no need to sweep in all that underlying structure when identifying the corresponding structure. Rather, “structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claims.”¹⁷³ Relatedly, where a disclosed structure in a specification has multiple components, only some of which perform a claimed function, the “necessary structure” is limited to the components that perform the claimed function.¹⁷⁴

c) Step 2C: “Equivalents Thereof”

In addition to structures, materials, or acts of the embodiments described in the patent’s specification, the patentee is entitled to “equivalents thereof” as of the time the patent issued. Unlike the determination of function and corresponding structure, material, or acts which are clearly part of claim construction, the “equivalents” issue arises in the context of the infringement determination. The fact-finder must determine whether the means in the accused device or method performs the function stated in the claim in the same or an equivalent manner as the corresponding structures, materials, or acts set forth in the specification.¹⁷⁵

d) Specific Rule for Means-Plus-Function Claims in the Computer Software Context

Merely pointing to a “computer” may not be sufficient to provide sufficient structure to a software or computer patent. Rather, the particular algorithms that carry out the invention may be the necessary “structure” to fulfill §112, ¶6. In *WMS Gaming, Inc. v. Int’l Game Tech.*,¹⁷⁶ the Federal Circuit ruled that the structure in the specification supporting the claim language “means for assigning” was *not* merely an algorithm executed by a computer, but was rather the particular algorithms taught in the specification. “In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.”¹⁷⁷

D. Dysfunctional Claims: Mistakes and Indefiniteness

Courts must occasionally deal with dysfunctional claims, falling into two principal categories: (1) claims that contain obvious typographical, grammatical, or other errors that render the claim unworkable; and (2) claims that may be indefinite (possibly depending on how it is construed), raising the possibility that the claim is invalid under

¹⁷³ *Minks v. Polaris Industries, Inc.*, 546 F.3d 1364, 1377-78 (Fed. Cir. 2008).

¹⁷⁴ *See, e.g., Clearwater Systems Corp. v. Evapco, Inc.*, 553 F.Supp.2d 173, 179-80 (D.Conn. 2008) (differentiating among disclosed circuitry components to ones performing claimed function, and excluding other components from construction).

¹⁷⁵ *See Palumbo v. Don-Joy Co.*, 762 F.2d 969 (Fed. Cir. 1985).

¹⁷⁶ 184 F.3d 1339 (Fed. Cir. 1999).

¹⁷⁷ *Id.* at 1349.

§112, ¶2. The former may be obvious from the context and quite possibly can be due to the Patent Office's oversight. Some mistakes are more intractable, and go to the heart of the claimed invention. Deciding whether these mistakes can be fixed at all, who should fix them (the court or the PTO), and what the consequences of changing the claims are, can be challenging.

1. Mistakes

When issues of mistaken claim language arise, the parties often call into question the power of courts to correct mistakes in patents through the claim construction process. Attempts to correct patents raise the threshold question of whether the district court has legal authority to correct the alleged error or omission or whether such an issue must be brought to the PTO. The somewhat ambiguous answer is that "courts can continue to correct obvious minor typographical and clerical errors in patents," whereas "major errors are subject only to correction by the PTO."¹⁷⁸

The general rule is that "[t]he district court can correct an error only if the error is evident from the face of the patent."¹⁷⁹ In order to permit correction, two requirements must be met: "A district court can correct a patent only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification *and* (2) the prosecution history does not suggest a different interpretation of the claims."¹⁸⁰ Another general rule limiting the corrective power of courts is that "courts may not redraft claims, whether to make them operable or to sustain their validity."¹⁸¹

Whether an error is "evident from the face of the patent" is a matter of frequent dispute. Where the applicant uses an inapt claim term, the applicant is typically held to the wording, even if the intended meaning is abundantly clear. For example, in *Chef America*, in a patent which dealt with a process for cooking dough, the claim language required "heating the resulting batter-coated dough *to* a temperature in the range of about 400°F to 850°F."¹⁸² If the dough is heated "*to*" that temperature range, it would be burned to a crisp. Heating the dough "*at*" that temperature range supposedly results in a light, flaky, crispy texture, according to the patent's specification.¹⁸³ Even though it would be nonsensical to require heating the dough "*to*" 400°F, the court refused to construe the claims otherwise, and the Federal Circuit affirmed, which rendered the claims non-infringed.¹⁸⁴

Courts have somewhat greater leeway to correct administrative errors attributable to the Patent Office. Minor errors can be corrected by a district court, even if the prosecution history must be consulted in order to determine how to fix the error. For example, in *Hoffer v. Microsoft Corp.*,¹⁸⁵ the Federal Circuit ruled that the district court

¹⁷⁸ *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003).

¹⁷⁹ *See Group One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1303 (Fed. Cir. 2005).

¹⁸⁰ *Novo Industries*, 350 F.3d at 1357, quoted by *id.* (emphasis added).

¹⁸¹ *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004).

¹⁸² *Id.* at 1371 (emphasis supplied).

¹⁸³ *See id.* at 1372.

¹⁸⁴ *See id.* at 1373-74.

¹⁸⁵ 405 F.3d 1326, 1331 (Fed. Cir. 2005).

could have fixed an error in patent claim numbering that left a dependent claim without a reference to its independent claim, where the appropriate reference was easily determined by reference to the prosecution history. However, where the PTO printing office omitted a block of claim text from a patent, that error was found to be beyond the district court's corrective powers.¹⁸⁶

When a district court construes a patent claim to correct an error, that construction generally has a retroactive effect, whereas corrections by the Patent Office are prospective.¹⁸⁷ Thus, litigants have a strong incentive to fix errors through judicial construction as opposed to petitioning the Patent Office for a certificate of correction. However, the risk is that if the district court declines to fix the correction, the defective claims may be held invalid for indefiniteness, or may fail for other reasons such as non-infringement.¹⁸⁸

2. *Indefiniteness*

The potentially dispositive issue of “indefiniteness” is frequently intertwined with the claim construction process. “Indefiniteness” is an invalidity defense based on §112, ¶ 2, which requires that the claims of a patent “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention.”¹⁸⁹ “The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, *e.g.*, competitors of the patent owner, can determine whether or not they infringe.”¹⁹⁰

When a claim cannot be construed, it is indefinite, and therefore invalid.¹⁹¹ Some authority suggests that all indefiniteness issues boil down to an issue of claim construction.¹⁹² However, there are instances where a claim *can* be construed, but cannot be meaningfully applied, in which case the claim is also invalid for indefiniteness.

Indefiniteness is unique among claim construction issues in that it carries a burden of proof. Under §282 of the Patent Act, issued patents carry a presumption of validity that can only be rebutted by clear and convincing evidence.¹⁹³ Therefore, because it invalidated a patent, a claim construction finding the claim indefinite must be supported by clear and convincing evidence.

¹⁸⁶ See *Group One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1303 (Fed. Cir. 2005) (“The prosecution history discloses that the missing language was required to be added by the examiner as a condition for issuance, but one cannot discern what language is missing simply by reading the patent. The district court does not have authority to correct the patent in such circumstances.”).

¹⁸⁷ See *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1356 (Fed. Cir. 2003) (noting that a certificate of correction from the Patent Office is “only effective for causes of action arising after it was issued”).

¹⁸⁸ See, *e.g.*, *id.* at 1358 (refusing to correct patent, and holding claim indefinite).

¹⁸⁹ § 112.

¹⁹⁰ *All Dental Prodx, Inc. v. Advantage Dental Prods., Inc.*, 309 F.3d 774, 779 (Fed. Cir. 2002).

¹⁹¹ *Aero Prods. Int'l, Inc. v. Intex Recreation Corp.*, 466 F.3d 1000, 1016 (Fed. Cir. 2006).

¹⁹² See *id.* (“If a claim is amenable to construction, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, the claim is not indefinite.”).

¹⁹³ See *Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1371 (Fed. Cir. 2004).

Indefiniteness issues can arise from the wide variety of inadvertent mistakes and nonsensical statements that pervade patents. Courts must decide if the claims are so “insolubly ambiguous” that they are not amenable to construction or application to an infringement determination.¹⁹⁴ Some indefiniteness disputes arise in the context of typographical and printing errors that make a claim impossible to read or interpret. Minor errors are commonly overlooked so long as persons of skill in the art can still understand the claims.¹⁹⁵ However, where entire blocks of text are missing from claims, then the public cannot reasonably be expected to appreciate their scope, and the claims are invalid.¹⁹⁶

Another type of indefiniteness issue arises in the context of means-plus-function claims, where there is no structure in the specification corresponding to the claimed function. In such circumstances, the claim cannot be construed.¹⁹⁷

Claims may also be invalid for indefiniteness where the claim language is so inherently standardless that it cannot be meaningfully applied. These matters are often treated as “claim construction” questions, although they might more aptly be considered a question of whether the claims are indefinite as applied. For example, a claim requiring an “aesthetically pleasing” interface screen was found indefinite where even the patentee’s expert could not articulate how to determine infringement.¹⁹⁸ Another example is a claim directed to *both* a system and a method of using that system, which is invalid because the public cannot determine the acts that constitute infringement.¹⁹⁹ These latter examples are not so much “claim construction” issues, but rather are fundamental flaws in patent claims that make them impossible to apply. Nonetheless, these matters are commonly briefed during the claim construction process and, depending on the case, it may be appropriate to handle them along with other claim construction matters.

E. Deference to Prior Claim Construction Rulings

Where a claim term has been construed in a prior judicial proceeding, it is not uncommon for one or more of the litigants to assert that the court is bound by or, at a minimum, should accord substantial deference to that prior ruling. The Supreme Court’s *Markman* decision ostensibly encourages deference to prior claim construction in noting “the importance of uniformity in the treatment of a given patent as a reason to allocate all issues of construction to the court.”²⁰⁰ The Supreme Court acknowledged in the next paragraph, however, that “issue preclusion could not be asserted against new and independent infringement defendants even within a given jurisdiction.”

¹⁹⁴ *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357 (Fed. Cir. 2008).

¹⁹⁵ *See Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (refusing to invalidate claim where phrase “said zinc anode” lacked an antecedent basis).

¹⁹⁶ *Group One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1302 (Fed. Cir. 2005).

¹⁹⁷ *See Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1302-03 (Fed. Cir. 2005) (invalidating claim for indefiniteness for lack of a structure in the specification corresponding to the claimed function).

¹⁹⁸ *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1354 (Fed. Cir. 2005).

¹⁹⁹ *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383-84 (Fed. Cir. 2005).

²⁰⁰ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996).

Determining the standards for according deference to prior *Markman* orders as well as the application of such standards have proven to be complicated in practice. Parties, sometimes uncritically, invoke a variety of doctrines -- claim preclusion, *res judicata*, issue preclusion, collateral estoppel, judicial estoppel, and/or *stare decisis* – in efforts to constrain or obviate *Markman* determinations. The application of such doctrines is made all the more complicated by the intermediate nature of *Markman* rulings. *Markman* rulings are a means (construing claim terms) to an end (adjudicating patent validity and infringement or, more commonly, reaching a settlement agreement), not final judgments in and of themselves. Even though *Markman* orders often serve as the basis for summary judgment rulings, they are not always vital to the outcome and might be vacated as part of a settlement agreement. An additional complicating factor is the characterization of *Markman* rulings as questions of law. As a result, determining the preclusive effect of such orders requires navigation of overlapping and not entirely cohesive civil procedure doctrines.

Before turning to the particular legal standards for according deference to prior *Markman* determinations, it will be useful to clarify the relevant terminology. There are four distinct concepts: (1) claim preclusion (and the related concept of *res judicata*); (2) issue preclusion (and the related concepts of collateral and direct estoppel); (3) judicial estoppel; and (4) *stare decisis*. Issue preclusion, judicial estoppel, and *stare decisis* are pertinent to the appropriate deference to be accorded prior claim construction rulings; claim preclusion generally does not come into play in claim construction.

1. *Distinguishing Among Preclusion and Estoppel Doctrines*

Although *res judicata* has historically been interpreted broadly to encompass the binding effect of a judgment in a prior case on claims asserted in pending litigation (and hence encompassing both claim and issue preclusion), the modern trend limits *res judicata* to claim preclusion.²⁰¹ “Claim preclusion refers to the effect of a judgment in foreclosing litigation of a matter that never has been litigated, because of a determination that it should have been advanced in an earlier suit. Claim preclusion therefore encompasses the law of merger and bar.”²⁰² When a plaintiff prevails in a lawsuit arising from a particular transaction, all of the claims that the plaintiff raised *or could have raised* “merge” into that judgment and are “barred” from further litigation.²⁰³ If the plaintiff attempts to litigate any of those claims again, the judgment itself will serve as a defense. Since *Markman* rulings do not themselves resolve claims to relief (they merely interpret patent claim terms), they cannot be said to constitute “claim preclusion” judgments as that technical term is used in civil procedure terminology.²⁰⁴

²⁰¹ See MOORE’S FEDERAL PRACTICE §131.10[1][b].

²⁰² *Migra v. Warren City Sch. Dist. Bd. of Educ.*, 465 U.S. 75, 77 n. 1 (1984). The Restatement (Second) of Judgments adheres to the broader definition of *res judicata* as encompassing both claim and issue preclusion. See Restatement (Second) of Judgments, Ch. 3 intro. note (1982).

²⁰³ See *Waid v. Merrill Area Public Schools*, 91 F.3d 857, 863 (7th Cir. 1996).

²⁰⁴ Moreover, decisions by the International Trade Commission cannot have claim preclusive effect in district courts because the ITC cannot award damages. See *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558 (Fed. Cir. 1996); *Bio-Technology General Corp. v. Genentech, Inc.*, 80

By contrast, the related doctrine of issue preclusion arises with some frequency in *Markman* proceedings. “Issue preclusion refers to the effect of a judgment in foreclosing the relitigation of a matter that has been litigated and decided. This effect is also referred to as direct or collateral estoppel.”²⁰⁵ Where a patentee (including those in privity with her) has previously litigated the scope of a patent claim term, a defendant in a subsequent lawsuit relating to the same patent claim term might assert issue preclusion to foreclose relitigation of that matter.²⁰⁶ The test for issue preclusion, however, is relatively strict and authority is split on its role in the context of prior *Markman* rulings.

Judicial estoppel is an equitable doctrine that precludes a party from adopting a position that is inconsistent with a position taken in prior lawsuit, whether or not that issue had been actually litigated in the prior proceeding party.²⁰⁷ “Where a party assumes a certain position in a legal proceeding, and succeeds in maintaining that position, he may not thereafter, simply because his interests have changed, assume a contrary position, especially if it be to the prejudice of the party who has acquiesced in the position formerly taken by him.”²⁰⁸ The purpose of the doctrine is “to protect the integrity of the judicial process by prohibiting parties from deliberately changing positions according to the exigencies of the moment.”²⁰⁹

The doctrine of *stare decisis* promotes adherence to decided matters of law so as to foster stability and equal treatment. It takes its name from the Latin maxim, “*stare decisis et non quieta movere*” or “to abide by the precedents and not to disturb settled points.” The strength of such adherence depends on the source of the prior decision. *Stare decisis* compels lower courts to follow the decisions of higher courts on questions of law, whether applied to parties (or those in privity) or complete strangers to the prior proceeding. The decision of a district court is not binding precedent on a different judicial district, the same judicial district, or even the same judge in a different case under the doctrine of *stare decisis*. Rather, *stare decisis* requires only that the later court encountering the issue give consideration and careful analysis to that sister court’s decision where applicable to a similar fact pattern.²¹⁰

2. Issue Preclusion/Collateral Estoppel

Issue preclusion most commonly arises in the context of claim construction where a patentee who has previously litigated a patent through a *Markman* ruling seeks a fresh

F.3d 1553, 1563-64 (Fed.Cir.1996). Nonetheless, district courts can “attribute whatever persuasive value to the prior ITC decision that it considers justified.” *See Texas Instruments Inc.*, 90 F.3d at 1569.

²⁰⁵ *Migra v. Warren City Sch. Dist. Bd. of Educ.*, 465 U.S. 75, 77 n. 1 (1984); *see also* *Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.*, 170 F.3d 1373, 1379 (Fed.Cir. 1999).

²⁰⁶ A patentee cannot use issue preclusion offensively to foreclose a defendant who was not party to that prior litigation from litigating the scope of the patent claim. *See Tex. Instruments, Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 590 (E.D. Tex. 2002). Had the Federal Circuit construed that claim term, however, the defendant might be bound under the doctrine of *stare decisis*.

²⁰⁷ *See generally* MOORE’S FEDERAL PRACTICE §18-134.30.

²⁰⁸ *New Hampshire v. Maine*, 532 U.S. 742, 749 (2001) (quoting *Davis v. Wakelee*, 156 U.S. 680, 689 (1895)).

²⁰⁹ *Id.* at 749-50 (internal marks omitted).

