

PATENT CLAIM CONSTRUCTION: A MODERN SYNTHESIS AND STRUCTURED FRAMEWORK

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I. INTRODUCTION

The construction of patent claims plays a critical role in nearly every patent case. It is central to the 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, Inc.*¹ marked the beginning of the new era. However, 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.² Scholars have found a relatively high reversal rate for claim construction rulings³ and shown that even experienced patent jurists fare little better than new judges.⁴ Consequently, scholars roundly criticize the jurisprudence of claim construction for lacking theoretical or practical coherence.⁵

1. 517 U.S. 370 (1996).

2. Even experienced district court judges have expressed deep frustration with the reversal rates for claim construction. E.g., 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”); 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 “demoralize[d]” by the high reversal rate). 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 issues 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.”).

3. Christian A. Chu, *Empirical Analysis of the Federal Circuit’s Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075, 1143 (2001); Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 232–34 (2005); Michael Saunders, *A Survey of Post-Phillips Claim Construction Cases*, 22 BERKELEY TECH. L.J. 215, 233 (2007); 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, 743 (2003). Although a thirty percent reversal rate appears troublingly high, it is not 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).

4. 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, 1720 (2009); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 258–59 (2008).

5. See, e.g., 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, 209 (2001); Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction?*, 157 U. PA. L. REV. 1743, 1744 (2009); Russell B. Hill & Frank P. Cote, *Ending the Federal Circuit Crapshoot: Emphasizing Plain Meaning in Patent Claim Interpretation*, 42 IDEA 1,

If nothing else, the past two decades revealed the inherent difficulties of using language to define the boundaries of abstract and intangible rights. These challenges grew with the rise of information technologies. The boundaries of patent claims to software and business methods have proven particularly ambiguous.⁶

This Article provides a cohesive framework and roadmap 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 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. This Article integrates the many principles, canons, and doctrines within 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. The Article discusses 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. Many of the patent-intensive districts throughout the nation have adopted some version of these rules. The Article then examines 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.

2 (2002); Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 151 (2005); Joseph S. Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 LEWIS & CLARK L. REV. 177, 177 (2005); Kelly C. Mullally, *Patent Hermeneutics: Form and Substance in Claim Construction*, 59 FLA. L. REV. 333, 336 (2007); Craig A. Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 82 (2000); Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 RUTGERS L.J. 61, 62–63 (2006); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1171 (2004).

6. See JAMES BESEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 201–03 (2008).

II. A STRUCTURED FRAMEWORK FOR CLAIM CONSTRUCTION

It is useful to have some historical and jurisprudential context for claim construction in place before delving into the details. With a growing trend of using 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, Inc.*,⁷ 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 and 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, 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.”⁸ The Court also emphasized that judges are better able to promote uniformity and

7. 517 U.S. 370 (1996).

8. *Id.* at 389.

certainty in claim construction.⁹ 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.¹⁰

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

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* addressed this subject. Over the years, the Federal Circuit shifted its approach and, therefore, it is critical for courts to focus on the most current and authoritative decisions. The Federal Circuit’s en banc decision in *Phillips v. AWH Corp.*¹¹ stands as the most authoritative synthesis of claim construction doctrine. While *Phillips* put 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.

This Section begins by explaining the process of claim drafting so as to understand the genesis and evolution of claim terms. It then previews the sources for determining claim meaning and the general hierarchy set forth in *Phillips*. With this background in place, this Section offers a structured analysis of claim construction. At the highest level of abstraction, claim construction entails analysis of several threshold questions regarding whether and when to interpret a claim term 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,

9. *Id.* at 390–91.

10. *Id.* at 391.

11. 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

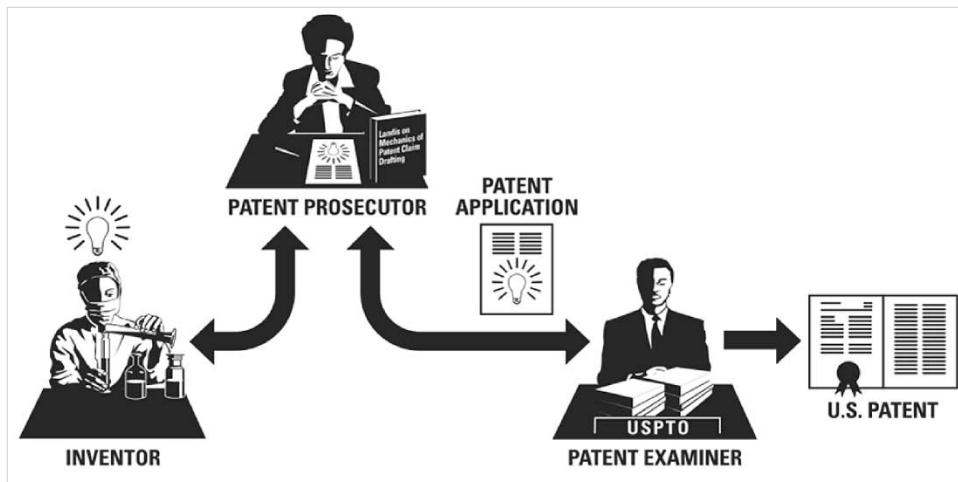
and mistaken or indefinite claim terms. We also explore the appropriate deference accorded to prior claim construction rulings.

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, conventions of claim drafting, and scientific or technical terminology. 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 in surmounting 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 the level of the inventor) as well as substantial training in the drafting of patent applications. Her job is to describe 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 in Chart 1 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.

Chart 1: Crafting of Patent Claim Terms



The process of claim drafting does not end with the submission of the patent application. 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 evaluation. As with the application drafting process, communication between the prosecutor and the examiner travels in both directions. Prosecutors frequently amend patent claims during the prosecution process based on the examiner's actions. The examiner's interest is in ensuring that the claims are valid: (1) not anticipated, obvious, or indefinite; and (2) adequately described.

After that initial filing, 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 in turn complicates claim construction. (This can lead to the anomalous and surprisingly common situation, many years later, in which a court must 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 use terms from science as well as claim drafting to achieve a delicate balance of clarity, breadth, and flexibility.

Thus, patent claim language can be an amalgam of multiple vocabularies and perspectives. 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 draftsperson 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 individuals skilled in the art interpret those terms.

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 courts should consider extrinsic evidence and what role it should play shifted significantly. From 1996 until 2002, the Federal Circuit heavily disfavored consideration of extrinsic evidence beyond educating the court about the technology.¹² But nearly contemporaneous decisions cautioned against such a strong reading.¹³ In 2002, the Federal Circuit appeared to elevate dictionaries, a special category of extrinsic evidence, to a central role in claim construction.¹⁴ 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.¹⁵

Phillips shifted attention back toward the intrinsic record while recognizing that courts could consider extrinsic evidence, although with

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

13. 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.”).

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

15. *Phillips*, 415 F.3d at 1321.

healthy skepticism. The court may consider extrinsic evidence if it 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.”¹⁶ The Federal Circuit 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.”¹⁷ Since *Phillips*, the law is clear that intrinsic evidence serves as the principal source for claim construction and that it trumps any extrinsic evidence contradicting 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 the prior art that is cited or incorporated by reference in the patent-in-suit and prosecution history as intrinsic evidence.

i) Specification

The patent specification provides “a written description of the invention, and of the manner and process of making and using it.”¹⁸ 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 the claims”¹⁹ as required by the Patent Act, the Federal Circuit in *Phillips* emphasized that claims “must be read in view of the specification, of which they are a part”²⁰ and that the specification “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.”²¹ Where the specification reveals a special meaning to a claim term or an intentional disclaimer, such definition or limitation governs claim construction.²² It is common and “entirely appropriate for a court, when

16. *Id.* at 1319.

17. *Id.* at 1318–19.

18. 35 U.S.C. § 112 (2006).