²¹⁰ *See United States v. Rodriguez-Pacheco*, 475 F.3d 434, 441 (1st Cir. 2007).

opportunity to construe a claim and an opposing party argues that the prior construction should govern interpretation of the term in question.²¹¹ The previous litigation might have ended in a settlement agreement, including possibly an order vacating the claim construction ruling. The courts have divided on what effect, if any, to accord prior claim construction rulings.

The general standard for issue preclusion requires the party seeking to foreclose relitigation of an issue to prove: a) the issue sought to be precluded is identical to the issue decided in the prior action; b) the issue was actually litigated in that action; c) the party against whom collateral estoppel is sought had a full and fair opportunity to litigate the issue in the prior action; and d) the determination was essential to the final judgment of the prior action.²¹² Courts apply the collateral estoppel standard of the regional circuit since issue preclusion is a procedural matter.²¹³

a) Identity of Issues

The first prong of the issue preclusion test is satisfied where the patent claims (and claim terms) at issue in the *Markman* proceeding were interpreted in the prior case.²¹⁴ When new claim terms are at issue, then collateral estoppel does not apply.²¹⁵ Since different claims within the same patent may use the same language, the “identity of issues” prong may nonetheless be satisfied if the language and context of the language are identical.²¹⁶ Similarly, since different patents may emanate from the same specification, as in the case of divisional and continuation applications, the “identity of issues” prong may nonetheless be satisfied if the language and context of the language are identical.²¹⁷

b) Actual Litigation

To satisfy the “actual litigation” prong, the parties to the original litigation must have disputed the claim term at issue and it must have been adjudicated by the court.²¹⁸

²¹¹ Cf. *Blonder-Tongue Labs, Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 333 (1971) (holding that a patentee whose patent is invalidated after “a full and fair” opportunity to litigate its validity is collaterally estopped from relitigating the validity of the patent).

²¹² See *Innovad Inc. v. Microsoft Corp.*, 260 F.3d 1326, 1334 (Fed. Cir. 2001) (citing *In re Freeman*, 30 F.3d 1459, 1465 (Fed. Cir. 1994)).

²¹³ See *RF Del., Inc. v. Pac. Keystone Tech., Inc.*, 326 F.3d 1255, 1261 (Fed. Cir. 2003).

²¹⁴ See, e.g., *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 243 F. Supp. 2d 31, 35 (S.D.N.Y. 2003) (same patent claims at issue); *Kollmorgen Corp. v. Yaskawa Elec. Corp.*, 147 F. Supp. 2d 464, 466 (W.D. Va. 2001) (same); *Abbott Labs. v. Dey, L.P.*, 110 F. Supp. 2d 667, 669 (N.D. Ill. 2000) (“The claim construction issues disputed in this case are the same issues litigated in the [first] case.”).

²¹⁵ See, e.g., *P.A.T., Co. v. Ultrak, Inc.*, 948 F. Supp. 1518, 1520-21 (D. Kan. 1996).

²¹⁶ See *In re Freeman*, 30 F.3d 1459, 1465 n.4 (Fed. Cir. 1994).

²¹⁷ See *Masco Corp. v. United States*, 49 Fed. Cl. 337 (Ct. Fed. Cl. 2001) (applying collateral estoppel to a continuation patent (employing identical claim language) relating back to the patent construed in the earlier litigation).

²¹⁸ See, e.g., *In re Freeman*, 30 F.3d 1459, 1466 (Fed. Cir. 1994); *Kollmorgen Corp. v. Yaskawa Elec. Corp.*, 147 F. Supp. 2d 464, 466 (W.D. Va. 2001) (stating that the “actually litigated” prong was met after a lengthy *Markman* hearing on the claim construction); *Abbott Labs. v. Dey, L.P.*, 110 F. Supp. 2d 667, 669-

The “actual litigation” test is not satisfied where: an issue was raised but later abandoned,²¹⁹ the court in the earlier proceeding declined to rule on the issue,²²⁰ there is ambiguity as to what was actually litigated and decided.²²¹ Courts usually do not consider matters resolved by stipulation to have been actually litigated.²²² An exception exists, however, where the parties intend to foreclose future litigation of the issue.²²³

c) Full and Fair Opportunity to Litigate

Issue preclusion requires that the underlying proceeding have afforded the party to be foreclosed from relitigation a full and fair opportunity to litigate. This means that issue preclusion can never be applied against a party not involved (or in privity with those involved) in the prior proceeding. In *Blonder-Tongue Laboratories*, the Supreme Court identified a range of factors bearing on whether a patentee had a full and fair chance to litigate the validity of a patent: choice of forum; incentive to litigate; if the issue is obviousness, whether the first validity determination used the standards announced in *Graham v. John Deere Co.*,²²⁴ whether opinions filed in the first case suggest that the prior case was one of those rare instances where the court or jury failed to grasp the technical subject matter and issues; and whether, without fault of its own, the patentee was deprived of crucial evidence or witnesses in the prior litigation.²²⁵ The Court concluded that there is no “automatic formula” for assessing this prong and that “[i]n the end, decision will necessarily rest on the trial courts’ sense of justice and equity.”²²⁶ Where the prior court has conducted a *Markman* hearing in which the parties were afforded the ability to present their positions and respond, the “full and fair opportunity to litigate” requirement has been satisfied.²²⁷

Decisions by the International Trade Commission do not have preclusive effect on district courts, although district courts have discretion to attribute persuasive effect to ITC rulings. Congress passed the Trade Reform Act of 1974, amending the Tariff Act of 1930 to allow respondents in ITC proceedings to plead, and the ITC to consider, all legal

70 (N.D. Ill. 2000) (stating the “actually litigated” prong was met because the parties “briefed and argued the issues” before the judge); Restatement (Second) of Judgments §27 comment d (1980).

²¹⁹ see MOORE’S FEDERAL PRACTICE §132.03[2][e].

²²⁰ see §132.03[4][g].

²²¹ see §132.03[2][g].

²²² See, e.g., *United States v. Young*, 804 F.2d 116, 118 (8th Cir. 1986) (“A fact established in prior litigation not by judicial resolution but by stipulation has not been ‘actually litigated’ . . .”).

²²³ See *Hartley v. Mentor Corp.*, 869 F.2d 1469, 1470 (Fed. Cir. 1989); MOORE’S FEDERAL PRACTICE §132.03[2][i][ii].

²²⁴ 383 U.S. 1, 12-24 (1966).

²²⁵ 402 U.S. at 329-34.

²²⁶ 402 U.S. at 334.

²²⁷ See *Kollmorgen Corp. v. Yaskawa Elec. Corp.*, 147 F. Supp. 2d 464, 466 (W.D. Va. 2001) (stating that a lengthy *Markman* hearing on the claim construction satisfied the requirement); *TM Patents, L.P. v. IBM Corp.*, 72 F. Supp. 2d 370, 375 (S.D.N.Y. 1999) (noting that both parties agreed that there was a full and fair opportunity to litigate because a *Markman* hearing occurred).

and equitable defenses, including patent invalidity and unenforceability.²²⁸ In authorizing the Commission to consider these defenses, Congress cautioned that:

[I]n patent-based cases, the Commission considers, for its own purposes under section 337, the status of imports with respect to the claims of U.S. patents. The Commission's findings neither purport to be, nor can they be, regarded as binding interpretations of the U.S. patent laws in particular factual contexts. Therefore, it seems clear that any disposition of a Commission action by a Federal Court should not have res judicata or collateral estoppel effect in cases before such courts.²²⁹

Based on this legislative history, the Federal Circuit determined that Congress did not intend decisions of the ITC on patent issues to have preclusive effect.²³⁰

d) Determination Was Essential to the Final Judgment

The final prong of the issue preclusion test has attracted the most controversy in the claim construction context. It can usefully be divided into two separate inquiries: whether (1) the prior ruling was “final”; and (2) the prior ruling was essential to the judgment.

i) Finality

The question of whether a prior claim construction constitutes a final judgment can be characterized along a spectrum. At the easier end of the spectrum, where the court in the prior proceeding interprets the pertinent claim language and issues a final, appealable judgment on validity or infringement, the finality requirement is satisfied.²³¹ The preclusive effect of prior summary judgment, preliminary injunction, and settlement dispositions are less clear.

1. Summary Judgment

²²⁸ See Trade Reform Act of 1974.

²²⁹ S.Rep. No. 1298, 93d Cong., 2d Sess. 196 (1974), reprinted in 1974 U.S.C.C.A.N. 7186, 7329.

²³⁰ See *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1568 (Fed.Cir. 1996); *Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1019 (Fed.Cir. 1987) (“[O]ur appellate treatment of decisions of the Commission does not estop fresh consideration by other tribunals.”).

²³¹ See, e.g., *In re Freeman*, 30 F.3d 1459, 1466 (Fed. Cir. 1994) (“[J]udicial statements regarding the scope of patent claims are entitled to collateral estoppel effect in a subsequent infringement suit only to the extent that determination of scope was essential to a final judgment on the question of validity or infringement.”) (quoting *A.B. Dick Co. v. Burroughs Corp.*, 713 F.2d 700, 704 (Fed. Cir. 1983)); *Home Diagnostics Inc. v. Lifescan, Inc.*, 120 F. Supp. 2d 864, 870 (N.D. Cal. 2000) (noting there must be a final judgment on validity or infringement for collateral estoppel to apply).

Issue preclusion can also arise out of ruling granting summary judgment,²³² although denial of summary judgment or a grant of partial summary judgment usually does not have preclusive effect.²³³

2. Preliminary Injunction

The Federal Circuit held in *Transonic Sys. v. Non-Invasive Med. Techs. Corp.*,²³⁴ that claim constructions conducted for purposes of a preliminary injunction ruling are not binding, even in the same litigation. Drawing upon the Supreme Court's statement in *University of Texas v. Camenisch*,²³⁵ that "findings of fact and conclusions of law made by a court granting a preliminary injunction are not binding at trial on the merits," the Federal Circuit views claim constructions reached during appeals from a grant of a preliminary injunction to be tentative and hence not binding on the district court in subsequent proceedings.²³⁶ Therefore, claim constructions made in the context of preliminary injunction motions should not be considered final judgments as the district court remains "at liberty to change the construction of a claim term as the record in a case evolves after a preliminary injunction appeal."²³⁷

3. Settlement

Courts are deeply divided on the issue of finality when the outcome of the prior proceeding is a settlement. Several courts have interpreted the "finality" requirement liberally and functionally, looking to whether the previous judgment is sufficiently firm to be accorded preclusive effect. In *TM Patents, L.P. v. IBM Corp.*,²³⁸ the defendant sought to hold the patentee to a claim construction rendered in a case resolved through settlement. While recognizing that the settlement did not result in a final appealable judgment, the court nonetheless determined that the prior claim construction was entitled to preclusive effect. Seeking to elevate substance over form, the court focused upon the careful consideration of the issues during the prior litigation and drew upon the Supreme Court's policy ruminations in *Markman* emphasizing the importance of "uniformity in treatment of a given patent."²³⁹ The court recast "finality" for issue preclusion purposes as whether the prior litigation passed a stage for which there is "no really good reason for

²³² See *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 712 (Fed. Cir. 1983); *Security People, Inc. v. Medeco Security Locks, Inc.*, 59 F. Supp. 2d 1040 (N.D. Cal. 1999), *aff'd mem.*, 243 F.3d 555 (Fed. Cir. 2000).

²³³ See *Syntex Pharms. Int'l, Ltd. v. K-Line Pharms., Ltd.*, 905 F.2d 1525, 1526 (Fed. Cir. 1990) (noting that an order granting summary judgment of infringement of a patent and denying the alleged infringer's motion for summary judgment of invalidity did not present an appealable final judgment).

²³⁴ 75 F. App'x 765, 774 (Fed. Cir. 2003) (unpublished).

²³⁵ 451 U.S. 390, 395 (1981).

²³⁶ See *Guttman, Inc. v. Kopykake Enters.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002) ("District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves."); *Transonic Sys.*, 75 F. App'x at 774.

²³⁷ See *Transonic Sys.*, 75 F. App'x at 774.

²³⁸ 72 F. Supp. 2d 370, 375-77 (S.D.N.Y. 1999).

²³⁹ See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996).

permitting [an issue] to be litigated again.”²⁴⁰ The court noted as well that the patentee voluntarily entered into the settlement agreement and the *Markman* ruling was not vacated as part of the settlement.

Although some other courts have since followed *TM Patents*’ application of collateral estoppel in the context of settlements following *Markman* rulings,²⁴¹ a contrary line of cases emerged holding that *Markman* rulings from cases that settled were not final and hence not properly entitled to preclusive effect.²⁴² The cases read the Supreme Court’s policy discussion in the *Markman* case as merely recognizing the importance of uniformity, not changing the fundamental principles for issue preclusion. The *Graco Children’s Products* court expressed concern that granting preclusive effect to cases settled after claim constructions might discourage settlement and encourage appeals by patentees who obtained favorable verdicts but nonetheless needed to correct what they believed to be unduly narrow or otherwise flawed claim constructions.

The preclusive effect of claim construction rulings in cases resolved by settlement came before the Federal Circuit in *RF Delaware, Inc. v. Pacific Keystone Technologies, Inc.*²⁴³ Without expressly resolving the district court conflict, the Federal Circuit, applying Eleventh Circuit law, applied a stringent standard to the question of finality: “if the parties to a suit enter into an *extrajudicial settlement or compromise*, there is no judgment, and future litigation is not barred by *res judicata* or collateral estoppel . . .”²⁴⁴ The Federal Circuit drew no implication from the Supreme Court’s *Markman* language seized upon by the *TM Patents* court. Nonetheless, the court included some language inclining toward a functional approach to finality: “[f]or purposes of issue preclusion . . ., ‘final judgment’ includes any prior adjudication of an issue in another action that is determined to be sufficiently firm to be accorded conclusive effect.”²⁴⁵ Whether a decision is “sufficiently firm” depends on whether the parties were “fully heard.”²⁴⁶ The Federal Circuit noted that the Eleventh Circuit held that a prior district court order issued after an evidentiary hearing satisfied the finality standard because the district court notified the parties of possible preclusive effect, considered the findings final, and entered a final order approving the proposed settlement.²⁴⁷ In *RF Delaware*, the Federal Circuit denied preclusive effect of the earlier *Markman* ruling on the grounds that there was no evidence that a *Markman* hearing had been conducted in the earlier case, the

²⁴⁰ *TM Patents*, 72 F. Supp. 2d at 376 (quoting *Lummas Co. v. Commonwealth Oil Ref. Co.*, 297 F.2d 80, 89 (2d Cir. 1961)).

²⁴¹ *See, e.g.*, *Edberg v. CPI-The Alternative Supplier, Inc.*, 156 F. Supp. 2d 190 (D. Conn. 2001).

²⁴² *See Graco Children’s Prods., Inc. v. Regalo Int’l*, 77 F. Supp. 2d 660 (E.D. Pa. 1999); *Kollmorgen Corp. v. Yaskawa Elec. Corp.*, 147 F. Supp. 2d 464 (W.D. Va. 2001).

²⁴³ 326 F.3d 1255 (Fed. Cir. 2003). *See also Dana v. E.S. Originals, Inc.*, 342 F.3d 1320 (Fed. Cir. 2003).

²⁴⁴ *RF Delaware*, 326 F.3d at 1261 (quoting *Kaspar Wire Works, Inc. v. Leco Eng’g and Mach., Inc.*, 575 F.2d 530, 542 (5th Cir. 1978)) (emphasis in original).

²⁴⁵ *Id.* at 1261 (quoting *Christo v. Padgett*, 223 F.3d 1324, 1339 n.47 (11th Cir. 2002) (citing Restatement (Second) Judgments §13 (1980))).

²⁴⁶ *Id.*

²⁴⁷ *Id.* at 1261 (quoting *Christo v. Padgett*, 223 F.3d at 1339).

parties did not have notice that the court's order could have preclusive effect, and no final order approving the settlement was ever entered.

The Federal Circuit further addressed the preclusive effect of stipulated constructions and settlements in *Pfizer, Inc. v. Teva Pharmaceuticals, USA, Inc.*²⁴⁸ Because the parties in the prior proceeding had stipulated that the agreed claim interpretation was for purposes of that litigation only, the Federal Circuit held that the agreement could not preclude litigation in a later case. Looking to jurisprudence on the interpretation of consent decrees, the court declared that “‘the scope of a consent decree must be discerned within its four corners’ and the conditions upon which a party has consented to waive its right to litigate particular issues ‘must be respected.’”²⁴⁹

ii) Essential to the Final Judgment

A final requirement for a prior *Markman* ruling to foreclose later interpretation over a claim term is that the earlier construction was essential to the final judgment. When the prior action turns upon resolution of a particular claim term or terms, the court's construction of other claim terms is “merely dictum, and therefore has no issue preclusive effect.”²⁵⁰ To have a preclusive effect, the earlier court's interpretation of the particular claim had to be the reason for the previous outcome.²⁵¹

A related principle is that issues of claim construction that cannot be appealed cannot be accorded preclusive effect.²⁵² Thus, courts will not attach preclusive effect where a patentee loses on the issue of claim interpretation but nonetheless prevails on validity and infringement because the patentee lacked a basis for appealing the *Markman* ruling.²⁵³

e) Reasoned Deference as a Prudent Approach to Issue Preclusion

In cases in which the basis for applying issue preclusion is open to question, many courts have taken the approach of according prior *Markman* rulings “reasoned deference” in assessing the disputed claim terms.²⁵⁴ Where no new arguments are offered, no new foundation is laid, and there has been no change in the applicable standards for construing claims, courts generally adopt the prior construction unless it is clearly unsound. Where new argument and evidence is adduced, then the review is more probing

²⁴⁸ 429 F.3d 1364 (Fed. Cir. 2005).

²⁴⁹ *Id.* at 1376 (quoting *United States v. Armour & Co.*, 402 U.S. 673, 682 (1971) and citing *In re Graham*, 973 F.2d 1089, 1097 (3rd Cir.1992) (noting that the Third Circuit defers to the intent of parties concerning the preclusive effect of agreed facts or claims in consent decrees and stipulations)).

²⁵⁰ *See Phonometrics, Inc. v. Northern Telecom Inc.*, 133 F.3d 1459, 1464 (Fed. Cir. 1998).

²⁵¹ *Jackson Jordan, Inc. v. Plasser Am. Corp.*, 747 F.2d 1567, 1577 (Fed. Cir. 1984).

²⁵² *See Hartley v. Mentor Corp.*, 869 F.2d 1469, 1472 (Fed. Cir. 1989).

²⁵³ *See Graco Children's Prods., Inc. v. Regalo Int'l*, 77 F. Supp. 2d 660, 664-65 (E.D. Pa. 1999); *Schering Corp. v. Amgen, Inc.*, 35 F. Supp. 2d 375, 377 n.2 (D. Del. 1999), *aff'd in part*, 222 F.3d 1347 (Fed. Cir. 2000).

²⁵⁴ *See, e.g., Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting that “in the interests of uniformity and correctness,” the Federal Circuit “consults the claim analysis of different district courts on the identical terms in the context of the same patent.”); *Visto Corp. v. Sproqit Techs., Inc.*, 445 F. Supp. 2d 1104, 1108 (N.D. Cal. 2006).

and independent. Even in cases in which courts have determined that collateral estoppel applies, they have nonetheless made some independent assessment of claim construction. Thus, even the *TM Patents* court, which held that a *Markman* ruling from a earlier case that settled prior to trial precluded relitigation of claim meaning, used the “reasoned deference” approach as a judicial backstop: “Finally, I have to observe that this issue of collateral estoppel . . . is of marginal practical importance, because I agree with just about everything Judge Young did when he construed the claims in the EMC action.”²⁵⁵

3. *Judicial Estoppel*

The Federal Circuit has recognized the applicability of the equitable doctrine of judicial estoppel in the context of claim construction.²⁵⁶ As an equitable doctrine, the contours of judicial estoppel are relatively flexible. Although “[t]he circumstances under which judicial estoppel may appropriately be invoked are probably not reducible to any general formulation of principle,”²⁵⁷ the Supreme Court has emphasized three factors to consider in determining whether the doctrine applies: (1) whether a party's later position is “clearly inconsistent” with its earlier position; (2) whether the party succeeded in persuading a court to accept that party's earlier position, so that judicial acceptance of an inconsistent position in a later proceeding would create “the perception that either the first or second court was misled;” and (3) whether the party seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped.²⁵⁸

The requirements for judicial estoppel partially overlap with the standard for issue preclusion (such as the element of identity of issues), but there are substantial differences as well. Unlike issue preclusion, judicial estoppel does not require strict mutuality,²⁵⁹ or even that the issue had been actually litigated in the prior proceeding.²⁶⁰ On the other hand, judicial estoppel typically requires strong evidence of improper intent to mislead a tribunal.

Judicial estoppel is also closely related to equitable estoppel.²⁶¹ Unlike equitable estoppel, a party asserting judicial estoppel does not have to prove detrimental reliance because judicial estoppel is designed to protect the integrity of the courts rather than any interests of the litigants.²⁶² Therefore, judicial estoppel may apply in a particular case “where neither collateral estoppel nor equitable estoppel . . . would apply.”²⁶³

²⁵⁵ See *TM Patents, L.P. v. IBM Corp.*, 72 F. Supp. 2d at 370.

²⁵⁶ See *Biomedical Patent Mgmt. Corp. v. Cal. Dep't of Health Servs.*, 505 F.3d 1328, 1341 (Fed. Cir. 2007); *Harris Corp. v. Ericsson*, 417 F.3d 1241 (Fed. Cir. 2005); *RF Del., Inc. v. Pac. Keystone Tech., Inc.*, 326 F.3d 1255 (Fed. Cir. 2003).

²⁵⁷ *Allen v. Zurich Ins. Co.*, 667 F.2d 1162, 1166 (4th Cir. 1982).

²⁵⁸ See *New Hampshire v. Maine*, 532 U.S. at 750-51.

²⁵⁹ *Ryan Operations G.P. v. Santiam-Midwest Lumber Co.*, 81 F.3d 355, 360 (3d Cir. 1996) (stating that privity is not required for judicial estoppel).

²⁶⁰ See *Lowery v. Stovall*, 92 F.3d 219, 223 n.3 (4th Cir. 1996).

²⁶¹ See *id.*

²⁶² See *Teledyne Indus., Inc. v. NLRB*, 911 F.2d 1214, 1220 (6th Cir. 1990).

²⁶³ *Allen*, 667 F.2d at 1166-67.

As with issue preclusion and other non-patent procedural issues, courts apply the standards for judicial estoppel developed by their regional circuit.²⁶⁴ Such standards vary across the circuits. For example, although most circuits do not require mutuality of judicial estoppel, some courts limit the doctrine to those who were party to (or in privity with a party to) the prior proceeding.²⁶⁵ The relative importance of particular factors varies as well. Some circuits consider intent – whether the inconsistency in position was for the purpose of gaining unfair advantage – to be most determinative.²⁶⁶

4. *Stare Decisis*

Since claim construction is considered a question of law, lower courts must adhere to prior claim construction determinations by the Federal Circuit, even if the claim construction is applied to a party who was not involved in the prior litigation.²⁶⁷ The Supreme Court considered this a virtue of categorizing claim construction as a matter of law: “treating interpretive issues as purely legal will promote (though it will not guarantee) intrajurisdictional certainty through the application of *stare decisis* on those questions not yet subject to interjurisdictional uniformity under the authority of the single appeals court.”²⁶⁸

A decision of a district court is not binding precedent on a different judicial district, the same judicial district, or even the same judge in a different case under the doctrine of *stare decisis*. Rather, *stare decisis* requires only that the later court encountering the issue give consideration and careful analysis to that sister court’s decision where applicable to a similar fact pattern.²⁶⁹ Courts sometimes accord prior

²⁶⁴ See *Lampi Corp. v. Am. Power Prods., Inc.*, 228 F.3d 1365, 1377 (Fed. Cir. 2000).

²⁶⁵ See *Nichols v. Scott*, 69 F.3d 1255, 1272 n.33 (5th Cir. 1995).

²⁶⁶ See *Lowery* 92 F.3d at 224. The Federal Circuit holds that judicial estoppel does not normally prevent a party from altering on appeal an unsuccessful position on claim construction that it advocated before the trial court. See *RF Del., Inc. v. Pac. Keystone Tech., Inc.*, 326 F.3d 1255, 1262 (Fed. Cir. 2003) (quoting *Data Gen. Corp. v. Johnson*, 78 F.3d 1556, 1565 (Fed.Cir.1996)) (“The doctrine of judicial estoppel is that where a party *successfully* urges a particular position in a legal proceeding, it is estopped from taking a contrary position in a subsequent proceeding where its interests have changed.”) (emphasis in original).

²⁶⁷ See *Amgen, Inc. v. F. Hoffmann-La Roche Ltd.*, 494 F. Supp. 2d 54, 60 (D. Mass. 2007); *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 185 F. Supp. 2d 588, 595 (D. Md. 2002); *Wang Labs., Inc. v. Oki Elec. Indus. Co., Ltd.*, 15 F. Supp. 2d 166, 175 (D. Mass. 1998) (holding that a prior Federal Circuit claim construction binding against a party that was not a party to (or allowed intervention in) prior litigation interpreting the claim term in question).

²⁶⁸ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996); see also *Visto Corp. v. Sproqit Techs., Inc.*, 445 F. Supp. 2d 1104, 1106 (N.D. Cal. 2006) (observing that “interjurisdictional uniformity” refers to claim constructions reviewed by the Federal Circuit).

²⁶⁹ See *Amgen, Inc. v. F. Hoffmann-La Roche Ltd.*, 494 F. Supp. 2d 54, 60 (D. Mass. 2007) (citing *United States v. Rodriguez-Pacheco*, 475 F.3d 434, 441 (1st Cir. 2007)); *Tex. Instruments, Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 589 (E.D. Tex. 2002); cf. *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting that “in the interests of uniformity and correctness,” the Federal Circuit “consults the claim analysis of different district courts on the identical terms in the context of the same patent.”).

decisions from within their district somewhat greater consideration than those decided outside the district.²⁷⁰

Just as issue preclusion requires an issue to have been actually *litigated* in order for collateral estoppel to attach, stipulations of claim meaning may not be entitled to *stare decisis* effect “because it is only the judiciary – not the parties – that declares what the law is.”²⁷¹ The court in this case noted, however, that “[s]uch agreements, of course, may, where appropriate, implicate judicial estoppel and, where a final judgment occurs, the doctrine of issue preclusion.” Also as with issue preclusion, *stare decisis* applies only to rulings that were necessary to the decision rendered.²⁷²

A distinct tension arises to the extent that courts look to prior *Markman* rulings under the doctrine of *stare decisis* in circumstances that do not satisfy the more exacting requirements of issue preclusion. In practice, courts have alleviated this strain by affording a party who did not participate in that earlier action a full and fair opportunity to be heard in the later proceeding. At the same time, the court can be mindful of prior rulings.²⁷³

III. CLAIM CONSTRUCTION PROCEDURE

As in most areas of litigation, procedure plays a critical role in the quality and efficiency of claim construction and the ultimate resolution of patent disputes. In the decade plus since *Markman*, courts have experimented with various approaches to the claim construction process. Most notably, the Northern District of California developed Patent Local Rules (PLRs) for the primary purpose of structuring the disclosure of contentions leading up to claim construction (so-called *Markman*) hearings.²⁷⁴ Eleven other districts have since adopted Patent Local Rules modeled in varying degrees on the N.D. Cal. PLRs.²⁷⁵ Beyond PLRs, courts have experimented with: different approaches to

²⁷⁰ See, e.g., *Visto Corp. v. Sprokit Techs., Inc.*, 445 F. Supp. 2d 1104, 1107-08 (N.D. Cal. 2006) (noting that intra-judicial uniformity warrants an even higher level of deference); *Verizon Cal. Inc. v. Ronald A. Katz Tech. Licensing, P.A.*, 326 F. Supp. 2d 1060, 1069 (C.D. Cal. 2003).

²⁷¹ *Amgen, Inc. v. F. Hoffmann-La Roche Ltd.*, 494 F. Supp. 2d 54, 70 (D. Mass. 2007).

²⁷² See *Miken Composites, L.L.C. v. Wilson Sporting Goods Co.*, 515 F.3d 1331, 1338 n* (Fed. Cir. 2008); *Zenith Radio Corp. v. United States*, 783 F.2d 184, 187 (Fed. Cir. 1986) (holding that *stare decisis* applied where resolution of issue was a “necessary predicate” to earlier Federal Circuit ruling).

²⁷³ See *Tex. Instruments, Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 590 (E.D. Tex. 2002).

²⁷⁴ See Northern District of California, Patent Local Rules (revised March 2008).

²⁷⁵ See S.D. Cal. <http://www.casd.uscourts.gov/uploads/Rules/Local%20Rules/LocalRules.pdf>; N.D. Ga. <http://www.gand.uscourts.gov/pdf/NDGARulesPatent.pdf>; N.D. Ill. http://www.ilnd.uscourts.gov/home/_assets/_documents/Rules/Patent.pdf (proposed); D. Mass. <http://www.mad.uscourts.gov/general/pdf/PubNotice-NewPatent-LR16.6.pdf>; E.D. Mo. <http://www.moed.uscourts.gov/judges/cas.html> (Judge Charles Shaw); E.D. N.C. http://www.nced.uscourts.gov/flashhtml/LocalRules/NCED-Local_Rules.htm; D. N.J. <http://www.njd.uscourts.gov/LocalRules.html>; W.D. Pa. <http://www.pawd.uscourts.gov/Documents/Forms/Irmanual.pdf>; E.D. Tex. <http://www.txed.uscourts.gov/Rules/LocalRules/Documents/Appendix%20M.pdf>; S.D. Tex. <http://www.txsd.uscourts.gov/district/rulesproc/patent.htm>; W.D. Wash. <http://www.wawd.uscourts.gov/ReferenceMaterials/SupplementalPatentRules.htm>

the timing of *Markman* hearings; the use of tutorials, experts, and advisors in claim construction; and integrating *Markman* determinations with resolution of dispositive motions that can turn on claim construction. Drawing upon our survey of court practices, meetings with judges in the most patent-intensive districts, and discussions with patent litigators, this section explores the landscape of case management approaches and describes established and emerging best practices for the process of claim construction.

A. Patent Local Rules

In an effort to provide fair and efficient management of patent cases, some districts have adopted Patent Local Rules (PLRs) or have adopted standard practices under the Federal Rules and Civil Local Rules that have markedly affected the conduct of patent cases (e.g., Eastern District of Virginia). The impetus for PLRs arose out of a clash between the liberal notice pleading policy underlying the Federal Rules of Civil Procedure and the need for patent litigants to have more specific notice of the issues they were litigating.²⁷⁶ Under the Federal Rules of Civil Procedure, a patent plaintiff need only plead that a defendant is infringing its patent.²⁷⁷ The plaintiff has not traditionally been required to specify which claims are infringed. Nor has the plaintiff needed to plead its theory of the meaning of the claim terms and the features of the defendant's products (or even the products themselves) that are alleged to infringe. Because a plaintiff may assert multiple claims in multiple patents, a defendant reading a notice pleading complaint is typically left to guess as to the boundaries of a plaintiff's case and the available defenses.

A patent plaintiff reading a notice pleading answer and counterclaim is equally in the dark about the substance of the defendant's case. The defendant, for example, need not identify the prior art on which its invalidity defense relies. Nor does the defendant have to plead its theories of claim construction or which combinations of prior art references might invalidate each of the claims. Only the defense of unenforceability due to inequitable conduct in procurement of the patent has to be pled with particularity, because it is viewed as a species of fraud.²⁷⁸

Initial disclosures required under Fed. R. Civ. P. 26 do not alleviate this problem. Routine discovery procedures such as service of contention interrogatories or expert discovery could ultimately provide the necessary information. However, contention interrogatories are often not required to be meaningfully answered until the late stages of discovery. Expert discovery provides an opportunity to focus the case, but arises on the verge of trial, and the associated delay can be highly prejudicial to litigants.

As a result, absent forced, early substantive disclosure, patent litigants have been known to engage in a "shifting sands" approach to litigation based on "vexatious

²⁷⁶ *O2 Micro Int'l Ltd. v. Monolithic Power Sys.*, 467 F.3d 1355, 1365-66 (Fed. Cir. 2006).

²⁷⁷ *See* Fed. R. Civ. P. 8 & Form 16; *see also* *Phonometrics, Inc. v. Hospitality Franchise Sys., Inc.*, 203 F.3d 790, 794 (Fed. Cir. 2000); *Gammino v. Cellco P'ship*, 2005 U.S. Dist. LEXIS 21557, **5-8 (E.D. Pa. 2005); *but cf.* *Bell Atl. Corp. v. Twombly*, 127 S.Ct. 1955 (2007) (raising the quantum of factual matter that must be pled (in the context of a Sherman Act cause of action) to survive a motion to dismiss).

²⁷⁸ *See, e.g.,* *MedImmune, Inc. v. Centocor, Inc.*, 271 F.Supp.2d 762, 772 (D. Md. 2003); *Environ Prods., Inc. v. Total Containment, Inc.*, 951 F. Supp. 57, 59 (E.D. Pa.1996).

shuffling of positions.”²⁷⁹ That is, litigants may offer initial, substantially hedged, theories of infringement or invalidity, only to change those theories later by asserting different patent claims, different prior art, or different claim constructions if their initial positions founder. Resulting extensions of fact and expert discovery can unduly prolong the litigation, unnecessarily sapping the court’s and the parties’ resources.