19. *Phillips*, 415 F.3d at 1316.

20. *Id.* at 1315 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)) (internal quotations omitted).

21. *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)) (internal quotations omitted).

22. *See id.*

conducting claim construction, to rely heavily on the written description for guidance as to the claim's meaning.”²³

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.”²⁴ 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.”²⁵

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 the claims *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.²⁶ For example, in *Nystrom v. TREX Co.*, the prosecution history of the patent confirmed that the claim term “board” referred to wooden boards, and not plastic boards.²⁷

iii) Related and Foreign Applications

Some patents issue from a single application, with a single prosecution history. Other patents are members of large families of related patents, with a web of underlying patent applications, along with counterparts filed in foreign countries. In such instances, when one patent is in suit, parties may

23. *Id.* at 1317.

24. *Id.*

25. *Id.*

26. *Id.* (“Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.”).

27. 424 F.3d 1136, 1145 (Fed. Cir. 2005).

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.²⁸ 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.²⁹ 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.³⁰ 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.³¹

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.³²

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

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

30. See *Hakim v. Cannon Avent Group, PLC*, 479 F.3d 1313, 1318 (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.”).

31. 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.”).

32. See *Glaxo Group Ltd. v. Ranbaxy Pharm., 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

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, dictionaries, and documentary evidence of how the patentee and alleged infringer have used the claim terms. Dictionaries are considered to be “extrinsic” evidence.³³ *Phillips* reaffirmed that the intrinsic evidence is of paramount importance in construing patent claims.³⁴ 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.³⁵ Litigants continue to argue that it is improper to consider extrinsic evidence in *Markman* rulings, citing *Vitronics Corp. v. Conceptronics, Inc.*³⁶ However, the Federal Circuit disavowed any such interpretation of *Vitronics*,³⁷ and *Phillips* puts to rest any suggestion it is wrong to consider extrinsic evidence.³⁸

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

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.”).

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

34. *Id.* at 1324. The *Phillips* court stated:

[T]here 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.

Id.

35. *See id.* at 1318.

36. 90 F.3d 1576 (Fed. Cir. 1996).

37. *See, e.g., MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1329 (Fed. Cir. 2007) (“Extrinsic evidence—testimony, dictionaries, learned treatises, or other material not part of the public record associated with the patent—may be helpful but is less significant than the intrinsic record in determining the legally operative meaning of claim language.”).

38. *See Phillips*, 415 F.3d at 1318.

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.³⁹

Thus, courts must always probe expert testimony for bias, and should ensure that any expert’s offered opinion 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.

Nonetheless, extrinsic evidence is an increasingly important source for claim construction. Extrinsic evidence is inherently factual in nature, undermining the doctrine—traceable to *Cybor Corp. v. FAS Technologies, Inc.*⁴⁰—that claim construction is purely a question of law. The Federal Circuit 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.⁴¹

39. *Id.* at 1318–19 (Fed. Cir. 2005) (quoting *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995)).

40. 138 F.3d 1448, 1455 (Fed. Cir. 1998) (en banc).

41. See *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039, 1041 (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.* at 1043 (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.* at 1044 (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, Linn, and Dyk, JJ., 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

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.⁴² 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.⁴³ What follows are some lessons from post-*Phillips* case law 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, the court can use extrinsic evidence 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 & Environmental International*,⁴⁴ 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.⁴⁵ The court determined from the intrinsic evidence that the appropriate frame of reference was stability at the time the suspension was introduced into the pipeline.⁴⁶ 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.⁴⁷

*Tap Pharmaceutical Products, Inc. v. Owl Pharmaceuticals, LLC*⁴⁸ is another example of a court using extrinsic evidence to decide between two plausible

reconsider its position on deference to district court claim construction articulated in *Cybor*....”).

42. See *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1328 (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”).

43. See *Phillips*, 415 F.3d at 1332 (Mayer, C.J., dissenting) (“[W]e 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.”).

44. 460 F.3d 1349, 1361–62 (Fed. Cir. 2006).

45. *Id.* at 1361.

46. *Id.* at 1362.

47. *Id.*

48. 419 F.3d 1346 (Fed. Cir. 2005).

interpretations from the specification. *Tap Pharmaceutical* concerned claims to a composition “comprising a copolymer . . . of lactic acid and . . . of glycolic acid.”⁴⁹ 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.⁵⁰ 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.⁵¹

Attempts to use extrinsic evidence as the *source* for claim construction are more problematic. Basing the meaning of claim terms on sources external to the patent raises concerns about the notice function of patents. Courts must take special care 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 specification contained only one illustrative embodiment having a moving scanner head but lacked a definition of the term scanner.⁵² 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.”⁵³ This definition was appropriate because it tracked what the patentee had disclosed in the specification describing a scanner.⁵⁴

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.⁵⁵ 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.”⁵⁶ The Federal Circuit credited the expert

49. *Id.* at 1349.

50. *Id.*

51. *Id.* at 1349–50.

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

53. *Id.*

54. *Id.* at 1351–52.

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

56. *Id.* at 1328.

testimony, which justified this range as appropriate because it was not statistically different from the claimed ratio of 1:5.⁵⁷

An example of expert testimony that strayed too far afield from the patent disclosures is in *Biagro Western Sales, Inc. v. Grow More, Inc.*,⁵⁸ wherein 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.”⁵⁹ 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.⁶⁰ 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.⁶¹ 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.⁶²

ii) Conclusory Expert Opinions Should Be Disregarded

Parties should ground expert opinions both in the intrinsic evidence and have support in other independent, reliable sources. Where these criteria are lacking, courts should not rely upon these expert opinions. For example, in *Network Commerce, Inc. v. Microsoft Corp.*, a patentee sought a construction based upon its expert declaration that a claimed “download component” need not contain a boot program.⁶³ 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 court properly disregarded the declaration.⁶⁴

57. *Id.*

58. 423 F.3d 1296 (Fed. Cir. 2005).

59. *Id.* at 1302.

60. *Id.* at 1304.

61. *Id.* at 1303.

62. *Id.*

63. 422 F.3d 1353, 1361 (Fed. Cir. 2005).

64. *Id.*

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 Rules⁶⁵ 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).

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 Term 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.

65. See, e.g., N.D. CAL. PATENT LOC. R.

Chart 4: Step 1: Is Construction of a Claim Term Required?

- | |
|--|
| <p>A. <u>Disputed Meaning that Can Be Derived from the Patent/PHOSITA:</u></p> <ol style="list-style-type: none"> 1. <u>Disputed Meaning:</u> Is the meaning of the claim term the subject of legitimate disagreement? 2. <u>Meaning Derivable from Patent/PHOSITA:</u> For non-technical terms, is there a special meaning that can be ascertained from the patent? <p>B. <u>Priority/Discretion/Timing: Courts Have Broad Discretion to Limit and Phase Claim Construction</u></p> <ol style="list-style-type: none"> 1. Some courts limit first and usually final <i>Markman</i> proceeding to ten terms. 2. Court can revisit claim construction; it must eventually construe all legitimately disputed and construable terms before trial. 3. Means + Function claims (in dispute) must be interpreted to identify corresponding structure, material, or acts. <p>C. <u>Issue Preclusion: Deference to Prior <i>Markman</i> Ruling</u></p> <ol style="list-style-type: none"> 1. Issue preclusion cannot be applied offensively against a party not represented in prior proceeding; but it can be applied defensively if four-part test is satisfied. <ol style="list-style-type: none"> i. Judicial estoppel can be applied where patentee changes positions. ii. Reasoned deference under stare decisis principles. <p>D. <u>Is the Term Amenable to Construction?</u></p> <ol style="list-style-type: none"> 1. 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.⁶⁶ 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

66. See PETER S. MENELL, LYNN H. PASAHOW, JAMES POOLEY & MATTHEW D. POWERS, PATENT CASE MANAGEMENT JUDICIAL GUIDE § 2.1.1 (2009) [hereinafter PCMJG]; N.D. CAL. PATENT LOC. R.; *infra* Section III.A.