PLRs were developed to facilitate efficient discovery by requiring patent litigants to promptly disclose the bases underlying their claims. By requiring parties to disclose contentions in an orderly, sequenced manner, PLRs prevent the “shifting sands” tendencies. Neither litigant can engage in a strategic game of saying it will not disclose its contentions until the other side reveals its arguments. In discussing the Northern District of California’s PLRs, the Federal Circuit explained that they are designed to require

both the plaintiff and the defendant in patent cases to provide early notice of their infringement and invalidity contentions, and to proceed with diligence in amending those contentions when new information comes to light in the course of discovery. The rules thus seek to balance the right to develop new information in discovery with the need for certainty as to the legal theories.²⁸⁰

PLRs adopted by a district, or by an individual judge as a standing order or a case-specific order, supplement the Federal Rules of Civil Procedure. Courts may modify the procedures dictated by PLRs as necessary to suit the issues presented in a particular case.²⁸¹ All modifications, as well as the rules or standing orders, must of course be consistent with Federal Circuit case law to the extent an issue “pertains to or is unique to patent law.”²⁸² For example, Federal Circuit law was applied in cases addressing whether claim charts exchanged by parties pursuant to PLRs could be amended to add new statutory bases for invalidity and infringement.²⁸³ In these situations, the Federal Circuit held that the sufficiency of notice regarding defenses or theories of liability under specific statutory provisions of patent law “clearly implicat[ed] the jurisprudential responsibilities of this court within its exclusive jurisdiction.”²⁸⁴

²⁷⁹ See *LG Elecs., Inc. v. Q-Lity Computer, Inc.*, 211 F.R.D. 360, 367 (N.D. Cal. 2002).

²⁸⁰ *O2 Micro Int’l, Ltd. v. Monolithic Power Sys.*, 467 F.3d 1355, 1365-1366 (Fed. Cir.2006); see also *Nova Measuring Instruments Ltd. v. Nanometrics, Inc.*, 417 F. Supp. 2d 1121, 1123 (N.D. Cal. 2006) (“The [patent local] rules are designed to require parties to crystallize their theories of the case early in the litigation and to adhere to those theories once they have been disclosed.”).

²⁸¹ See, e.g., N.D. Cal. Patent L.R. 1.2.

²⁸² See *O2 Micro*, 467 F.3d at 1364 (citing *Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1363 (Fed. Cir. 2004)).

²⁸³ See, e.g., *Genentech, Inc. v. Amgen, Inc.*, 289 F.3d 761, 774 (Fed. Cir. 2002); *Advanced Cardiovascular Sys. v. Medtronic, Inc.*, 265 F.3d 1294, 1303 (Fed. Cir. 2001).

²⁸⁴ *Advanced Cardiovascular*, 265 F.3d at 1303; see also *In re Spalding Sports Worldwide, Inc.*, 203 F.3d 800, 803-04 (Fed. Cir. 2000) (applying Federal Circuit law to a question of attorney-client privilege between patentee and patent attorney).

Chart 10 depicts a typical timeline for a patent case utilizing patent-specific initial disclosures, a structured claim construction briefing process including a joint claim construction statement, and a *Markman* hearing. The process depicted here is consistent with the requirements of PLRs in the Northern District of California.

Chart 10
Patent Local Rules Timetable,
Northern District of California

(1) Case Management Conference	Set by Court	Patent Local Rule
(2) Disclosure of Asserted Claims and Infringement Contentions	Within 10 days of (1)	3-1 & 3-2
(3) Invalidity Contentions	Within 45 days of (2)	3-3 & 3-4
(4) Identify Claim Terms to be Construed	Within 10 days of (3)	4-1
(5) Preliminary Claim Constructions	Within 20 days of (4)	4-2
(6) Joint Claim Construction Statement	Within 60 days of (3)	4-3
(7) Close of Claim Construction Discovery	Within 30 days of (6)	4-4
(8) Opening Claim Construction Brief	Within 45 days of (6)	4-5(a)
(9) Responsive Claim Construction Brief	Within 14 days of (8)	4-5(b)
(10) Reply Claim Construction Brief	Within 7 days of (9)	4-5(c)
(11) <i>Markman</i> Hearing	Within 14 days of (10)	4-6
(12) Claim Construction Order	TBD by Court	
(13) Produce Advice of Counsel, if any	Within 50 days of (12)	3-7

An accelerated timeline may be appropriate for less complex cases, for example where the technology is quite simple or there is little dispute as to the structure, function, or operation of accused devices. Under a particularly streamlined plan, the parties would not make patent-specific initial disclosures or file joint claim construction statements. The court might also forgo a *Markman* hearing and address claim construction as part of summary judgment.²⁸⁵ Chart 11 provides an example of such a timeline. The decision to adopt an accelerated timeline can best be made after discussion with the parties of the substantive issues that will drive the case.

Chart 11
Accelerated Patent Case Management Timeline

²⁸⁵ See Section III.D.

(1) Case Management Conference (CMC)	Set by court
(2) Produce Opinion of Counsel, if any	Within 2 months after CMC
(3) Close of Fact Discovery	5 months after CMC
(4) Close of Expert Discovery	2 months after (3)
(5) Opening Briefs on Claim Construction and Summary Judgment	Within 30 days of (4)
(6) Responsive Briefs on Claim Construction and Summary Judgment	Within 14 days of (5)
(7) Reply Briefs on Claim Construction and Summary Judgment	Within 7 days of (6)
(8) Claim Construction and Summary Judgment Hearing	Within 14 days of (7)
(9) Claim Construction and Summary Judgment Order	TBD by court

B. Timing of *Markman* Hearings

Perhaps the most important case management decision relating to the *Markman* process is its timing. More than a decade of practice has taught important lessons on when to hold the *Markman* hearing and has shown the need for flexibility to accommodate the needs of different cases.

Early *Markman* hearings (*i.e.*, within about five months of the case management conference) may be appropriate in some contexts. In cases that appear to present a well-crystallized question of claim construction that may resolve liability without the need for extensive discovery, an early *Markman* hearing may be advantageous. Providing parties with an early ruling on key claim construction issues can promote settlement and avoid the cost and burden of lengthy discovery. However, in practice, these advantages are often outweighed by several disadvantages. Knowing what issues to present at a *Markman* hearing frequently requires extensive discovery into the nature of the accused device and of the prior art. Thus, an early *Markman* ruling often will need revisiting when new issues emerge.

In practice, the dominant and recommended approach is to hold *Markman* hearings mid-way through, or toward the end, of fact discovery, prior to expert discovery. This affords the advantage of allowing sufficient discovery in advance of claim construction proceedings to more fully identify the issues that need to be resolved. Such mid-phase *Markman* hearings allow a more focused expert discovery process (assuming that the *Markman* ruling is issued in advance). This approach avoids the need for having expert witnesses prepare reports that address, in the alternative, the different possible outcomes of the claim construction hearing, or worse, of having to redo expert discovery following a *Markman* decision.

Some courts defer *Markman* hearings until completion of expert discovery and resolve the disputes in conjunction with summary judgment briefing or immediately before trial. Although there may be some advantages to holding a *Markman* hearing at or near the end of a case (such as framing claim construction disputes in the context of dispositive motions), in practice this approach has been found to have too many drawbacks. Importantly, holding a late-phase *Markman* hearing may deprive litigants of enough time to settle the case before trial. Late-phase *Markman* rulings are likely to upset the experts' positions and may inject new issues into the case, especially where the court arrives at its own construction that does not squarely adopt what either of the parties proposed.²⁸⁶

C. Streamlining the Pre-*Markman* Process

In order to promote efficient and effective *Markman* hearings, many courts address the procedures and ground rules for such proceedings at a relatively early stage in case management. Patent Local Rules place particular emphasis on timely and orderly identification of disputed claim terms. We begin this section with further discussion of best practices to bring those disputes and the parties' arguments to the surface prior to the *Markman* hearing. Depending on the complexity of the technology at issue, it is often useful to plan for technology tutorials in conjunction with the *Markman* proceeding. We discuss several practical issues relating to the timing, form, and conduct of such tutorials and the use of court-appointed experts to assist in claim construction.

1. *Mandatory Disclosure of Positions*

The primary goals of the procedures before a *Markman* hearing are to: (1) ensure that the parties' claim construction positions are squarely joined, reducing false and hidden disputes; and (2) resolve any disputes about how the *Markman* hearing should be conducted so the hearing itself is efficient, helpful to the court, and without procedural disarray.

The following steps have proven especially effective in accomplishing these objectives.

a) Early Disclosure of Infringement and Invalidity Contentions

Requiring disclosure of infringement contentions at the start of the case is a proven way to focus at least some of the disputes at issue for the *Markman* hearing. In jurisdictions that have not adopted Patent Local Rules, courts are free to build these disclosure requirements into their scheduling orders. These infringement contentions require the patentee to specify, among other things, each claim of each patent in suit that is allegedly infringed; each instrumentality that allegedly infringes each asserted claim;

²⁸⁶ See *Magarl, L.L.C. v. Crane Co.*, 2004 U.S. Dist. LEXIS 24283, *44 (S.D. Ind., 2004) (encouraging holding *Markman* hearings in advance of summary judgment briefing, because a "claim construction which precedes summary judgment could avoid unnecessary alternative briefing and evidentiary submissions, including expert witness testimony addressed to or based on rejected claim constructions.").

and a claim chart detailing where each element of an asserted claim is found in each accused instrumentality.²⁸⁷

With its infringement contentions, the party must produce, among other things, all documents evidencing the conception and reduction to practice of each asserted claim, along with documents sufficient to show the disclosure of the claimed inventions to others prior to filing of the patent application. Similarly, the court can help focus *Markman* issues by requiring the alleged infringer to disclose invalidity contentions after receipt of the infringement contentions. This requires the alleged infringer to specify, among other things, the identity of each item of prior art that allegedly anticipates each asserted claim or renders it obvious, and any grounds for invalidity due to indefiniteness, enablement, or written description.²⁸⁸ With its invalidity contentions, the accused infringer must produce all prior art not already of record, as well as documents sufficient to show the operation of the accused devices.

These disclosures force parties to crystallize their theories early in the case, and thereby to identify the matters that need to be resolved through the *Markman* hearing. They also help streamline discovery by mandating the disclosures that are core to patent cases, thus reducing the need for interrogatories, document requests, and contention depositions. Early infringement contentions can, however, lead to more discovery because they may occur before parties fully understand their own positions. In practice, this may lead to under-production of evidence.

b) Disclosure of Claims to Construe and Proposed Constructions

A widespread problem in patent cases is that the parties' *Markman* briefing may not effectively join the issues to be litigated at the *Markman* hearing, or may not confront claim construction issues that will ultimately be litigated at trial. To avoid this problem, it is advisable that the court set a meet-and-confer schedule in its scheduling order to require parties to identify terms that need construction. These procedures help to ensure that the issues for the *Markman* hearing be specified in advance of the briefing cycle, as opposed to having issues disclosed for the first time in briefing. Ordering a meet-and-confer process also helps to ensure that the parties' briefing is not wastefully directed to false or merely hypothetical disputes. Ordering parties to disclose their claim construction positions also discourages "hidden" disputes that may otherwise arise at trial. This structured meet-and-confer process is part of the Patent Local Rules of the Northern District of California and the Eastern District of Texas, and is required within 10 days of service of the invalidity contentions.²⁸⁹

As part of this process, the court's scheduling order should set a date for the parties to exchange proposed constructions of the identified terms. Setting this date approximately 20 days after exchanging lists of terms is appropriate. As part of this disclosure, some jurisdictions also require that the parties disclose their supporting evidence, including whether they will be relying on expert witnesses.

²⁸⁷ See e.g., Northern District of California Patent Local Rule 3-1.

²⁸⁸ See §112.

²⁸⁹ See Northern District of California Patent Local Rules 4-1 to 4-3.

c) Mechanisms for Limiting the number of Claims Terms to Construe

Cases commonly involve multiple patents, dozens or even hundreds of claims, and multitudes of claim terms that may need construction. If left unmanaged, the sheer complexity of this tangle of terms can overwhelm the merits of a lawsuit. Courts should exercise their inherent case management authority to limit the number of claims and claim terms at issue, as appropriate.

At the *Markman* phase, courts have wide discretion to limit the number of claim terms at issue. Restricting the scope of the *Markman* hearing may have the benefit of focusing the court's attention on the key issues (which may dispose of the case), and of allowing a more prompt and well-reasoned ruling on the central matters in the case. Courts have experimented widely with various approaches to managing the scope of *Markman* hearings. By contrast, asking the parties to brief all the potential claim construction disputes invites false or inconsequential disputes, particularly because parties reflexively seek to avoid the risk of a waiver finding if they refrain from raising peripheral disputes.

The Northern District of California has recently adopted local rules requiring parties to identify "the terms whose construction will be most significant to the resolution of the case up to a maximum of 10."²⁹⁰ The 10-term limit is a default rule that can be adjusted upwards or downwards depending on the circumstances of the case. The number should vary depending on the number of patents in dispute. Ten can be high for single patent cases, but low for multi-patent cases. The parties are required to meet and confer to identify the 10 most significant terms in dispute. In addition to any terms that the parties mutually agree upon as being the most significant, the parties are each allocated half of the remaining terms of the 10, and can identify additional terms they wish to have construed under this allocation. This is not a fixed limit altogether of the number of terms to be construed, and litigants may seek to construe terms at later phases in the case. However, for purposes of the main *Markman* hearing, this channeling of the most significant terms allows courts to deploy their resources most efficiently to resolve the key disputes in the case.

There are many factors that may influence whether to increase the number of terms to be construed. For example, means-plus-function claims²⁹¹ generally must be construed in order to identify the corresponding structure in the specification. Also, allowing each party to have a fixed number of claim terms to be construed may not make sense. In many cases, a plaintiff will assert dozens of patent claims, often out of multiple patents, and may not want to construe any of the terms, seeking to leave their interpretation to the jury. Typically, the defendant is the party with a greater interest in having claims construed, and it may be prejudicial to the defendant to limit its ability to only have ten claim terms construed (particularly where the plaintiff has asserted a large number of claims). Thus, a rigid, formulaic approach will not accommodate all cases,

²⁹⁰ N.D. Cal. Patent Local Rules 4-3(c) (Mar. 2008).

²⁹¹ See §112 ¶6.

and the parties should be allowed, where appropriate, to structure the *Markman* proceedings in a flexible manner to suit the unique aspects of the case.

Other mechanisms for managing the scope of *Markman* proceedings include page limits on briefing, and time restrictions at the *Markman* hearing. Parties will naturally allocate limited presentation times (written or oral) to the key disputes, and limits on briefing or oral argument will have some effect at streamlining the *Markman* proceedings. However, when parties feel that they could be faced with a waiver situation if all disputed terms are not addressed at the *Markman* proceedings, there will inherently be a tendency to cram additional arguments into the written or oral presentations. Ultimately, this is a less helpful mechanism than limiting the number of terms that the court will address in the main *Markman* proceeding.

Courts risk upsetting trial dates and may invite reversal if they overly constrain or defer the *Markman* process. Ultimately, all material claim construction disputes must be ruled upon by the court for cases that go to trial.²⁹² It is legal error for the court to allow the parties to argue competing claim construction positions to the jury.²⁹³ The more that outstanding claim construction issues are deferred until the late phases of litigation, or are not resolved until trial, the greater the likelihood of legal error and that trial will be a game of surprise. Resolving the material claim construction disputes well in advance of trial will prevent procedural aberrations from overwhelming the merits of a case and minimize the risk of reversal and the need for retrial.

i) Severance Versus Postponement

Courts faced with a case involving many patents, frequently with diverse technologies, have struggled to find ways to reduce the case to a manageable size that the court and a jury can handle in one trial. Often the court is able to persuade the parties to reduce the number of patents to be tried to a manageable number, but if that is unsuccessful, the court does not have the power to order a party not to pursue a patent claim it has lawfully filed. District courts typically have addressed this issue in the context of multi-patent disputes in one of two ways: (1) limiting the total number of disputed terms to be construed, and hoping that those terms will resolve the dispute; or (2) allowing the parties to select a limited subset of patents to be tried in the first instance, and severing the remaining patents for a subsequent trial if needed. The primary risk in the first approach is that the chosen terms will not resolve the dispute, in which case the court will be faced with two unattractive options: either doing claim construction hurriedly at the end of the pretrial schedule, which disrupts expert reports, summary judgment, and other pretrial scheduling, or postponing the trial for another round of claim construction. The Federal Circuit has made clear that the district court may not proceed to

²⁹² See *O2 Micro Int'l. Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1360-61 (Fed. Cir. 2008).