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, i.e., 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?

Courts need not construe all of the terms in the initial *Markman* hearing. Indeed, courts increasingly focus the initial *Markman* hearing on about ten “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 be prior proceedings involving the same patents-in-suit or closely related patents. Where a proceeding previously construed the term, the court needs to 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.⁶⁷

Similarly, in the increasingly common scenario where the patent-in-suit becomes the subject of patent reexamination proceedings, the district court

67. See *infra* Section II.E.

may wish to stay claim construction until the patent examiner resolves the collateral proceedings.

e) Is the Term Amenable to Construction?

As illustrated in Table A, claim terms can usefully be categorized among 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,⁶⁸ 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 the parties dispute their meaning so as to determine corresponding structure, materials, or acts from the specification.⁶⁹

Table A: Typology of Claim Terms

Type	Lay Terms	Terms of Degree	Technical Terms
Examples	a, above, below, in, surround, to	approximately, essentially, substantial, dose	hydroxypropyl, methylcellulose, cyclic redundancy, oligonucleotide
Amenability to Claim Construction	Such terms are often understood by fact-finder; to construe arguably trenches upon jury's domain. But such terms may have conventional or established meaning in the technical field.	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.	Must be interpreted if meaning is disputed; PHOSITA perspective is essential.

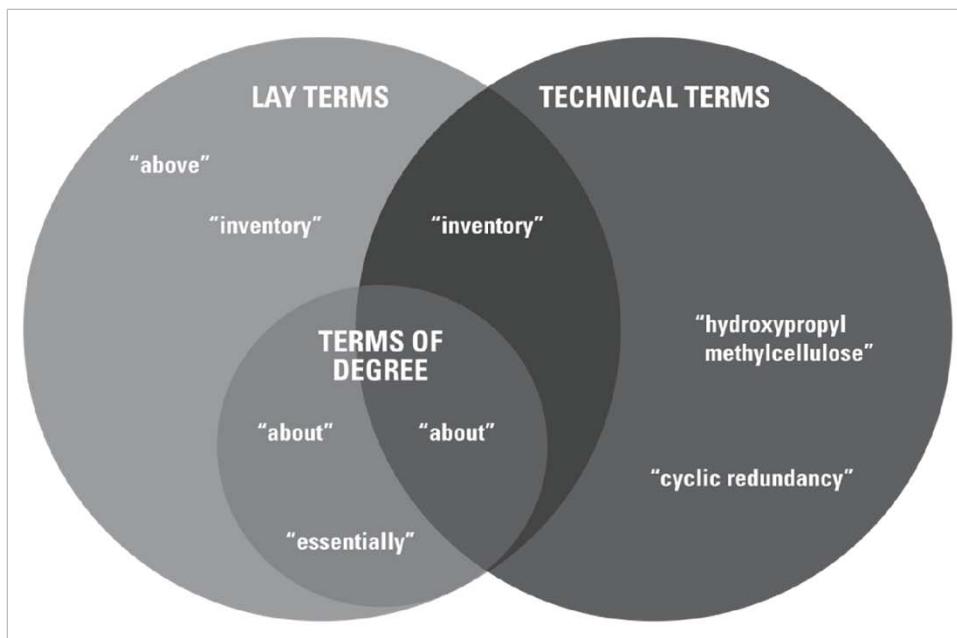
As reflected in Chart 5, the three types of claim terms are not mutually exclusive and the question of which category is most appropriate will not always be evident based solely on a reading of the claim. The court will need to examine the intrinsic record in making this assessment. Some plain

68. See *supra* Section II.B.1.

69. See *infra* Section II.C.

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.⁷⁰

Chart 5: Typology of Claim Terms



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.⁷¹

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

70. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 973 (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).

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

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.⁷² 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 "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.⁷³

On the other hand, the Federal Circuit's decision in *O2 Micro International Ltd. v. Beyond Innovation Technology Co.* states that although "district courts are not (and should not be) required to construe *every* limitation present in a patent's asserted claims,"⁷⁴ the court must interpret the scope of any claim term for which the parties have presented a "fundamental dispute."⁷⁵ 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.

72. See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 384 (1996).

73. *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.").

74. 521 F.3d 1351, 1362 (Fed. Cir. 2008) (emphasis in original).

75. *Id.*

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.⁷⁶ 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.⁷⁷

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.⁷⁸ 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.”⁷⁹ 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 1:5.⁸⁰ 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 willingness 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.”⁸¹

76. Exxon Research & 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.”).

77. See, e.g., Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 907 (Fed. Cir. 2005) (“[T]he 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. That reading 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., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311 (Fed. Cir. 2003)).

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

79. *Id.* at 1328.

80. *Id.*

81. See Modine Mfg. Co. v. U.S. Int’l Trade Comm’n, 75 F.3d 1545, 1551, 1554 (Fed. Cir. 1996) (stating that “[i]t is usually incorrect to read numerical precision into a claim from which it is absent” because “it is a question of technologic fact whether the accused device meets a reasonable meaning of ‘about’ in the particular circumstances”), abrogated on other grounds by Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 (Fed. Cir. 2000) (en banc).

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 Pharmaceuticals, Inc.*,⁸² 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 ten percent, based in part on the applicant's statements describing the prior art. Similarly, in *Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*,⁸³ the Federal Circuit affirmed the district court's construction of the term "substantially water free" as having a water content below five percent, finding that the court below may properly rely on the applicant's statements distinguishing prior art having a water content from five to thirty percent water content during prosecution history.

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, intrinsic evidence may suggest an appropriate standard for providing a more concrete measure of claim scope. The right approach is one that recognizes the tension between the goals of clarifying claim scope and of avoiding imposing extra limitations on claim language, and then carefully assesses 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 lay terms, such as "about," might have a technical meaning in the context of the patent and hence will require interpretation by the court.⁸⁴

2. Step 2: Interpretation of Claim Language

a) General Framework

Once it is determined that claim language must be construed and is ripe for construction, 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

82. 262 F.3d 1333, 1337 (Fed. Cir. 2001).

83. 249 F.3d 1341, 1346 (Fed. Cir. 2001).

84. See *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (holding that failure to construe the term "only if" was error where parties engaged in technical dispute over its scope).

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.’”⁸⁵ Courts must interpret claims from the perspective of “how a person of ordinary skill in the art understands a claim term . . . in the context of the entire patent.”⁸⁶ 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.”⁸⁷ Often, other evidence will provide context for characterizing the person having ordinary skill in the art. Indeed, courts look to what the meaning of 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.”⁸⁸ 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.”⁸⁹ 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. Thus in interpreting patent claims, a court must consider “the same resources as would [a person in the same field of technology] viz., the patent specification and the prosecution history.”⁹⁰ 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 one of ordinary

85. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc).

86. *Id.* at 1313.

87. *Id.*

88. *Id.*

89. *Id.* (quoting *Multiform Desiccants, Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998)).

90. *Id.* (quoting *Multiform Desiccants*, 133 F.3d at 1477).

skill in the art at the time of the invention.”⁹¹ Thus, courts should interpret patent claims 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. The court must adopt this perspective when interpreting claim language. The phrase “ordinary meaning” is deeply engrained in the case law, 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

91. *Id.* (quoting V-Formation, Inc. v. Benneton Group SpA, 401 F.3d 1307, 1310 (Fed. Cir. 2005)).

ending point, is an analytical framework represented by the black box shown in Chart 6.

Chart 6: Claim Construction Process: Starting Point and Destination

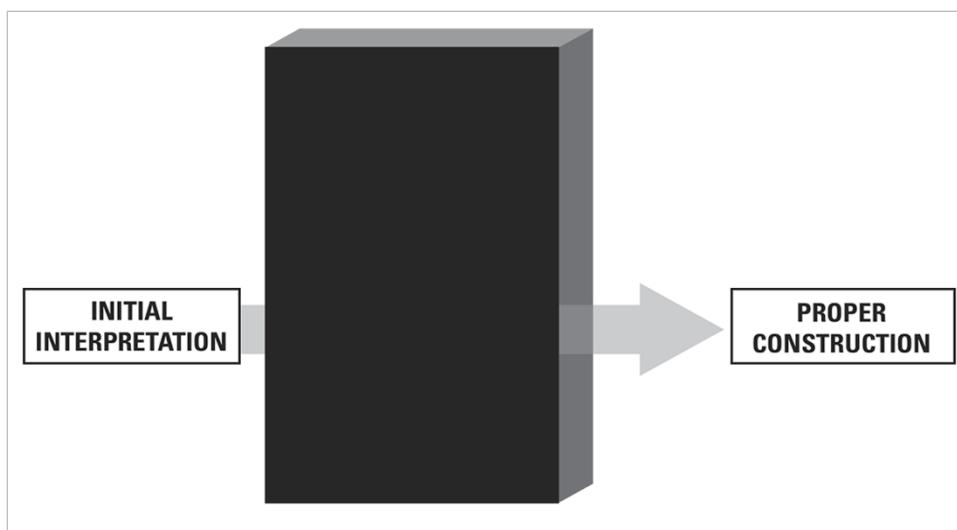
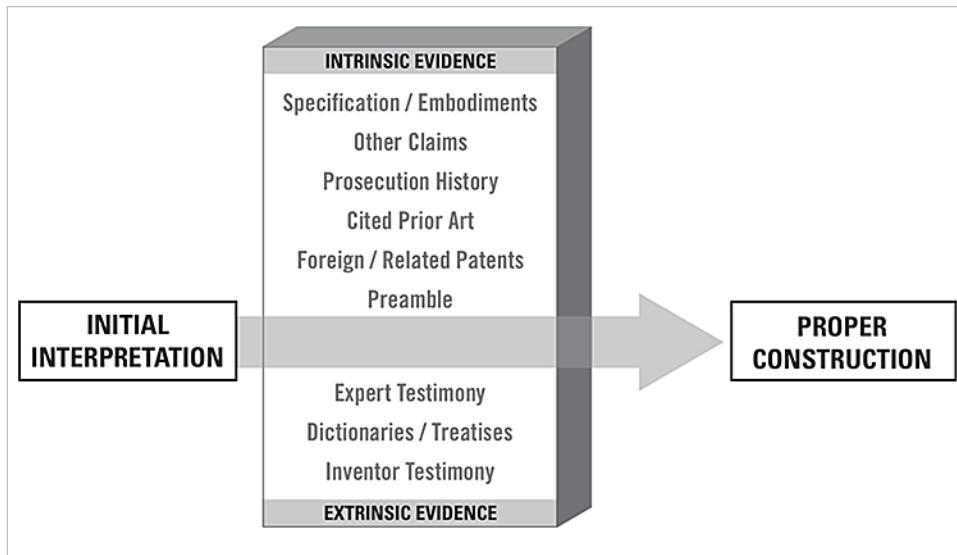


Chart 6 illustrates the starting and ending points for claim construction. The first step is to consider the claim itself, and to account for the initial understanding the court ascribes to it. If the claim language employs common, non-technical language, then its scope will immediately begin to take 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 court should take into consideration the doctrine of claim differentiation, the rules for reviewing the specification for meanings of claim terms, prosecution history estoppel, and a review of related patents. 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 emphasized, and the *Phillips* decision affirms, that the specification is the “primary basis for construing the claims”⁹² and is in most cases “the best source for understanding a technical term.”⁹³ However, no fixed hierarchy of claim construction rules exists:

[T]here 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.⁹⁴

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.

92. *Id.* at 1315 (quoting Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985)).

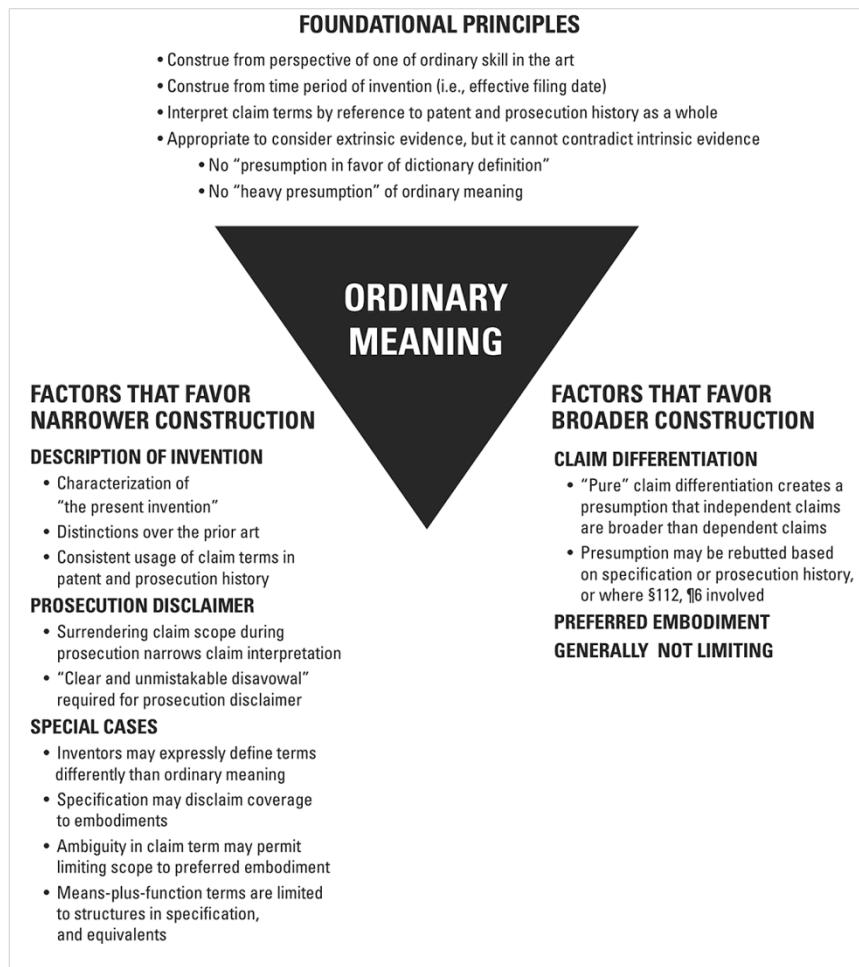
93. *Id.* (quoting *Multiform Desiccants*, 133 F.3d at 1477).

94. *Id.* at 1324.

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), and 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.

c) Misuse of “Ordinary Meaning”

Phillips' main contribution to claim construction law was reining in the *Texas Digital* line of cases.⁹⁵ *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”

95. See *Nystrom v. TREX Co.*, 424 F.3d 1136, 1142–43 (Fed. Cir. 2005); *Inverness Med. Switz. GmbH v. Warner Lambert Co.*, 309 F.3d 1373, 1378 (Fed. Cir. 2002); *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002).

from dictionaries applies, and that this presumption could only be overcome by explicit definitions in the specification, or by clear disavowals of claim scope.⁹⁶ 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 the language 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.⁹⁷ 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 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* case law 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* case law 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.”⁹⁸ In sum, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct

96. 308 F.3d at 1202.

97. Epistar Corp. v. U.S. Int’l Trade Comm’n, 566 F.3d 1321, 1334 (Fed. Cir. 2009); Elbex Video, Ltd. v. Sensormatic Elecs. Corp., 508 F.3d 1366, 1371 (Fed. Cir. 2007).