²⁹³ See *CytoLogix Corp. v. Ventana Med. Sys., Inc.*, 424 F.3d 1168, 1172 (Fed. Cir. 2005) (“[B]y agreement the parties also presented expert witnesses who testified before the jury regarding claim construction, and counsel argued conflicting claim constructions to the jury. This was improper, and the district court should have refused to allow such testimony despite the agreement of the parties.”).

trial without resolving any remaining claim construction disputes.²⁹⁴ In general, courts have gravitated toward the severance and stay option, and have found that the subsequent trials are not needed.

d) Recommended Approach: Mandatory Disclosure of Impact of Proposed Constructions

Many infringement and invalidity disputes hinge on legal questions of claim interpretation and can be properly resolved on summary judgment. Requiring parties to state the anticipated impact of their proposed constructions on the merits of the case enables the court to better appreciate the ramifications of its claim construction. Integrating claim construction with consideration of those dispositive motions dictated by claim construction streamlines adjudication.

It is recommended that parties state the reasons for seeking construction of any terms that are litigated in the *Markman* process, regardless of whether they are being asserted for summary judgment purposes. This approach not only give courts the context for making important rulings in the *Markman* process, but also minimizes unnecessary disputes. In practice, parties are often unable to articulate why their definition is materially different from their opponent's, but may nonetheless adhere to it. Left unresolved, these less-than-meaningful discrepancies in wording may result in wasteful briefing and unnecessary consumption of the court's time. Requiring disclosure of *why* these terms need to be construed should reduce false disputes. Where there is not a meaningful dispute underlying a party's request for a construction, courts may be well within their authority to decline construing that term.²⁹⁵

Terms that are to be construed for summary judgment purposes should be specifically identified, along with a statement of which party (or both) would be seeking summary judgment on the basis of that term, and why. As an example of the form of disclosure recommended, Table C illustrates a sample claim chart showing a term to be construed ("steering wheel"), along with the defendant's reasons for seeking summary judgment.

²⁹⁴ See *O2 Micro Int'l*, 521 F.3d at 1360-63.

²⁹⁵ See *Vivid Tech.s, Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("AS&E is correct that although the claims are construed objectively and without reference to the accused device, only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

Table C Summary Judgment Term: “steering wheel”		
	Plaintiff	Defendant
Proposed construction	any device for directing a vehicle	a circular device for directing a vehicle
Summary Judgment Context (noninfringement)		Accused device lacks a circular steering device, so summary judgment of no infringement is proper.
Summary Judgment Context (invalidity)		If plaintiff’s proposed construction prevails, then ABC reference anticipates the claims as a matter of law.

Many claim terms will not be the focus of summary judgment motions, but are the focus of claims or defenses that will be presented at trial. There may also be collateral reasons for parties to seek construction of terms, such as ensuring that a defendant’s future products will be safely outside the scope of an asserted patent. Courts should require the parties to disclose why they are seeking constructions of these other terms.

One approach used in some courts to focus the *Markman* inquiry is to conduct a short telephone conference with the parties after they file the list of terms to be construed and the reasons for their submission, prior to the briefing cycle. During this call, the court can state which summary judgment motions it is willing to entertain in connection with the *Markman* proceedings. Moreover, forcing the parties to explain why they need to have terms construed would go a long way towards eliminating unnecessary disputes. Minor disputes over wording choices can also be resolved in this manner.

This process integrates the summary judgment process along with *Markman*. The court may wish to schedule summary judgment briefing in tandem with claim construction briefing, or may wish to stagger summary judgment briefing to take place shortly after the *Markman* hearing.

An open question is whether courts could or should penalize a party for failing to take advantage of opportunities to bring summary judgment in connection with the *Markman* process. We expect that parties would take advantage of a formalized summary judgment process in connection with *Markman*, and parties should be encouraged to do so. However, there are many reasons why parties may legitimately want to defer filing a summary judgment motion until later in the case, even where a claim construction question is at the heart of the dispute. It may be difficult to craft a summary judgment position until the claim construction ruling issues. Also, it is frequently desirable to close out fact discovery before filing summary judgment motions

to preclude unforeseen facts from being “lobbed in” to defeat a summary judgment motion. Courts should address with care any efforts to penalize a party that does not file an early summary judgment motion in connection with the *Markman* process.

2. Use of Tutorials, Experts, and Advisers in Claim Construction

Claim terms are interpreted from the perspective of a person having ordinary skill in the art as of the time the invention was made. Thus, the parties will need to educate the court about the science, technology, and perspective of a person having ordinary skill in the art as of the time period of the invention. The most common vehicle for accomplishing this task is the use of technology tutorials typically done in connection with a *Markman* hearing. In addition, courts occasionally go a significant step further and appoint a technical advisor, special master, or expert for the court. Table D summarizes the principal characteristics of these educational aids.

Table D Educating the Court and Court-Appoint Experts		
Nature of Expert/ Legal Authority	Process/Role	Procedural Safeguards
1. Tutorial Process	<ul style="list-style-type: none"> presented by counsel, experts for each side, or agreed expert demonstratives often useful (e.g., Powerpoint presentation, simulation video, CD that can be reviewed later) 	<ul style="list-style-type: none"> typically scheduled within two weeks of <i>Markman</i> hearing usually best to allow each side to make their own presentation, with court actively questioning advance disclosure (at least 48 hours) of demonstratives often useful to video proceedings for later review
2. Technical Advisor <ul style="list-style-type: none"> pursuant to inherent powers <i>TechSearch v. Intel</i>, 286 F.3d 1381 (Fed Cir 2002) (approved for use in <i>Markman</i>) 	<ul style="list-style-type: none"> “sounding board” and tutor who aids the court in understanding “jargon and theory” not analogous to law clerk because advisor’s superior technical knowledge can override judge’s prerogative 	<ul style="list-style-type: none"> fair and open procedure for appointment; address allegations of bias, lack of qualifications court must clearly define and limit duties in writing guard against ex parte communications; advisor cannot contribute evidence or conduct independent investigation make explicit (perhaps through a report or record), the nature and content of the advisor’s tutelage concerning technology
3. Special Master <ul style="list-style-type: none"> FRCP 53 	<ul style="list-style-type: none"> prepares report and recommendations (e.g., proposed claim construction) <ul style="list-style-type: none"> Court adopts, rejects, or modifies 	<ul style="list-style-type: none"> parties must be given opportunity to object court may receive additional evidence factual and legal issues decided <i>de novo</i> procedural decisions reviewed for abuse of discretion
4. Expert Witness <ul style="list-style-type: none"> FRE 706 	<ul style="list-style-type: none"> instructed by court in writing provides findings to parties and court court or any party may call expert as a witness 	<ul style="list-style-type: none"> court must allow parties to present views may be deposed by any party

a) Technology Tutorials

Technology tutorials can be especially helpful in educating the court about the underlying technology. While tutorials will always be shaped by the issues the parties are litigating, the goal of the tutorial should be to give the court neutral, useful background information about the technology.

Cases vary widely on the need for technology tutorials. Some cases need little more than a brief introduction by the lawyers at the *Markman* hearing. Others may

benefit from a lengthy, separate presentation with animations and live witnesses. A common practice is to schedule the technology tutorial within two weeks of the *Markman* hearing. It is often best to have the attorneys give the main presentations, with each side's technical expert in attendance for questioning. This approach recognizes that attorneys will generally be the most efficient at tailoring the background technology presentation to the issues the court will confront in *Markman* and throughout the remainder of the case. Having each side's expert in attendance allows the court to ask questions about the science, technical background, and technical terminology. Not all courts share this view, and some discourage attorneys from presenting the tutorial.²⁹⁶ Several courts have successfully utilized what is referred to as the "hot tub" method, in which experts for each side engage in a dialogue with the court moderating the discussion and probing to determine areas of agreement and disagreement.

The education process involving complex technologies can be improved through the use of video animations, which has the benefit of giving the court a tutorial that can be played at any time, including for newly-arrived law clerks. However, videos are a costly and time-consuming undertaking for the parties and may be less useful than allowing in-court presentations, with the opportunity for live questioning by the court. Some courts videotape in-court tutorials (or use a simple web-cam), to achieve the benefits of having a live presentation where the court's questions can be answered, and preserving a copy of the presentation for chambers' use (which captures more than a bare transcript might).

As discussed below, some courts appoint technical experts in patent cases. It is not recommended that the court use a court-appointed expert to deliver the tutorial. Preparing for these tutorials is a lengthy and expensive undertaking, typically with large investments in graphics and multimedia teaching tools. This function cannot be readily delegated to a court-appointed expert under a cost-sharing agreement by the parties, because the parties would never agree on what should be taught, or how the message should be conveyed. Moreover, allowing a court-appointed expert to present the tutorial would inject substantial uncertainty into the proceedings, and would leave the parties to try to present their own views of the technology through cross-examination of the court-appointed expert, which would detract from the neutral presentation that these tutorials contemplate. It is better to allow each side to present their own view of the technology.

It is important to bear in mind that the Federal Circuit faces comparable challenges as those encountered by district courts in understanding the background technology in patent cases. The appellate court lacks the opportunity to hear from science and technology experts about the background of the technology. Therefore, it will be valuable for the background information to be filed with the court to make it part of the record so that it can be reviewed on appeal. Concise tutorial videos prepared by the parties can be particularly valuable. In addition, transcripts of hearings and Powerpoint slides (in notebook and digital format if animated) can assist the Federal

²⁹⁶ See Standing Order for Patent Cases for Judges Armstrong, Hamilton, and White in the Northern District of California.

Circuit in comprehending the background science and more fully understanding the basis for the district court's claim construction.

b) Court-Appointed Experts

Due to the challenges of understanding the technical issues in particularly complex patent cases, some courts have turned to the appointment of experts. As reflected in Table D, there are three options: (1) technical advisor; (2) special master; and (3) expert witness. These roles vary significantly.

i) Technical Advisor

Given the demands of *Markman* proceedings to construe claims from the perspective of a person of ordinary skill in the art, there can be an appropriate role for technically skilled persons to assist the court, particularly in technologically complex cases.²⁹⁷ Appointing a technical advisor for *Markman* proceedings has been expressly approved by the Federal Circuit in *TechSearch LLP v. Intel Corp.*,²⁹⁸ although the court emphasized the need to establish “safeguards to prevent the technical advisor from introducing new evidence and to assure that the technical advisor does not influence the district court's review of the factual disputes.”²⁹⁹ Applying Ninth Circuit law, the Federal Circuit noted the following guidelines for appointing a technical advisor: use of a fair and open procedure for appointing a neutral technical advisor addressing any allegations of bias, partiality, or lack of qualifications; clearly define and limit the technical advisor's duties in a writing disclosed to all parties; guard against extra-record information; and make explicit, perhaps through a report or record, the nature and content of the technical advisor's tutelage concerning the technology.³⁰⁰ The Federal Circuit cautioned, however, that “district courts should use this inherent authority sparingly and then only in exceptionally technically complicated cases.”³⁰¹

The proper role of the advisor is to be a sounding board or tutor who aids the judge's understanding of the technology. This includes explanation of the jargon used in the field, the underlying theory or science of the invention, or other technical aspects of the evidence being presented by the parties. The advisor can also assist the judge's analysis by helping think through critical technical problems. In this latter function, case law admonishes that the court must be careful to assure that the decision-making is not delegated to the advisor.

A common concern with the appointment of a technical adviser is that the judge's role in applying the legal rules of claim construction may be surrendered to the technical expert, who could then have undue influence over the proceedings. Although in form the

²⁹⁷ See generally John Shepard Wiley, Jr., *Taming Patent: Six Steps For Surviving Scary Patent Cases*, 50 UCLA L. REV. 1413 (2002).

²⁹⁸ 286 F.3d 1381 (Fed. Cir. 2002).

²⁹⁹ *Id.* at 1377.

³⁰⁰ *Id.* at 1379 (citing *Ass'n of Mexican Am. Educators v. California*, 231 F.3d 572, 611 (9th Cir. 2000) (*en banc*)).

³⁰¹ *Id.* at 1378.

relationship between a judge and a technical advisor is much like the interaction between a judge and law clerk, that the former relationship differs in that because of a judge's knowledge of law, a clerk cannot usurp the judicial role. Unlike the judge's law clerk, who may have undergraduate and possibly some graduate training in the relevant field and understands his or her role in assisting the judge through legal education and familiarity with the judicial system, a technical advisor will typically be a nationally or internationally known scientist or engineer with limited exposure to legal institutions. They are less likely to appreciate the nature of judicial decision-making and the unique, constitutionally grounded, authority of the court. Perhaps recognizing that parties often do not voluntarily raise these issues to the court, some judges are now including in their standard scheduling order a date for parties to submit agreed-upon names of technical advisors.

A related concern with the use of court-appointed advisors for claim construction is that they distance the judge from some of the most important decisions relating to the case. It is essential for the court to be fully engaged in the interpretation of claim language as these determinations often play a decisive role in the litigation, may require adjustment or further analysis later in the case, and affect the conduct of the trial (e.g., relevance of expert testimony, jury instructions, what arguments can be made to the jury). For this reason, some experienced patent jurists have disavowed use of advisors in claim construction and caution against their use.

A third concern relates to the transparency of the technical advisor process. The *TechSearch* decision emphasizes the need to guard against extra-record information and make explicit the nature and content of the technical advisor's tutelage concerning the technology. These principles run counter to using the technical advisor in the same manner as a law clerk, in which the court has informal, off-the-record communication with a member of his or her staff. A technical advisor is not a member of the court's staff. One solution to this concern would be to have all interactions between the judge and the technical advisor in open court with counsel present. Such a procedure, however, could make use of the technical advisor so inconvenient and costly as to render it infeasible. An alternative approach is to have all interactions between the court and the special master transcribed, along with a record made of all correspondence, documents reviewed, and other materials considered by the technical advisor and discussed with the court. A third variation on this alternative, used by at one court, is to have transcripts of interaction between the court and the technical advisor sealed and released to the parties only after the trial court proceedings have concluded. This approach has the advantage of enabling the court some flexibility in use of the technical advisor while assuring that the parties will have a full opportunity to review that interaction prior to potential appeal.

ii) Special Master

Some courts, pursuant to FRCP 53, have delegated initial consideration of claim construction to a special master. Such special masters often have general legal training as well as experience with patent law specifically. They might also be familiar with the technical field in question. The special master will typically conduct a claim construction process, with briefing and argument. The special master will then prepare a formal report with recommendations regarding the construction of disputed claim terms. After the

parties have had an opportunity to object to that report the court will often conduct a hearing at which the court may receive additional evidence and then adopt, reject, or modify the recommended claim constructions.

The use of a special master for the purpose of claim construction alleviates some of the due process concerns inherent in the use of a technical advisor. The special master does not engage in off-the-record communications with the court. On the other hand, the use of a special master runs an even greater risk of distancing the court from the details of claim construction. This limits the court's involvement in some of the most critical aspects of many patent cases and can create problems should claim construction require adjustment later in the case. It may limit the court's ability to gain command over the background science and technology, which could be important later in the case – such as in addressing non-obviousness.

iii) Expert Witness

A third option is the formal appointment of an expert pursuant to FRE 706. This procedure is not usually appropriate for the *Markman* process. If there is a role for expert witnesses at the *Markman* hearing, it is likely that the parties will provide their own experts, on their own budgets, on their own initiative. Because the court will be free to question the experts at the *Markman* hearing, the court should be able to fully explore whatever questions it has on the underlying technology. Of course, courts are free to submit questions to the parties in advance of the hearing to ensure that the experts are fully prepared to respond to the courts' questions. Because the court should be able to resolve its questions through the parties' own witnesses, it is unnecessary to enlist a court-appointed expert to fill this role. These experts can be enormously expensive, and preparing for the all-important confrontation of this expert would drive up costs tremendously. Court-appointed experts have lately been used in at least one jury trial, where there was a serious risk of juror confusion,³⁰² but the justifications for using a court-appointed testifying expert are lacking in a *Markman* hearing, where the judge should be fully briefed on the issues and is free to question the witness.

D. Summary Judgment and Claim Construction

Effective utilization of the summary judgment process is especially important in patent cases because they present so many complex issues. Summary judgment can play a critical role in narrowing or simplifying the issues in claim construction, thereby promoting settlement or simplifying the trial. On the other hand, the summary judgment process in a patent case can put a significant burden on the court, particularly if the parties file numerous, voluminous motions.

1. Summary Judgment and Claim Construction

As with any case, the timing of summary judgment motions can be critical. Holding summary judgment proceedings too early for a given case and questions of fact

³⁰² See *Monolithic Power Sys., Inc. v. 02 Micro Int'l Ltd.*, 558 F.3d 1341, 1348 (Fed. Cir. 2009).

that would have been resolved at a later stage preclude summary judgment. Deferring summary judgment too long in a given case may waste time and resources of the parties and the court on issues that could have been resolved with little discovery.