98. *Phillips*, 415 F.3d at 1316 (quoting Renishaw PLC v. Marposs Societa’ Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

construction.”⁹⁹ 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.”¹⁰⁰ 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,”¹⁰¹ and, on the other hand, that a claim term “can be defined only in a way that comports with the instrument as a whole.”¹⁰² 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 continues to acknowledge the “tightrope” that district courts must walk when construing claims in light of the specification.¹⁰³

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 Section II.B.3, *supra*, 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 examples. In the terminology 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 importance 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

99. *Id.*

100. *Id.* at 1315 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 973 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)).

101. *Id.* at 1312 (quoting *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961)).

102. *Id.* at 1316 (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 389 (1996)).

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

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 construction that excludes them.¹⁰⁴ Important exceptions to this oft-cited rule apply: where there is a disclaimer in the specification or prosecution history;¹⁰⁵ an embodiment is directed to only a subset of claims;¹⁰⁶ the claims evolved significantly during prosecution; or the ordinary meaning simply cannot be stretched to encompass the embodiment.¹⁰⁷

There are 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.¹⁰⁸ The mere fact that

104. See *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (“[A] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” (quoted by *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007))).

105. 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 infra* Section II.B.2.e.

106. See *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008).

107. *See id.*

108. See, e.g., *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 807–08 (Fed. Cir. 2007) (finding that a claimed “transverse” hole in a bone nail was not limited to the particular

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 the specification.”¹⁰⁹ 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.¹¹⁰ 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.¹¹¹

The patentee may use the specification in two different ways: (1) illustration—to set out specific examples of the invention to disclose how to make and use it; or (2) limitative—to indicate that the claims and embodiments are strictly coextensive.¹¹² Nonetheless, contrary to the suggestion in *Phillips*,¹¹³ claim drafters routinely avoid providing a clear distinction between embodiments that define the invention as opposed to

“perpendicular” orientation 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); *Agfa Corp. v. Creo Prods., Inc.*, 451 F.3d 1366, 1375–76 (Fed. Cir. 2006) (finding that a claimed “stack” of printing plates was not limited to the particular horizontal stack shown in the specification).

109. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (quoting *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186–87 (Fed. Cir. 1998)).

110. *Id.*

111. *Id.* (citing *Gemstar-TV Guide Int’l, Inc. v. Int’l Trade Comm’n*, 383 F.3d 1352, 1366 (Fed. Cir. 2004)).

112. *Id.* at 1323.

113. *Id.* (“Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive.”).

merely illustrating it so as to preserve later flexibility regarding patent scope. In doing so, they hope to get the benefit of a narrow interpretation during prosecution (which may enhance the chances of allowance) while preserving the option of 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 or Range of Embodiments Affect the Scope of the Claims?*

The patent drafter’s choice of language gives rise to disputes over how broadly to construe claims in light of the specification. 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.¹¹⁴ 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, courts 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.

114. Cf. Joseph S. Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 LEWIS & CLARK L. REV. 177, 183–84 (2005). Miller suggests that the Patent Office could improve claim construction through enhanced disclosure requirements, including 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.

Id.

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 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.)¹¹⁵ 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 is 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.¹¹⁶ In *Comark Communications, Inc. v. Harris Corp.*, 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.”¹¹⁷ At the same time, the court cautioned against reading limitations from the specification into the claims

115. 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, 68 (2000).

116. See *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1343 (Fed. Cir. 2001). The *Rexnord* court stated:

[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.

Id. (internal quotations omitted).

117. 156 F.3d 1182, 1187 (Fed. Cir. 1998).

(as opposed to interpreting claim language in light of the specification) and declined to do so in that case.¹¹⁸ Nonetheless, courts have on occasion limited claim terms to the preferred embodiments where there is no other way of grounding the ambiguous language.¹¹⁹

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.* concerned claims to a “fuel injection system component.”¹²⁰ 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,” the standard previously set by *Texas Digital*.¹²¹ 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.”¹²² The fact that a specification discloses only a single embodiment does not, by itself, compel limiting the claim’s scope to that embodiment.¹²³ There must be additional evidence beyond the disclosure of a single embodiment to justify narrowing a construction to that

118. *Id.*

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

120. 452 F.3d 1312, 1318 (Fed. Cir. 2006).

121. *See id.*

122. *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.”).

123. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc).

embodiment.¹²⁴ When taken into consideration with the patentee's description of the invention, the fact that only a single embodiment is shown is a factor that may show that the inventor only intended to claim a particular feature as his invention.¹²⁵

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."¹²⁶ For example, in *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*,¹²⁷ 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."¹²⁸ 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."¹²⁹

Statements distinguishing the prior art must be sufficiently clear to warrant a narrowing construction. *Ventana Medical Systems, Inc. v. Biogenex Laboratories, Inc.*,¹³⁰ 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

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

125. See *Honeywell Int'l*, 452 F.3d at 1318 (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").

126. *Phillips*, 415 F.3d at 1316.

127. 450 F.3d 1350, 1354–55 (Fed. Cir. 2006).

128. *Id.*

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

130. 473 F.3d 1173, 1180–81 (Fed. Cir. 2006).

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.¹³¹

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 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.¹³²

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 represent that their patent claims do *not* cover certain technologies. These statements are important limitations on claim scope.¹³³ The legal standard for finding a prosecution history disclaimer requires “a clear and unmistakable disavowal of scope during prosecution.”¹³⁴ For example, in *Atofina v. Great Lakes Chemical Corp.*,¹³⁵ 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 court based their construction 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

131. *Id.* at 1181.

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

133. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc).

134. *Purdue Pharm. L.P. v. Endo Pharmas. Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006).

135. 441 F.3d 991, 996–97 (Fed. Cir. 2006).

chromium catalyst alone rather than in combination with other metal components.”¹³⁶

By contrast, ambiguous statements in the prosecution history do not warrant a disclaimer, particularly when the applicant’s statements are subject to multiple interpretations.¹³⁷ For example, in *Golight, Inc. v. Wal-Mart Stores, Inc.*, a claim to a “rotating” spotlight was not found to have been disclaimed where statements in the prosecution history referring to the spotlight rotating “through 360°” were attributable to other claims, not the claim at issue.¹³⁸

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.”¹³⁹ 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.”¹⁴⁰ It also 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.¹⁴¹ 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

136. *Id.* at 997.

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

138. 355 F.3d 1327, 1332 (Fed. Cir. 2004); *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 on other grounds*, *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617 (2008).

139. *RF Del., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1263 (Fed. Cir. 2003) (quoting *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001)).

140. *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971–72 (Fed. Cir. 1999)).

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

gives rise to a presumption that the limitation in question is not present in the independent claim.”¹⁴²

“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.¹⁴³ In such situations, construing the independent claim to share that limitation would render the dependent claim “superfluous.”¹⁴⁴

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.¹⁴⁵

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.¹⁴⁶ 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.”¹⁴⁷ That is, “the written description and prosecution history over come [sic] any presumption arising from the doctrine of claim differentiation.”¹⁴⁸ 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

142. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc).

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

144. *Andersen*, 474 F.3d at 1369–70 (Fed. Cir. 2007).

145. See, e.g., *SRAM Corp. v. AD-II Eng’g, Inc.*, 465 F.3d 1351, 1357–58 (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).

146. See, e.g., *Andersen*, 474 F.3d at 1370 (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.”).

147. *Curtiss-Wright Flow Control*, 438 F.3d at 1380–81.

148. *Andersen*, 474 F.3d at 1369–70 (quoting *Kraft Foods, Inc. v. Int’l Trading Co.*, 203 F.3d 1362 (Fed. Cir. 2000)).

doctrine of claim differentiation.¹⁴⁹ 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.”¹⁵⁰

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.¹⁵¹ For example, in *Regents of the University of California v. Dakocytomation California, Inc.*,¹⁵² 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 para. 6. The statutorily-mandated scope of these claims cannot be stretched through resort to claim differentiation.¹⁵³

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.”¹⁵⁴ 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.¹⁵⁵ For example, where other terms in the body of the

149. See *Fantasy Sports Props., Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1115–16 (Fed. Cir. 2002).

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

151. 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” (quoting *Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1368 (Fed. Cir. 2000))).

152. 517 F.3d 1364, 1375 (Fed. Cir. 2008).

153. 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 [para.] 6.”); *Laitram Corp.*, 939 F.2d at 1538.

154. *Kropa v. Robie*, 187 F.2d 150, 152 (C.C.P.A. 1951).

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

claim derive “antecedent basis” from the preamble, then the preamble is commonly found to be limiting.¹⁵⁶ Likewise, where the preamble is “essential to understand limitations or terms in the claim body,” it is similarly limiting.¹⁵⁷

If a preamble term is a “necessary and defining aspect of the invention” the preamble is limiting.¹⁵⁸ 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.¹⁵⁹

The countervailing principle is that a preamble is not limiting when the body of the claim “describes a structurally complete invention.”¹⁶⁰ Statements of an invention’s intended uses are generally *not* limiting.¹⁶¹ This is because “the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure.”¹⁶² 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).¹⁶³ A review of the Federal Circuit’s cases over the past ten years 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.¹⁶⁴

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

157. *Catalina*, 289 F.3d at 808.

158. 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”).

159. *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).

160. *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”).

161. *Catalina*, 289 F.3d at 809.

162. *Id.*

163. *See* Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1375 (Fed. Cir. 2008).

164. *See, e.g.*, TIP Sys., 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, LLC 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 Labs., 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

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, derive their meanings 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.’”¹⁶⁵ The court commented that this interpretation can be

best 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.¹⁶⁶

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 Corp.*¹⁶⁷ Thus, even for as simple and commonplace a word as “a,” the term can have divergent

limitation); Seachange Int'l, 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 Int'l 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 Assocs. Int'l, Inc. 522 F.3d 1279, 1288–89 (Fed. Cir. 2008). The *Symantec* court stated:

[T]he 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.

Id.

165. Baldwin Graphic Sys., Inc. v. Siebert, Inc. 512 F.3d 1338, 1342 (Fed. Cir. 2008).

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

167. 516 F.3d 1290, 1303 (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.”).

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. Transitional phrases govern, among other things, whether the claim is “open” or “closed” to the presence of additional elements. Restated, 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.¹⁶⁸ 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 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	Dominant meaning in open-ended claim: one or more.	Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1342 (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.”); Lava Trading, Inc. v. Sonic Trading Mgmt., LLC, 445 F.3d 1348, 1354 (Fed. Cir. 2006); Free Motion Fitness, Inc. v. Cybex Int’l, Inc., 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”); Collegenet, Inc. v. Applyyourself, Inc., 418 F.3d 1225, 1232

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

		(Fed. Cir. 2005).
	However, sometimes means: only one.	Cat Tech LLC v. Tubemaster, Inc., 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”); Tivo, Inc. v. EchoStar Commc’ns Corp., 516 F.3d 1290, 1303 (Fed. Cir. 2008); Baldwin Graphic Sys., Inc. v. Siebert, Inc., 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.”); Norian Corp. v. Stryker Corp., 432 F.3d 1356, 1359 (Fed. Cir. 2005) (“[T]he claim language ‘consisting of . . . a sodium phosphate,’ on its own, suggests the use of a single sodium phosphate.” (emphasis in original)).
at least one	There can be only one or more than one.	Z4 Techs., Inc. v. Microsoft Corp., 507 F.3d 1340, 1348–49 (Fed. Cir. 2007); Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999).
the, said	Indicates identity with a previously used claim term.	Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1342–43 (Fed. Cir. 2008).
plurality	At least one.	Verizon Servs. Corp. v. Vonage Holding Corp., 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>But see</i> York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575 (Fed. Cir. 1996) (finding from the dictionary definition, “the state of being plural,” that a “plurality” means “at least two”).
first, second	Distinguishes between repeated instances of an element or limitation.	Free Motion Fitness, Inc. v. Cybex Int’l, Inc., 423 F.3d 1343, 1348 (Fed. Cir. 2005); 3M Innovative Props. Co. v. Avery Dennison Corp., 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,	Predicate Logic, Inc. v. Distributive Software, Inc., 544 F.3d 1298, 1304 (Fed. Cir. 2008); CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007)

	unrecited elements.	(“The usual and generally consistent meaning of ‘comprised of’ . . . is, like ‘comprising,’ that the ensuing elements or steps are not limiting.”); AFG Indus. v. Cardinal IG Co., 239 F.3d 1239, 1245 (Fed. Cir. 2001). <i>But see</i> Dippin’ Dots, Inc. v. Mosey, 476 F.3d 1337, 1343 (Fed. Cir. 2007) (“[C]omprising’ is not a 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.”	Mars, Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1377 (Fed. Cir. 2004).
including	Synonymous with “comprising.”	Lucent Techs., Inc. v. Gateway, Inc., 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.”); Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344–45 (Fed. Cir. 2003). Note that in <i>Toro Co. v. White Consol. Indus., Inc.</i> , 199 F.3d 1295, 1300–02 (Fed. Cir. 1999), the term “including” was found to require permanency of the recited element—i.e., 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.”	Pieczenik v. Dyax Corp., 76 F. App’x 293, 296 (Fed. Cir. 2003); Crystal Semiconductor Corp. v. TriTech Microelectronics Int’l Inc., 246 F.3d 1336, 1348 (Fed. Cir. 2001).
	May be closed, depending on the context of the patent.	Lampi Corp. v. Am. Power Prods., Inc., 228 F.3d 1365, 1376 (Fed. Cir. 2000) (“Transitional phrases such as . . . ‘having’ . . . must be interpreted in light of the specification to determine whether open or closed language is intended.” (quoting U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 2111.03 (7th ed. rev. 2000))).

consisting of	Is a “closed” phrase and excludes elements, steps, or ingredients not specified in the claims.	Immunocept, LLC v. Fulbright & Jaworski, L.L.P., 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”); CIAS, Inc. v. Alliance Gaming Corp., 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”); AFG Indus. v. Cardinal IG Co., 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.	PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1354 (Fed. Cir. 1998); <i>see also</i> Ecolab, Inc. v. FMC Corp., 569 F.3d 1335, 1343–44 (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); Atlas Powder Co. v. E.I. du Pont De Nemours & Co., 750 F.2d 1569, 1574 (Fed. Cir. 1984).
composed of	Synonymous with “consisting essentially of.”	AFG Indus. v. Cardinal IG Co., 239 F.3d 1239, 1245 (Fed. Cir. 2001).

TERMS OF DEGREE

about	Avoids a strict numerical boundary.	Cohesive Techs., Inc. v. Waters Corp., 543 F.3d 1351, 1368 (Fed. Cir. 2008); Cent. Admixture Pharmacy Servs., Inc. v. Advanced Cardiac Solutions, P.C., 482 F.3d 1347, 1355–56 (Fed. Cir. 2007); Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd., 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.	U.S. Philips Corp. v. Iwasaki Elec. Co., 505 F.3d 1371, 1379 (Fed. Cir. 2007); <i>see also</i> Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 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.	Geneva Pharm., Inc. v. GlaxoSmithKline PLC, 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.”); Abbott Labs v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1280 (Fed. Cir. 2003).
essentially	Synonymous with “about.”	Eiselstein v. Frank, 52 F.3d 1035, 1039 (Fed. Cir. 1995).
substantially	Meaning is highly dependent on intrinsic evidence.	Deering Precision Instruments, LLC v. Vector Distrib. Sys., Inc., 347 F.3d 1314, 1322 (Fed. Cir. 2003) (construing the term “substantially in an imaginary plane”); Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022 (Fed. Cir. 2002) (construing the terms “substantially constant” and “substantially below”); Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc., 206 F.3d 1408 (Fed. Cir. 2000) (construing the term “substantially inward”); York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568 (Fed. Cir. 1996) (construing the term “substantially the entire height thereof”); Tex. Instruments Inc. v. Cypress Semiconductor Corp., 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 (e.g., up to about 10%), the endpoint may be included; whereas, where the endpoint is physical (e.g., painting the wall up to about the door), the endpoint may be excluded.	AK Steel Corp. v. Sollac & Ugine, 344 F.3d 1234, 1241 (Fed. Cir. 2003).