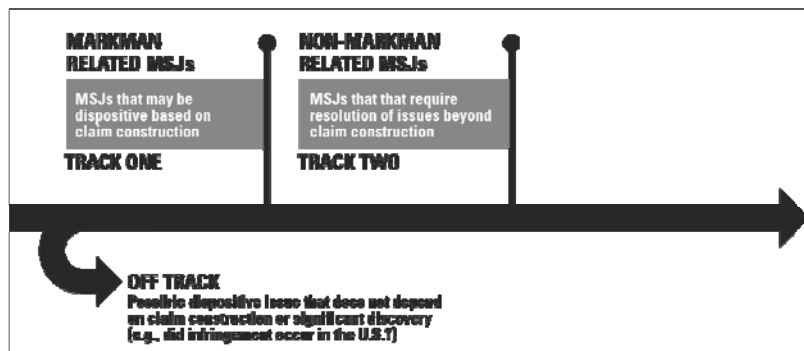
Claim construction plays a central role in scheduling and managing summary judgment motions. Generally, the pretrial issues requiring the largest investment of judicial resources in a patent case are claim construction and summary judgment. Furthermore, most of the weighty issues in a patent case—the technical aspects of infringement, and most allegations of invalidity—depend in some way on claim construction. As a result, summary judgment on the main issues in a patent case (infringement and validity) generally cannot be resolved without construing at least some disputed claim terms.

Resolving claim construction issues does not by itself resolve a case, however, unless it fosters settlement. Moreover, not all claim construction disputes are essential to a case—sometimes construing just a single disputed claim term is all that is needed to decide a case dispositive summary judgment motion. Thus, it can be inefficient to spend the judicial resources needed to resolve all of the claim construction disputes in a case before considering summary judgment motions that could obviate further trial court proceedings.

2. *Recommended Dual-Track Approach to Summary Judgment*

The tension between devoting judicial and party resources to claim construction while at the same time preparing for dispositive motions can be productively resolved by using a dual-track approach to the summary judgment process. On the first track, the fast-track, are motions that depend primarily or exclusively on claim construction. On the second track are motions that require resolution of substantial issues beyond claim construction. In rare cases, it may be worthwhile to consider a summary judgment outside either of these tracks—what we refer to as “off-track” summary judgment motions. Figure 1 illustrates the tracks along a time line.

Figure 1
Multi-Track MSJ Process for Patent Cases



a) “First-Track” Summary Judgment Motions

“First-track” motions are typically non-infringement motions. For example, in *Planet Bingo v. Gametech Int’l*, the claims at issue required “establishing a predetermined combination as a winning combination.”³⁰³ The accused bingo machines determined winning combinations after the bingo game began. The parties disputed whether this could be encompassed by the claim term “predetermined.” The district court construed “predetermined” to mean a determination made before the game began. This precluded literal infringement. Based on this construction, and a finding that making a determination *after* the bingo game began could not be equivalent to making the determination *before* the game began, the district court granted summary judgment of non-infringement. The Federal Circuit affirmed.³⁰⁴ In this case, all that needed to be resolved was the construction of “predetermined” and the issue of what could be “equivalent” to “predetermined”— all other disputes, claim construction or otherwise, were mooted.³⁰⁵

In most cases, first-track motions should be resolved as a part of, or in temporal proximity to, the claim construction process. Waiting to address such motions a significant time after claim construction eliminates the potential efficiency of resolving the case based on the construction of a single term or a small set of terms. If the court does not have first-track summary judgment issues properly before it during the claim construction process, the court may find itself addressing most or all of the claim construction disputes presented by the parties, only to later find that only one of those disputes actually mattered to the resolution of the case. Thus, while claim construction is often complex in and of itself, hearing a first-track summary judgment motion concurrently with claim construction has the potential to significantly reduce the expenditure of judicial and parties’ resources by eliminating the need to consider all the claim construction issues.

Another possibility is to hear first-track motions before claim construction. This is generally not recommended, though it may make sense in some cases if the court is able to determine early in the case that there is a first-track motion with a strong chance of success. The reason this approach is generally not recommended is that it can disrupt and delay the case if the summary judgment motion is denied. Many districts have established local rules for patent cases that set up a structured series of disclosures leading up to claim construction briefing and a hearing. Such procedures are recommended even if they are not required by the district’s local rules. It generally does not make sense to postpone or interfere with this process just because one party argues that it has a strong first-track motion. Hearing first-track summary judgment motions with claim construction strikes a good balance. The case will remain on track even if the motion is denied or taken under submission at the hearing, and at the same time the

³⁰³ 472 F.3d 1338, 1340 (Fed. Cir. 2006).

³⁰⁴ See *Planet Bingo v. Gametech Int’l. Inc.*, 472 F.3d 1338 (Fed. Cir. 2006).

³⁰⁵ See also, e.g., *Schoenhaus v. Genesco, Inc.*, 440 F.3d 1354, 1356 (Fed. Cir. 2006) (affirming issuance of “carefully crafted summary judgment opinion” that “construed two limitations of claim 1 of the patent” in lieu of a claim construction order).

summary judgment hearing has been held early enough that the court can avoid unnecessary effort. If the court decides to grant the motion after the hearing, it need only issue an opinion on the claim terms whose construction is necessary to resolve the summary judgment motion. If, on the other hand, the court decides not to grant the motion, then the case can proceed like any other case with the issuance of a claim construction order.

Another benefit of hearing first-track summary judgment motions with claim construction is it can give the court important context for understanding the parties' claim construction disputes. Technically, the accused product is not a factor in claim construction.³⁰⁶ Nonetheless, the Federal Circuit has expressly directed district judges to construe claims with an understanding of the ultimate issues and disputes in a case.³⁰⁷ Indeed, it is "highly undesirable" to consider claim construction issues "without knowledge of the accused devices,"³⁰⁸ because these provide the "proper context for an accurate claim construction."³⁰⁹ Summary judgment briefing can be an effective vehicle for revealing the motivations underlying claim construction disputes. Of course, information about the issues in the case need not be provided to the court by summary judgment motions. For example, the court can obtain this information through a tutorial, at a case-management conference, or through the claim construction briefing or hearing.

b) "Second-Track" Summary Judgment Motions

"Second-track" summary judgment motions involve substantial issues beyond how a claim is construed, and therefore should not normally be considered as part of the claim construction process. Claim construction issues are often interrelated and involve a common set of legal principles and evidence. It makes sense to consider them together. Second-track summary judgment motions involve different sets of legal principles and evidence in addition to underlying claim construction issues. Moreover, as discussed previously, most courts have found that it is best to resolve claim construction issues midway through a case, both to facilitate settlement and so that the parties can prepare for trial knowing what the claim construction is. Unless the second-track motion is straightforward and unaffected by claim construction (for example, a challenge to standing), making the effort to consider a second-track summary judgment motion before issuing a claim construction order diverts judicial resources from that goal.

c) Implementing a Dual-Track Approach to Summary Judgment

This dual-track approach to summary judgment in patent cases depends on the ability to distinguish between first-track and second-track motions and to enforce the distinction. It also requires the court to manage the case so that any first-track summary judgment motions are briefed prior to or simultaneous with the claim construction

³⁰⁶ *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1580 (Fed. Cir. 1991) ("The words of the claims are construed independent of the accused product.").

³⁰⁷ *Id.* ("Of course the particular accused product (or process) is kept in mind, for it is efficient to focus on the construction of only the disputed elements or limitations of the claims").

³⁰⁸ *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1350 (Fed. Cir. 2006).

³⁰⁹ *Lava Trading, Inc. v. Sonic Trading Mgmt. LLC*, 445 F.3d 1348, 1350 (Fed. Cir. 2006).

process, and so that Fed. R. Civ. P. 56(f) issues do not derail the court's ability to grant a meritorious first-track motion and dispose of the case early on.

The most essential component of this is providing early notice to the parties of the procedure the court intends to follow. The court should explain the first-track motion concept to the parties in a standing order for patent cases, at the initial case-management conference, or both.

There should also be a deadline in the case schedule for a summary judgment motion believed to be a first-track motion. To avoid unfairness and/or problems with Fed. R. Civ. P. 56(f), there should also be a deadline for providing notice to the other party of the basis for any planned first track motion, including at least the identity of any witnesses who will submit evidence in support of the motion. These deadlines could be the same, provided that the deadline is far enough in advance of the claim construction hearing to allow the opposing party time to perform reasonably necessary discovery, such as deposing the witnesses who submit declarations in support of the first track motion.

Courts also need to set expectations to avoid having the parties submit multiple first track summary judgment motions. One option is to limit each party to a single motion. Once the briefing is complete, the court could review it and decide whether to consider it along with claim construction. Another option is to require a party to obtain leave of court before filing a first track motion. For example, the court could require that a party wishing to file a first track motion submit a two- or three-page letter brief with the court within two weeks of submitting the Joint Claim Construction Statement required under some courts' Patent Local Rules. The letter brief would describe the proposed "first track" motion and why it should be heard with claim construction. The court could then evaluate how to proceed. This would also afford the opposing party notice of the basis of the motion, to avoid Fed. R. Civ. P. 56(f) problems.

d) Recognizing First Track Summary Judgment Motions

Non-infringement motions based on a small set of claim terms are the most likely to be first track motions. This is because judgment of non-infringement is appropriate if any single claim limitation is not met. Often, the same or similar claim limitations appear in each of the independent claims. If those claim limitations are not met, literal infringement (and quite possibly non-literal infringement) cannot be established and the case, or at least some aspects of it, is resolved. Dependent claims need not be considered because they cannot be infringed if the independent claims are not infringed.

While non-infringement motions are the most common, first-track motions can also include certain invalidity motions, particularly motions for indefiniteness or lack of written description under § 112, or motions asserting the claims are not patentable subject matter under § 101. Even enablement motions under § 112 can be amenable to early resolution. Whether a claim is patentable subject matter under § 101 is a question of law.³¹⁰ Enablement and indefiniteness are also both ultimately legal conclusions for the

³¹⁰ *In re Bilski*, 545 F.3d 943, 951 (Fed. Cir. 2008) (§ 101 standard).

court, albeit based on underlying facts.³¹¹ While the issue of written description is a question of fact, a patent can nonetheless be held invalid “on its face” for lack of adequate written description.³¹² Importantly, enablement, indefiniteness, and written description are issues that often turn on the meaning of a single claim limitation that appears throughout the claims in dispute. For example, modifying the *Planet Bingo* facts slightly, the defendant could have argued that if “predetermined combination” was construed to include winning combinations generated after the bingo game began, the claim was not supported by the patent’s written description. If the patent only described determining winning combinations before the game started, and emphasized the benefits of determining the combinations before the game started, the written description motion could be meritorious and would dispose of the case.

Similarly, motions that argue that claims are not patentable under 35 U.S.C. § 101 are often resolvable without claim construction.³¹³ Even if some claim construction is required, it may still make sense to consider a § 101 motion as a first-track motion. For example, one court granted summary judgment of invalidity under § 101 using the constructions proposed by the plaintiff, the non-moving party.³¹⁴ It is possible, albeit unlikely, for virtually any infringement or validity motion to fall into this category. The key questions are how many disputes the court needs to resolve, and of what type. Normally, a motion based on anticipation or obviousness will not be a first track motion because to prove either, the moving must show that every limitation in every claim is present in the prior art. This typically gives rise to a host of disputes, at least some of which are not governed primarily by claim construction issues. Thus, these motions are normally not first-track motions. However, it is possible for a question of anticipation or obviousness to turn on a small number of issues that are manageable early on in the case. For example, if it is beyond reasonable dispute that the patented invention is a specific improvement on a specific prior art device, the validity of the patent may turn on whether the specific improvement is obvious. Now that the Supreme Court has emphasized that obviousness is a legal conclusion for the courts, it is much more likely that fact patterns will arise where even under the patentee’s version of the facts, it is clear that the claimed inventions are obvious.³¹⁵

3. *Summary Judgment Independent from Claim Construction (Off-Track)*

The discussion above focuses on motions which depend on claim construction. In a patent case, this includes most case dispositive issues. However, there are issues that typically do not require the claims to be construed before the motion is decided. For

³¹¹ *Warner-Lambert Co. v. Teva Pharms. USA, Inc.*, 418 F.3d 1326, 1337 (Fed. Cir. 2006) (enablement standard); *Datamize, LLC v. Plumtree Software*, 417 F.3d 1342 (Fed. Cir. 2005) (indefiniteness standard).

³¹² *Univ. of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916, 927 (Fed. Cir. 2004) (describing written description standard and listing cases where a patent was held invalid “on its face” under this standard).

³¹³ *See, e.g., Fort Properties, Inc. v. American Master Lease, LLC*, 2009 WL 249205 (C.D. Cal. Jan. 22 2009) (invalidating claims under § 101 without discussion of claim construction).

³¹⁴ *See CyberSource Corp. v. Retail Decisions, Inc.*, No. C-04-03268-MHP (N.D. Cal. Mar. 27, 2009).

³¹⁵ *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 425, 127 S. Ct. 1727, 1745 (2007); *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1362 (Fed. Cir. 2007).

example, a territoriality issue—did the alleged infringement occur “in the United States”?—often will not involve claim construction.

For such motions, the above first-track/second-track approach does not apply as directly. Still, it remains true that making the effort to consider a summary judgment motion before issuing a claim construction order diverts the resources of both the court and the parties from the goal of teeing up and resolving the claim construction issues by the mid-point in a case. Thus, in general, considering an off-track summary judgment motion before claim construction may make sense if the issue is potentially dispositive of the case as a whole or of a significant issue or issues.

In any event, it is important that courts recognize the disconnect that may occur between *Markman* disputes and summary judgment positions. As noted above, *Markman* hearings tend to funnel down to the meaning of isolated terms or phrases in a claim. By contrast, infringement and validity positions often tend to focus on the overall structure or flow of a claim. Resolving a *Markman* dispute as to a particular term may not be sufficient for a party to bring a summary judgment motion relating to the same term. Parties may rightly seek to have a term defined through the *Markman* proceedings, and then wait for trial to press their claims or defenses on the merits to the jury. Absent exceptional circumstances, courts should not penalize parties for deciding not to bring summary judgment motions relating to the terms that are construed in the *Markman* process. Likewise, there may be good reason for parties to forego a *Markman* dispute where the meaning of the words in the claim is not in dispute, but rather the overall claim structure is the focus of a non-infringement or invalidity position.

E. Conduct of the *Markman* Hearing

As courts have experimented with *Markman* hearings, they have had to determine how such proceedings should be characterized and what rules apply.

1. “Evidentiary” Nature of Markman hearings

The “evidentiary” nature of *Markman* hearings is a concept in flux. *Markman* hearings are referred to as “evidentiary hearings.”³¹⁶ Nonetheless, the Federal Circuit has ruled that claim construction is strictly a matter of law.³¹⁷ This view, however, has increasingly been questioned.³¹⁸ A widely-held understanding has been that consideration of fact-intensive “extrinsic” evidence was generally taboo.³¹⁹ That line of authority (especially as articulated in *Vitronics Corp. v. Conceptronics, Inc.*³²⁰), has been

³¹⁶ See, e.g., *EMI Group N. Am., Inc. v. Intel Corp.*, 157 F.3d 887, 891-92 (Fed. Cir. 1998).

³¹⁷ *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448 (1998) (*en banc*).

³¹⁸ See *infra* Section III.B.2.

³¹⁹ “Intrinsic” evidence refers to the patent and its file history, including any reexaminations and reissues. Intrinsic evidence also includes related patents and their prosecution histories. In addition, the Federal Circuit generally treats as intrinsic evidence the prior art that is cited or incorporated by reference in the patent-in-suit and prosecution history. “Extrinsic evidence” refers to all other types of evidence, including inventor testimony, expert testimony, and documentary evidence of how the patentee and alleged infringer have used the claim terms. Dictionaries are considered to be “extrinsic” evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (*en banc*).

³²⁰ 90 F.3d 1576 (Fed. Cir. 1996).

repeatedly discredited and overruled by the Federal Circuit.³²¹ In recent years the Federal Circuit has allowed consideration of extrinsic evidence, and *Phillips* should put to rest any doubt that extrinsic evidence is proper for consideration.³²² Indeed, several members of the Federal Circuit believe that the time is ripe to reconsider *Cybor*'s rule of *de novo* review for claim construction.³²³ Relying on extrinsic evidence (especially by considering the parties' expert submissions and making credibility determinations as to their respective merit) may be a way of bolstering the "factual" nature of *Markman* rulings and improving chances of deferential review on appeal.³²⁴ Nonetheless, intrinsic evidence should ordinarily be the primary focus of claim construction determinations.³²⁵

A frequent and related question is whether, and to what extent, courts should apply the FRE in *Markman* proceedings. The dominant and recommended approach is to apply the FRE loosely, in part because *Markman* hearings are not heard by a jury. Furthermore, requiring available witnesses to appear live at a *Markman* hearing and discovery to overcome hearsay and other objections would significantly increase the cost and burden of conducting the hearing. Thus, absent particular concerns about the unreliability of certain forms of proffered evidence, we recommend taking a liberal approach to applying the FRE in *Markman* proceedings, such as allowing use of depositions instead of live testimony and declarations (as long as there has been an opportunity for cross-examination) and freer use of documents without a foundational witness as long as there is not a dispute about the authenticity of the document.

2. Safeguards on Extrinsic Evidence

The court should provide safeguards to ensure that extrinsic evidence is reliable. Allowing depositions of experts prior to a *Markman* hearing reduces this risk and may eliminate the need to call witnesses at the *Markman* hearing. If expert testimony occurs, parties should be permitted to cross-examine any witnesses and allow examination into any sources of documentary evidence that may be proffered. Courts need to scrutinize expert submissions and should actively question the opinions of experts. Typically, experts are highly paid consultants and there is an inherent risk that their opinions will be biased and unreliable. Thus, while it may be extremely probative to hear from persons who are truly experts in the particular field of technology at issue, courts must actively guard against the risk of bias. Cross-examination will usually be a sufficient mechanism to expose bias and unreliability, and conversely, to confirm that an expert's opinions are sound. Courts may choose to apply a *Daubert* standard for qualifying expert witnesses to present expert opinions in a *Markman* hearing. Because *Markman* hearings are not heard

³²¹ See, e.g., *AFG Indus., Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239 (Fed. Cir. 2001).

³²² See *Phillips*, 415 F.3d at 1303 (Fed. Cir. 2005) (*en banc*).

³²³ See *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039, 1041 (Fed. Cir. 2006) (denying petition for rehearing *en banc*).

³²⁴ See *Ortho-McNeil Pharm., Inc. v. Caraco Pharm.*, 476 F.3d 1321 (Fed. Cir. 2007) (affirming construction based in part on expert testimony that claim term "about 1:5" means "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

³²⁵ See, 415 F.3d at 1319; *infra* Section III.B.

by a jury, the need for applying *Daubert* is not as compelling as for a jury trial; however, it would be within the trial court's discretionary powers to exclude any testimony of an witness whose proffered opinions lack the hallmarks of reliability and relevance mandated by *Daubert*.

3. *Evidence of the Accused Device*

Another common question is whether, and to what extent, the court should consider the accused device during the *Markman* hearing. In theory, the accused device should have no role in the *Markman* process because the claims should be construed based on the patent language and relevant supporting documentation. Older *en banc* authority from the Federal Circuit holds that the accused device should not be considered during claim construction.³²⁶ More recently, the Federal Circuit expressly approved consideration of the accused device during claim construction.³²⁷ As stressed by this more recent authority, it is often useful for trial courts to understand the context of the infringement dispute to know what it is that they are deciding when ruling on claim construction. Moreover, knowing the context of the infringement (or validity) dispute gives courts a better sense of whether they even need to construe a term, or if they can simply let the “plain meaning” of a term speak for itself. But the accused device has no relevance to how a person having ordinary skill in the art would interpret claim terms.

4. *Evidence of the Prior Art*

Relatedly, courts are free to consider the prior art when ruling on claim construction. Prior art may be directly relevant to claim construction, especially where the patent applicant's dialogue with the Patent Office concerning the prior art may have given rise to a disclaimer. Also, statements in the patent specification about the prior art may be important evidence for construing claim terms. Even apart from prior art recited in the patent and the prosecution history, it is important for trial courts to have the context of other prior art that will form the basis of a validity defense. Those prior art references may play as large a role in shaping the claim construction dispute as does the accused device.

5. *The Need to Focus Markman Proceedings on Claim Construction*

There are limits on the extent to which the court should consider the accused device and prior art during *Markman* proceedings. The *Markman* case seeks to establish distinct roles for the court and for the jury.³²⁸ It is the court's job to perform the legal

³²⁶ See *SRI Int'l v. Matsushita Elec. of Am.*, 775 F.2d 1107, 1118 (Fed. Cir. 1985) (*en banc*) (“It is only after the claims have been construed without reference to the accused device that the claims, as so construed, are applied to the accused device to determine infringement.”).

³²⁷ *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1327 (Fed. Cir. 2006); *Pall Corp. v. Hemasure Inc.*, 181 F.3d 1305, 1308 (Fed. Cir. 1999) (“Although the construction of the claim is independent of the device charged with infringement, it is convenient for the court to concentrate on those aspects of the claim whose relation to the accused device is in dispute.”).

³²⁸ See *MacNeill Engin'g Co. v. Trisport, Ltd.*, 126 F. Supp. 2d 51, 54 n.1 (D. Mass. 2001) (“To open *Markman* hearings to detailed comparisons between the patented and allegedly infringing device creates the unacceptable risk of conflating claim construction (law teaching) with infringement (fact finding). Let's

task of interpreting the scope of the claim terms to the extent possible based upon the patent document from the perspective of a person having ordinary skill in the art. It is the role of the factfinder (typically the jury) to apply these construed terms to the accused device (to determine infringement) and to the prior art (to determine validity). If the court prejudges infringement or validity in its *Markman* ruling, then the court is subject to reversal for having usurped the role of the jury.³²⁹ As we see below, these roles can become blurred in the context of non-technical claim terms and terms of degree.³³⁰ Following the *Markman* ruling, the court is free to entertain summary judgment motions that turn on claim construction. We recommend that courts schedule summary judgment motions that can be resolved on the basis of claim construction simultaneously with claim construction hearings. Nonetheless, it will be important for the court to avoid trenching upon the jury's role

6. *Sequence of Argument*

Courts have broad discretion as to how they conduct *Markman* hearings. Some allocate multiple days to the hearing, while others determine claim construction on the papers.

When there is an oral hearing, it may be appropriate to hear from the lawyers on a term-by-term basis. Particularly when there are many terms at issue, hearing each side's positions for each term can help crystallize the dispute for each term. In other cases, it makes sense for each side to give its complete presentation. Allowing each party to do so may be a better way for appreciating the overall themes of a case. Hybrid approaches may work, as well, with the court hearing from each side on groups of terms.

It is highly recommended that courts allow the parties to make a visual presentation. Multimedia presentations, animations, and other visual aids can be highly instructive tools for teaching the technological concepts and claim construction principles that shape a dispute. They are also especially helpful in illustrating the particular issues in dispute. To the extent possible, the court should endeavor to preserve this record for appellate review.

face it, when *Markman* hearings become miniature or full blown infringement trials, the actual *language* of the claim diminishes in importance relative to the *context* of the particular dispute, despite the Supreme Court's admonition that it was the judiciary's particular facility for construing *language* that warranted denoting claim construction as a legal, and hence judicial, function.”).

³²⁹ See *PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998) (“Claims are often drafted using terminology that is not as precise or specific as it might be That does not mean, however, that a court, under the rubric of claim construction, may give a claim whatever additional precision or specificity is necessary to facilitate a comparison between the claim and the accused product. Rather, after the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact.”).

³³⁰ See *infra* section III.C.1.e.

F. The *Markman* Ruling

1. Interrelationship to Jury Instructions

The *Markman* ruling becomes the basis for the court's jury instructions.³³¹ Courts should draft their *Markman* rulings with an eye towards making the claim terms understandable to the jury when the time comes for instructions. In this regard, it is highly recommended that courts include a conclusion section at the end of their *Markman* orders setting forth the exact construction that will be used in the jury instructions. Any lack of clarity in this regard invites further disputes in the midst of trial during the drafting of jury instructions.

2. Basis for Appellate Review

Comparably important, the court should provide a detailed explanation for the basis for its ruling. Although the Federal Circuit currently reviews claim construction rulings *de novo*, it is more likely to defer to the trial court's interpretation to the extent that the ruling is detailed and is accompanied by a detailed record. Furthermore, even if the Federal Circuit reaches a different interpretation, a fuller record might provide the basis for an alternative disposition short of remand and a second trial.

The district court should also scrutinize factual stipulations that underlie summary judgment motions following or in combination with claim construction. The parties may enter into such stipulations so as to obtain finality of the district court proceedings and secure appellate review (such as the patentee stipulating to non-infringement after receiving a narrow claim construction). If the stipulation is devoid of context, or overly vague and ambiguous, the Federal Circuit may lack the context it needs to properly resolve the appeal, including making decisions on whether to remand the case. Accordingly, the district court should be vigilant to ensure that any such stipulations provide the necessary facts to justify the finality of the judgment below.

3. The Court May Adopt Its Own Construction

The court is free to devise its own construction of claim terms rather than adopt a construction proposed by either of the parties. However, the consequence of issuing the court's own construction is that it may upset the foundations of the parties' expert reports and any pending motions before the court. This problem may be particularly acute in late-phase *Markman* hearings where the parties' expert reports may have already been rendered based on the particular wording of the parties' proposed constructions. In such circumstances, departing from the parties' proposed construction may throw a case off track by requiring new expert reports and re-drafting of case dispositive motions.

*4. Tentative Rulings Prior to the *Markman* Hearing*

Many courts report success with issuing tentative rulings prior to the *Markman* hearing. The ability to follow this approach is naturally constrained by the resources of chambers to issue a tentative ruling in advance of the *Markman* hearing. It may also be

³³¹ See *IPPV Enters., LLC v. Echostar Commc'ns Corp.*, 106 F. Supp. 2d 595, 601 (D. Del. 2000).

infeasible where the invention involves complex science and technology. The court may understandably wish to hear from experts and see demonstrative exhibits before opining, even if only tentatively.

When the court is able to issue a tentative pre-hearing ruling, it has the benefit of informing the parties what issues are most important to the court, in order to most effectively channel the in-court presentations at the *Markman* hearing. This approach has the benefit of allowing the court to confirm its understanding of the record and the governing authorities in a direct dialogue with the attorneys. Issuing a tentative ruling prior to the hearing is a good way for the court to clear up any misperceptions that might otherwise result in reversible error. But given the lack of familiarity that the court may have with the science and technology at issue and the blurred fact/law aspects of claim construction, the court should view its tentative position with less conviction than might otherwise be the case in other areas of the law.

5. *Integrating the Markman Ruling into Trial*

a) Amendments to Infringement and Invalidity Contentions

The court's *Markman* ruling may alter the landscape for a party's infringement or invalidity contentions. Accordingly, for those courts that employ Patent Local Rules, or provide for similar provisions in their scheduling orders, it is appropriate to allow limited amendments to a party's infringement or invalidity contentions to account for the *Markman* ruling or other events that may arise during discovery (such as newly discovered prior art, or newly discovered, non-public information about the accused devices).³³² Such amendments, however, should only be allowed on a showing of good cause. Freely allowing such amendments would invite litigants to change the playing field late in the case and disrupt the orderly framework that the Patent Local Rules are designed to establish.

b) Integrating the Markman Ruling into Jury Instructions

As noted above, the central role of the *Markman* ruling at trial is to provide the basis for the jury instructions. The *Markman* ruling establishes the claim limitations that must be met for the patent to be infringed and for the prior art to invalidate the patent. The *Markman* ruling also establishes the scope of the claims that must be enabled in order for the patent to be valid, and it defines the scope of art that must have been disclosed to the Patent Office during prosecution. Thus, the *Markman* ruling is critical to most of the substantive matters of patent law in the jury instructions. Having a clear, concise *Markman* ruling, which spells out the final constructions for disputed claim terms, is essential to avoiding disputes at trial over the jury instructions. It is useful to place these constructions in a summary conclusion at the end of an opinion so that these constructions can be readily adapted into jury instructions. It is essential that the instructions on claim construction come from the court and that the attorneys not be

³³² See, e.g., Patent Local Rule 3-6 (N.D. Cal).

permitted to re-argue claim construction positions inconsistent with the court's instructions, at the risk of a new trial being ordered or of reversal.³³³

Aside from the actual constructions adopted by the court, which are incorporated into jury instructions, the *Markman* opinion should usually not be shown to the jury. The *Markman* ruling will ordinarily include language rejecting the claim construction positions of one of the parties; conveying that information to the jury would be prejudicial to the party whose position was rejected. Giving the *Markman* ruling to the jury might also interfere in the jury's analysis of the infringement and invalidity arguments, particularly when (as is common) the *Markman* ruling contains a discussion of the accused device and the prior art.

There may be situations in which it is appropriate for portions of the *Markman* ruling to be shown at trial. For example, where the opinion of an expert witness is inconsistent with the claim construction standards ordered by the court, it may be appropriate in some cases to cross-examine the expert on his or her alleged misapplication of the claim construction ruling. In such circumstances, the court should be vigilant in restricting the portions of the ruling that may be shown at trial.

c) Interlocutory Appeal of *Markman* Rulings

Due to Federal Circuit practice, it has become widely accepted that *Markman* rulings cannot be appealed until there has been a final judgment of all claims and counterclaims. In the mid 1990s, various parties attempted to appeal *Markman* rulings prior to obtaining a final judgment on all claims and counterclaims at the district court level. Arguments in favor of such early appeals note that claim construction is a matter of law and that obtaining a definitive claim construction from the Federal Circuit could avoid the costs to all parties of trial on a multitude of issues that hinge on claim construction. Moreover, given the relatively high rate of reversal of claim construction rulings, trial rulings frequently need to be vacated when the claim construction is changed on appeal, even in part. Thus, parties frequently argue that early appeals of claim construction rulings should be allowed to avoid the expense of time and money (including the trial court's own resources) for resolving issues that may likely be disposed of when claim construction is determined on appeal.

Nonetheless, for more than a decade, the Federal Circuit denied all interlocutory appeal petitions following the *Markman* decision and generally discouraged the bringing of such appeals. One basis for the Federal Circuit's reluctance to accept early appeals of *Markman* rulings is that claim construction is frequently not finished until trial is complete. It is routine for additional *Markman* issues to arise during trial—either based on new claim construction issues, or the all-to-frequent exercise of “construing the construction,” when the initial claim construction of a court does not squarely resolve the

³³³ See *CytoLogix Corp. v. Ventana Med. Sys., Inc.*, 424 F.3d 1168, 1172 (Fed. Cir. 2005) (“[B]y agreement the parties also presented expert witnesses who testified before the jury regarding claim construction, and counsel argued conflicting claim constructions to the jury. This was improper, and the district court should have refused to allow such testimony despite the agreement of the parties.”).

issues presented for trial. Furthermore, because claim construction is tied to so many issues in the case, the Federal Circuit is leery of giving an early ruling on claim construction while unaware of the other issues tied to it. And seeking Federal Circuit review of an interim ruling is disruptive of the underlying litigation because such appeals would be handled on the Federal Circuit's regular appeal schedule, without expedited relief.

In 2008, however, the Federal Circuit granted interlocutory appeal of a Markman ruling,³³⁴ although the circumstances were somewhat unusual. More directly, the chief judge has publicly invited litigators to seek interlocutory appeals on claim construction.³³⁵ While this does not appear to be signaling an invitation to review every (or even many) Markman rulings on an interlocutory basis, this case-management option may be appropriate in limited circumstances. Procedurally, litigants have had the most success obtaining early appellate review when the Markman ruling renders the claims non-infringed. The parties may at that point stipulate to non-infringement, and ask the trial court to enter final judgment as to non-infringement under Fed. R. Civ. P. 54(b). On occasion, the Federal Circuit has granted review of partial judgments entered under Rule 54(b).³³⁶ However, because the issues of invalidity and unenforceability generally remain pending below, the Federal Circuit commonly will deny such review.³³⁷ At least one judge has remarked that allowing such piecemeal review of issues "portends chaos in process."³³⁸ Litigants seeking to invoke such review may maximize their chances by fully describing the basis for non-infringement so as to provide meaningful review of that ruling on appeal.³³⁹ Furthermore, to the extent the parties can arrange for dismissal of the remaining claims, that would also facilitate review (although such dismissal may be with prejudice).³⁴⁰

Another avenue for early appellate review is to obtain interlocutory review of interim orders pursuant to 28 U.S.C. § 1292(b), after having the district court certify its order as depending on a controlling question of law as to which there is substantial ground for difference of opinion and that an immediate appeal from the order may materially advance the ultimate termination of the litigation. The Federal Circuit granted such review in *Regents of Univ. of Cal. v. Dakocytomation California, Inc.*³⁴¹ The court noted its general disfavor of such interlocutory appeals, but explained that in this case, there was already a co-pending appeal of a denial of a preliminary injunction, and thus

³³⁴ See *Regents of the University of California v. Dakocytomation California, Inc.*, 517 F.3d 1363 (Fed. Cir. 2008),

³³⁵ See Tony Dutra, *Chief Judge Issues Call to Action to Bring Cases for En Banc Federal Circuit Review*, BNA's Patent, Trademark & Copyright Journal, No. 191 (Oct. 2, 2008) ("Litigators . . . should be seeking interlocutory appeals on claim construction. For 15 years, litigators stopped the practice, but he noted that 'we got one this year and granted it.'").

³³⁶ See, e.g., *Lava Trading, Inc. v. Sonic Trading Management, LLC*, 445 F.3d 1348, 1350 (Fed. Cir. 2006).

³³⁷ See, e.g., *Linear Technology Corp. v. Impala Linear Corp.*, 31 Fed. Appx. 700 (Fed. Cir. 2002).