SPATIAL RELATIONSHIPS		
adjoining	Touching.	Int'l Rectifier Corp. v. IXYS Corp., 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.	Libman Co. v. Quickie Mfg. Corp., 74 F. App'x 900, 904–05 (2003) (unpublished) (relying heavily on a 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.	Foster v. Hallco Mfg. Co., No. 96-1399, 1997 U.S. App. LEXIS 18989, at *20 (Fed. Cir. July 14, 1997) (relying on dictionary definition).
to	When A travels “to” B, it is sufficient to travel on a pathway with B as a destination, possibly visiting intervening components.	Cybor Corp. v. FAS Techs., Inc., 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.	Rival Co. v. Sunbeam Corp., Nos. 98-1198 & 98-1199, 1999 WL 96416, at *4 (Fed. Cir. Feb. 23, 1999) (unpublished table decision).
OTHER		
whereby	“A ‘whereby’ clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim.”	Hoffer v. Microsoft Corp., 405 F.3d 1326, 1329 (Fed. Cir. 2005); Tex. Instruments Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 1172 (Fed. Cir. 1993).
	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.	Scheinman v. Zalkind, 112 F.2d 1017, 1019 (C.C.P.A. 1940).
standard, normal,	Time-dependent terms that are limited	PC Connector Solutions LLC v. SmartDisk Corp., 406 F.3d 1359, 1363 (Fed. Cir.

conventional, traditional	to technologies existing at the time of the invention.	2005).
mixture	Open ended and “does not exclude additional, unnamed ingredients.”	Mars, Inc. v. H.J. Heinz Co., L.P., 377 F.3d 1369, 1376 (Fed. Cir. 2004).
such as, may	“[O]f 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.”); Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 811 (Fed. Cir. 2002).
adapted	Made fit for a purpose; capable of a purpose.	Mattox v. Infotopia, Inc., 136 F. App’x 366, 369 (Fed. Cir. 2005).
assembly	“[A] collection of parts . . . to form a . . . structure.”	Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1427 (Fed. Cir. 1997) (quoting WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY 131 (1986)).
uniform	“[H]aving always the same form.”	Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1387 (Fed. Cir. 2002) (relying on <i>Tex. Digital Sys., Inc. v. Telegenix, Inc.</i> , 308 F.3d 1193 (Fed. Cir. 2002) and the “heavy presumption” rule).
predetermined	“[D]etermined beforehand.”	Koito Mfg. Co. v. Turn-Key-Tech, LLC, 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 of two constructions, that should be adopted which will secure to the patentee his actual invention.”¹⁶⁹ 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.¹⁷⁰

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

170. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1328 (Fed. Cir. 2005) (en banc). The *Phillips* court stated:

While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and

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 order to rescue claims that would otherwise be invalid. Thus, when the Federal Circuit mentions the doctrine of construing claims to preserve validity, it commonly does so in the context of reversing district courts that improperly relied on the doctrine.¹⁷¹

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.”¹⁷² 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 para. 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,

we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction. Instead, we have limited the maxim to cases in which “the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.” In such cases, we have looked to whether it is reasonable to infer that the PTO would not have issued an invalid patent, and that the ambiguity in the claim language should therefore be resolved in a manner that would preserve the patent’s validity.

Id. (citations omitted).

171. 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.”).

172. *Phillips*, 415 F.3d at 1328.

material, or acts described in the specification and equivalents thereof.¹⁷³

When § 112 para. 6 is found to apply to claim language, the court construes the claim term 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 para. 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 para. 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.”¹⁷⁴ There is a rebuttable presumption that § 112 para. 6 applies “[i]f the word ‘means’ appears in a claim element in association with a function.”¹⁷⁵ The use of the term “means” or

173. 35 U.S.C. § 112 para. 6 (2006).

174. Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1023 (Fed. Cir. 2006) (quoting *Phillips*, 415 F.3d at 1328 (citing *Watts* v. XL Sys. Inc., 232 F.3d 877, 880–81 (Fed. Cir. 2000))).

175. *Callicrate v. Wadsworth Mfg.*, 427 F.3d 1361, 1368 (Fed. Cir. 2005) (quoting *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1257 (Fed. Cir. 1999)) (citing *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1314, 1318 (Fed. Cir. 1999))).

“mechanism”¹⁷⁶ 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.¹⁷⁷ Nonetheless, this implication does not apply where the claim language itself provides the structure that performs the recited function.¹⁷⁸

Conversely, a “claim term that does not use ‘means’ will trigger the rebuttable presumption that [35 U.S.C.] § 112 ¶ 6 does not apply.”¹⁷⁹ 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 recite[s] a function without reciting sufficient structure for performing that function.’ ”¹⁸⁰ Whether a claim invokes § 112 para. 6 is decided on a limitation-by-limitation basis looking to the patent and the prosecution history.¹⁸¹

For example, the Federal Circuit applied § 112 para. 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.”¹⁸² By contrast, the Federal Circuit found § 112 para. 6 inapplicable to the term “compression member” because

176. See *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1095–97 (Fed. Cir. 2008); *Mass. Inst. of Tech. 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.’ ”).

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

178. 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 . . . for tearing” does not invoke § 112 para. 6 because “perforation” provides the means for accomplishing the tearing function).

179. *Depuy Spine*, 469 F.3d at 1023 (quoting *CCS Fitness v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002)) (brackets in original).

180. *Id.* (citation omitted); see also *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); *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).

181. See *Cole*, 102 F.3d at 531.

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

“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.”¹⁸³

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

a) Step 2A: Identify Claim Term Function

If the court concludes that § 112 para. 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.¹⁸⁴ 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.¹⁸⁵ Attributing functions to a working device, rather than focusing on the claim language, may wrongly sweep additional functions into the claim.¹⁸⁶

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.¹⁸⁷ 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).¹⁸⁸ Material incorporated by reference in a specification cannot serve as “corresponding structure.”¹⁸⁹

If there is some structure identified, the next question is how much structure is “corresponding structure.” Where there are multiple

183. *Depuy Spine*, 469 F.3d at 1023.

184. See JVW Enters., Inc. v. Interact Accessories, Inc., 424 F.3d 1324, 1330 (Fed. Cir. 2005) (“Determining a claimed function and identifying structure corresponding to that function involve distinct, albeit related, steps that must occur in a particular order.”).

185. *Id.* at 1330–31.

186. *Id.* at 1330.

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

188. *Id.* at 1381–82 (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).

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

embodiments of structures corresponding to the claimed function, all of those embodiments are deemed to be “corresponding.”¹⁹⁰ 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. Any structures “necessary” to the claimed function must be disclosed.¹⁹¹ 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 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 claim.”¹⁹² Relatedly, where a specification’s disclosed structure has multiple components, only some of which perform a claimed function, the “necessary structure” is limited to the components that perform the claimed function.¹⁹³

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.¹⁹⁴

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

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

192. *Minks v. Polaris Indus.*, 546 F.3d 1364, 1377 (Fed. Cir. 2008) (citing *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1208 (Fed. Cir. 2002) (quoting *B. Braun Med., Inc. v. Abbott Lab.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997))).