³³⁸ *Lava Trading*, 445 F.3d at 1355 (Mayer, J., dissenting).

³³⁹ See *id.* at 1350.

³⁴⁰ See *Nystrom v. Trex Co.*, 339 F.3d 1347, 1351 (Fed. Cir. 2003).

³⁴¹ 517 F.3d 1363 (Fed. Cir. 2008).

that it made sense to hear the interlocutory appeal in connection with the co-pending appeal.³⁴²

IV. CONCLUSIONS

More than any other facet of patent cases, claim construction distinguishes patent litigation from other forms of civil actions. The substantive law of claim construction can be analogized to interpretation of other texts, but various nuanced features – the perspective of the person of ordinary skills, the technical nature of the subject matter, distinctions between lay and technical terms, the importance of prosecution history, the interplay of multiple claims, and the need to safeguard the jury’s role in determining infringement – distinguish interpretation of patent claims from contractual and statutory interpretation. While the Federal Circuit’s en banc *Phillips* decision clarifies many of the principles underlying claim construction, neither that decision nor the other sources provide a cohesive step-by-step process or overarching framework to guide lower courts in rendering decisions. Through synthesis of the vast jurisprudence and working with a broad range of jurists and practitioners, this article provides a pragmatic approach to applying the substantive principles.

In the decade and a half since the Supreme Court’s *Markman* decision, district courts have come a long way in developing effective strategies for managing claim construction and patent case management. Most significantly, the Northern District of California pioneered the development of specialized Patent Local Rules to promote orderly resolution of claim construction. Such rules, which have now been adopted in more than ten districts (including many of the most patent-intensive jurisdictions), provide for joint, sequenced, staged, and timely disclosure of claim construction contentions. Beyond PLRs, a growing number of district courts have developed effective means for limiting the number of claim terms that must be construed, integrating summary judgment with claim construction, coming up to speed on the science and technology necessary to interpret claims, conducting claim construction hearings, and integrating claim construction rulings into patent trials.

³⁴² *Id.* at 1370.

APPENDICES

Appendix A: Narrowing or Broadening “Ordinary Meaning”	
Doctrine	Citation
I. Narrowing Construction	
A. Description of Invention	
Characterization of “the present invention.”	<p><i>Netcraft Corp. v. eBay, Inc.</i>, 549 F.3d 1394, 1398 (Fed. Cir. 2008) (“We agree with Netcraft that use of the phrase ‘the present invention’ does not ‘automatically’ limit the meaning of claim terms in all circumstances, and that such language must be read in the context of the entire specification and prosecution history. For the reasons below, however, we agree with the district court that the common specification’s repeated use of the phrase ‘the present invention’ describes the invention as a whole, and, as will be discussed further below, that the prosecution history does not warrant a contrary result.”);</p> <p><i>Verizon Services Corp. v. Vonage Holdings Corp.</i>, 503 F.3d 1295 (Fed. Cir. 2007) (“In the course of describing the ‘present invention,’ the specification then states that ‘[t]he gateway compresses and decompresses voice frequency communication signals and sends and receives the compressed signals in packet form via the network.’ When a patent thus describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.”);</p> <p><i>Honeywell International, Inc. v. ITT Industries, Inc.</i>, 452 F.3d 1312, 1318 (Fed. Cir. 2006) (holding that the “fuel injection system component” was limited to a fuel filter because all the disclosed embodiments disclosed only fuel filters and the specification repeatedly described the fuel filter as “this invention” and “the present invention”).</p>
Distinctions over prior art.	<p><i>SafeTCare Mfg., Inc. v. Tele-Made, Inc.</i>, 497 F.3d 1262, 1270 (Fed. Cir. 2007) (holding that patentee’s statements throughout specification revealed an intentional disclaimer or disavowal of coverage (“In this case, the written description repeatedly emphasizes that the motor of the patented invention applies a pushing force, not a pulling force, against the lift dog. The inventor makes clear that this attribute of the invention is important in distinguishing the invention over the prior art. Thus we are persuaded by the language used by the patentee that the invention disclaims motors that</p>

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	use pulling forces against the lift dogs.”)) ; <i>SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.</i> , 242 F.3d 1337, 1343-44 (Fed. Cir. 2001) (limiting claim to unitary lumen where the specification distinguished the prior art in part on the ground of the use of dual lumen configurations).
Consistent usage of claim terms in patent and prosecution history.	<i>Irdeto Access, Inc. v. Echostar Satellite Corp.</i> , 383 F.3d 1295, 1303 (Fed. Cir. 2004) (“[W]hile the specification does not contain any statements of explicit disavowal or words of manifest exclusion, it repeatedly , consistently, and exclusively uses ‘group’ to denote fewer than all subscribers, manifesting the patentee’s clear intent to so limit the term.”); <i>Intern. Rectifier Corp. v. IXYS Corp.</i> , 361 F.3d 1363, 1371-73 (Fed. Cir. 2004) (“The correct construction of the term ‘polygonal,’ consistent with the written description, is simply ‘a closed plane figure bounded by straight lines.’ The patentee, being fully aware of the effects of the doping process, could have claimed the regions more broadly but chose to use the word “polygonal” without modification or qualification. The district court was not free to attribute new meaning to the term or to excuse the patentee from the consequences of its own word choice.”); <i>Bell Atlantic Network Services, Inc. v. Covad Communications Group</i> , 262 F.3d 1258, 1273 (Fed. Cir. 2001) (“[T]he patentees defined the term ‘mode’ by implication, through the term's consistent use throughout the '786 patent specification. Given this definition, the three modes described in the Detailed Description of the Preferred Embodiments describe the three possible modes of the invention, and the claims are not entitled to any broader scope.”).
B. Prosecution Disclaimer	
Surrendering claim scope during prosecution narrows claim construction.	<i>MBO Laboratories, Inc. v. Becton, Dickinson & Co.</i> , 474 F.3d 1323, 1330 (Fed. Cir. 2007) (“Prosecution arguments like this one which draw distinctions between the patented invention and the prior art are useful for determining whether the patentee intended to surrender territory, since they indicate in the inventor's own words what the invention is not.”(citation omitted)); <i>Bass Pro Trademarks, LLC v. Cabela's, Inc.</i> , 485 F.3d 1364, 1369 (Fed Cir. 2007) (holding that where a patentee procures a patent based upon the unique combination of elements stressed in the prosecution history, such combination is a “material limitation to the claim”);

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Doctrine	Citation
	<p><i>Hakim v. Cannon Avent Group, PLC</i>, 479 F.3d 1313 (Fed. Cir. 2007) (holding that a patentee may not recapture through a continuation application what was surrendered during prosecution of the parent application);</p> <p><i>Atofina v. Great Lakes Chemical Corp.</i>, 441 F.3d 991, (Fed. Cir. 2006) (holding that while “it frequently happens that patentees surrender more through amendment than may have been absolutely necessary to avoid particular prior art,” the patentee is still limited “to the scope of what they ultimately claim,” and cannot “assert that claims should be interpreted as if they had surrendered only what they had to”).</p>
“Clear and unmistakable disavowal” required for prosecution disclaimer.	<p><i>Abbott Laboratories v. Sandoz, Inc.</i>, 566 F.3d 1282, 1290 (Fed. Cir. 2009) (en banc) (“[T]he prosecution history of the '507 patent shows a clear and intentional disavowal of claim scope beyond Crystal A.”);</p> <p><i>Gillespie v. Dywidag Systems Intern., USA</i>, 501 F.3d 1285, 1291 (Fed. Cir. 2007). (“Although [plaintiff] argues that this distinction was not material to the grant of his patent . . . he nonetheless argued this distinction from the [prior art] The patentee is held to what he declares during the prosecution of his patent.”);</p> <p><i>Verizon Services Corp. v. Vonage Holdings Corp.</i>, 503 F.3d 1295, 1306 (Fed. Cir. 2007). (“We have held that a statement made by the patentee during [the] prosecution history of a patent in the same family as the patent-in-suit can operate as a disclaimer. To operate as a disclaimer, the statement in the prosecution history must be clear and unambiguous, and constitute a clear disavowal of scope.”).</p>
C. Special Cases	
Inventors may expressly define terms differently than ordinary meaning.	<p><i>Chamberlain Group, Inc. v. Lear Corp.</i>, 516 F.3d 1331, 1337 (Fed. Cir. 2008) (“[T]he patent specification gives particular limiting meanings to the language in the claims While the district court's construction may represent an ordinary or customary reading of “binary code,” the '544 patent restricts “binary code” to a narrower meaning.”);</p> <p><i>Sinorgchem Co., Shandong v. International Trade Com’n</i>, 511 F.3d 1132, 1136 (Fed. Cir. 2008) (“The specification states, ‘A ‘controlled amount’ of protic material is an amount up to that which</p>

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	<p>inhibits the reaction of aniline with nitrobenzene’ The term ‘controlled amount’ is set off by quotation marks-often a strong indication that what follows is a definition. Moreover, the word ‘is,’ again a term used here in the specification, may ‘signify that a patentee is serving as its own lexicographer.’”) (citation omitted);</p> <p><i>Honeywell International, Inc. v. Universal Avionics Systems Corp.</i>, 493 F.3d 1358, 1361 (Fed. Cir. 2007) (“The specification and prosecution history make clear, however, that the patentees used the term ‘heading’ in a manner different from its ordinary meaning. When a patentee defines a claim term, the patentee’s definition governs, even if it is contrary to the conventional meaning of the term.”);</p> <p><i>Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc.</i>, 467 F.3d 1370, 1376 (Fed. Cir. 2006) (holding that the patentee acted as their own lexicographers by defining “edentate” in the specification).</p>
Specification may disclaim coverage to embodiments.	<i>SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.</i> , 242 F.3d 1337, 1343-44 (Fed. Cir. 2001) (limiting claim to unitary lumen where the specification stated that the unitary lumen configuration is the basic structure for “all embodiments of the present invention contemplated and disclosed herein”).
Ambiguity in claim term may permit limiting scope to preferred embodiment.	<i>E-Pass Technologies, Inc. v. 3COM Corporation, et al.</i> , 343 F.3d 1364, 1370 (Fed. Cir. 2003) (“Where claim language is ambiguous, the purpose of the invention described in the specification may, of course, sometimes be useful in resolving the ambiguity.”); <i>Comark Communications, Inc. v. Harris Corp.</i> , 156 F.3d 1182, 1187 (Fed. Cir. 1998) (noting that interpreting claim language in light of the specification is proper when a term is “so amorphous that one of skill in the art can only reconcile the claim language with the inventor's disclosure by recourse to the specification).
Means-plus-function terms are limited to structures in specification and	<i>Welker Bearing Co. v. PHD, Inc.</i> , 550 F.3d 1090, 1095-97 (Fed. Cir. 2008) (holding that the term “mechanism for moving said finger” was a limitation subject to means-plus-function treatment); <i>TriMed, Inc. v. Stryker Corp.</i> , 514 F.3d 1256, 1259 (Fed. Cir. 2008) (noting that a patentee's use of the word “means” in a claim limitation creates a presumption that 35 U.S.C. § 112 paragraph 6

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equivalents.	<p>applies);</p> <p><i>Applied Med. Resources Corp. v. United States Surgical Corp.</i>, 448 F.3d 1324, 1333 (Fed. Cir. 2006) (noting that literal infringement of a claim limitation in means-plus-function format “requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification”);</p> <p><i>Mass. Inst. of Tech. v. Abacus Software</i>, 462 F.3d 1344, 1354 (Fed. Cir. 2006) (noting that “[t]he generic terms ‘mechanism,’ ‘means,’ ‘element,’ and ‘device,’ typically do not connote sufficiently definite structure” to avoid means-plus-function treatment).</p>
II. Broadening Construction	
A. Claim Differentiation	
<p>“Pure” claim differentiation creates a presumption that independent claims are broader than dependent claims.</p>	<p><i>Praxair, Inc. v. ATMI, Inc.</i>, 543 F.3d 1306, 1326 (Fed. Cir. 2008) (“While no mention of uniformity appears in independent claim 1, the uniformity criterion defined in the specification-‘variation in diameter of different capillary passages does not exceed 15%’-is set forth in dependent claim 4. It therefore appears that the uniformity requirement, as set forth in the specification, was intended to be added by dependent claim 4, and was not already present in independent claim 1 or the invention overall.”);</p> <p><i>Voda v. Cordis Corp.</i>, 536 F.3d 1311, 1320 (Fed. Cir. 2008) (“Cordis concedes that ‘claim 1 does not expressly recite a ‘straight portion.’ By contrast, claims 4 and 5 of the '213 patent specifically require that the contact portion of the catheter be a ‘substantially straight leg’ in its rest state. Therefore, the fact that claim 1 - and dependent claims 2 and 3 - does not expressly recite a ‘straight’ or ‘substantially straight’ portion strongly implies that claims 1 through 3 do not require the contact portion of the catheter to be straight in its rest state.”);</p> <p><i>Phillips v. AWH Corp.</i>, 415 F.3d 1303, 1309-10 (Fed. Cir. 2005) (en banc) (holding that “baffles” included metal supports oriented at ninety degrees to the wall because a dependent claim in the patent recited baffles “projecting inwardly from the outer shell at angles tending to deflect projectiles that penetrate the outer shell”);</p> <p><i>Liebel-Flarsheim Co. v. Medrad, Inc.</i>, 358 F.3d 898, 910 (Fed. Cir. 2004) (“Although that</p>

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Doctrine	Citation
	presumption [of claim differentiation] can be overcome if the circumstances suggest a different explanation, or if the evidence favoring a different claim construction is strong, the presumption is un rebutted in this case, as Medrad has offered no alternative explanation for why the ‘pressure jacket’ limitation is found in the dependent claims but not in the corresponding independent claims. In such a setting, where the limitation that is sought to be ‘read into’ an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest.”).
Presumption may be rebutted based on specification or prosecution history, or where §112, ¶6 involved.	<p><i>Regents of University of Cal. v. Dakocytomation Cal., Inc.</i>, 517 F.3d 1364, 1375 (Fed. Cir. 2008) (“[T]he prosecution history overcomes the presumption [of claim differentiation]; the correct construction of “heterogeneous mixture” is one that excludes repetitive sequences, notwithstanding the presence of certain dependent claims that do not exclude them.”);</p> <p><i>Sinorgchem Co., Shandong v. International Trade Com’n</i>, 511 F.3d 1132, 1139-40 (Fed. Cir. 2008) (“Because claim 41 refers merely to a subset of the solvent systems described in claim 30, and is significantly narrower in scope, the claims are not rendered identical and present no claim differentiation problem.”);</p> <p><i>SRAM Corp. v. AD-II Eng’g, Inc.</i>, 465 F.3d 1351, 1358 (Fed. Cir. 2006) (restricting independent claim to use of “precision index downshifting” even though this term was present in dependent claim, when additional differences existed between the independent and dependent claim);</p> <p><i>Seachange Int’l, Inc. v. C-COR, Inc.</i>, 413 F.3d 1361, 1369 (Fed.Cir.2005) (noting that the presumption created by the doctrine of claim differentiation is “not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history”).</p>
B. Preferred Embodiment Generally Not Limiting	
Preferred embodiment generally not limiting absent a clear intention to limit scope.	<p><i>Epistar Corp. v. Int’l Trade Com’n</i>, 566 F.3d 1321, 1337 (Fed. Cir. 2009) (refusing to limit “substrate” to a preferred embodiment that describes the thicker layer as a “substrate” since the specification explains that the thickness identified for the substrate is merely “exemplary”);</p> <p><i>Linear Technology Corp. v. International Trade Com’n</i>, 566 F.3d 1049, 1057-58 (Fed. Cir. 2009) (refusing to limit claim to cover the only disclosed embodiments or examples in the specification even when only one embodiment is disclosed).</p>

Appendix A: Narrowing or Broadening “Ordinary Meaning”	
Doctrine	Citation
	<p><i>Howmedica Osteonics Corp. v. Wright Medical Tech., Inc.</i>, 540 F.3d 1337 (Fed. Cir. 2008) (refusing to limit otherwise broad claim language to a single disclosed embodiment where there was nothing in the specification to indicate the inventor meant to limit the claim language);</p> <p><i>Decisioning.com, Inc. v. Federated Dept. Stores, Inc.</i>, 527 F.3d 1300, 1308 (Fed. Cir. 2008) (“[The] description of a preferred embodiment, in the absence of a clear intention to limit claim scope, is an insufficient basis on which to narrow the claims.”);</p> <p><i>Acumed LLC v. Stryker Corp.</i>, 483 F.3d 800, 804 (Fed. Cir. 2007) (“[The defendant’s] argument is essentially an assertion that since the patent says broaching is desirable, the term ‘curved’ must be construed to cover only embodiments whose curvature allows them to be inserted into a broached hole, excluding ‘angled bends or small radius curves.’ That assertion is flawed: it is an attempt to import a feature from a preferred embodiment into the claims.”).</p>