193. See, e.g., *Clearwater Sys. Corp. v. Evapco, Inc.*, 553 F. Supp. 2d 173, 179–80 (D. Conn. 2008) (differentiating between disclosed circuitry components that perform the claimed function and those that do not, and excluding other components from construction).

194. See *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 974–75 (Fed. Cir. 1985).

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 para. 6. In *WMS Gaming Inc. v. International Game Technology*,¹⁹⁵ 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.”¹⁹⁶

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 they are construed), raising the possibility that the claims are invalid under § 112 para. 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.”¹⁹⁷

195. 184 F.3d 1339, 1348–49 (Fed. Cir. 1999).

196. *Id.* at 1349.

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

The general rule is that “the district court can correct an error only if the error is evident from the face of the patent.”¹⁹⁸ 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.”¹⁹⁹ 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.”²⁰⁰

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, Inc. v. Lamb-Weston, Inc.*,²⁰¹ 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.”²⁰² 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.²⁰³ 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.²⁰⁴

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.*,²⁰⁵ the Federal Circuit ruled that the district court 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.²⁰⁶

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

199. *Id.* (quoting *Novo Indus.*, 350 F.3d at 1357).

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

201. *Id.* at 1374.

202. *Id.* at 1371 (emphasis added).

203. See *id.* at 1372.

204. See *id.* at 1373–74.

205. 405 F.3d 1326, 1331 (Fed. Cir. 2005).

206. 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

When a district court construes a patent claim to correct an error, the construction generally has a retroactive effect. Conversely, corrections by the Patent Office are prospective.²⁰⁷ 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.²⁰⁸

2. *Indefiniteness*

The potentially dispositive issue of “indefiniteness” is frequently intertwined with the claim construction process. “Indefiniteness” is an invalidity defense based on § 112 para. 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.”²⁰⁹

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.²¹⁰

When a claim cannot be construed, it is indefinite, and therefore invalid.²¹¹ Some authority suggests that all indefiniteness issues boil down to an issue of claim construction.²¹² 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

simply by reading the patent. The district court does not have authority to correct the patent in such circumstances.”).

207. 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” (quoting *Southwest Software, Inc. v. Harlequin Inc.*, 226 F.3d 1280 (Fed. Cir. 2000))).

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

209. 35 U.S.C. § 112 (2006).

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

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

212. 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.” (quoting *Exxon Res. & Eng’g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001))).

presumption of validity that can only be rebutted by clear and convincing evidence.²¹³ Therefore, because it invalidates a patent, a claim construction finding the claim indefinite must be supported by clear and convincing evidence.

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.²¹⁴ 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.²¹⁵ 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.²¹⁶

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.²¹⁷

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.²¹⁸ 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.²¹⁹ These latter examples are not so much “claim

213. See *Bancorp Servs., LLC v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372 (Fed. Cir. 2004).

214. *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1371 (Fed. Cir. 2008).

215. See *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1369–70 (Fed. Cir. 2006) (refusing to invalidate claim where phrase “said zinc anode” lacked an antecedent basis).

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

217. 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).

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

219. *IPXL Holdings, LLC v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir.

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 an independent reason to allocate all issues of construction to the court.”²²⁰ 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.”²²¹

Determining the standards for according deference to prior *Markman* orders, as well as the application of such standards, has proven to be complicated in practice. Parties, sometimes uncritically, invoke a variety of doctrines—claim preclusion, res judicata, issue preclusion, collateral estoppel, judicial estoppel, or stare decisis—in efforts to constrain or obviate *Markman* determinations. The intermediate nature of *Markman* rulings makes it all the more complicated to apply such doctrines. *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

2005).

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

221. *Id.* at 391.

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.²²² “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.”²²³ 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.²²⁴ 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 terminology is used in civil procedure.²²⁵

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 relitigation of a matter that has been litigated and decided. . . . This effect also is referred to as direct or collateral estoppel.”²²⁶ 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

222. See 18 JAMES W. MOORE ET AL., MOORE’S FEDERAL PRACTICE ¶ 131.10[1][b] (3d ed. 2010).

223. *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 introductory note (1982).

224. See *Waid v. Merrill Area Pub. Sch.*, 91 F.3d 857, 863 (7th Cir. 1996).

225. Moreover, decisions by the International Trade Commission cannot have claim preclusive effect in district courts because the commission cannot award damages. See *Tex. Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1569 (Fed. Cir. 1996); *Bio-Technology Gen. Corp. v. Genentech, Inc.*, 80 F.3d 1553, 1563–64 (Fed. Cir. 1996). Nonetheless, a district court can “attribute whatever persuasive value to the prior ITC decision that it considers justified.” *Tex. Instruments*, 90 F.3d at 1569.

226. *Migra*, 465 U.S. at 77 n.1; see also *Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.*, 170 F.3d 1373, 1379 (Fed. Cir. 1999).

to the same patent claim term might assert issue preclusion to foreclose relitigation of that matter.²²⁷ 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.²²⁸

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.²²⁹

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.’”²³⁰

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 stand by things decided, and not to disturb settled points.”²³¹ 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.²³²

227. 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*, 182 F. Supp. 2d at 589–90. Had the Federal Circuit construed that claim term, however, the defendant might be bound under the doctrine of stare decisis.

228. See generally 18 MOORE ET AL., *supra* note 222, ¶ 18-134.30.

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

230. *Id.* at 749–50 (quoting *Edwards v. Aetna Life Ins. Co.*, 690 F.2d 595, 598 (6th Cir. 1982) and *United States v. McCaskey*, 9 F.3d 368, 378 (5th Cir. 1993)).

231. See BLACK’S LAW DICTIONARY 1537 (9th ed. 2009).

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

2. Issue Preclusion and 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 opportunity to construe a claim and an opposing party argues that the prior construction should govern interpretation of the term in question.²³³ 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.²³⁴ Courts apply the collateral estoppel standard of the regional circuit since issue preclusion is a procedural matter.²³⁵

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.²³⁶ When new claim terms are at issue, then collateral estoppel does not apply.²³⁷ 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.²³⁸ Similarly, since different patents may emanate from the same specification, as in the case of divisional and continuation applications, the “identity of issues”

233. 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).

234. 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)).

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

236. 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); *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”).

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

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

prong may nonetheless be satisfied if the language and context of the language are identical.²³⁹

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.²⁴⁰ The “actual litigation” test is not satisfied where: an issue was raised but later abandoned,²⁴¹ the court in the earlier proceeding declined to rule on the issue,²⁴² or there is ambiguity as to what was actually litigated and decided.²⁴³ Courts usually do not consider matters resolved by stipulation to have been actually litigated.²⁴⁴ An exception exists, however, where the parties intend to foreclose future litigation of the issue.²⁴⁵

c) Full and Fair Opportunity to Litigate

Issue preclusion requires the underlying proceeding to 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, Inc. v. University of Illinois Foundation*, 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.*,²⁴⁶ whether opinions filed in the first case suggest that it 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

239. See *Masco Corp. v. United States*, 49 Fed. Cl. 337, 343–44 (Fed. Cl. 2001) (applying collateral estoppel to a continuation patent (employing identical claim language) relating back to the patent construed in the earlier litigation).

240. See, e.g., *Kollmorgen*, 147 F. Supp. 2d at 466 (stating that the “actually litigated” prong was met after a lengthy Markman hearing on the claim construction); *Abbott Labs.*, 110 F. Supp. 2d at 669–70 (stating the “actually litigated” prong was met because the parties “briefed and argued the issues” before the judge); *Freeman*, 30 F.3d at 1466; RESTATEMENT (SECOND) OF JUDGMENTS § 27 cmt. d (1980).

241. See 18 MOORE ET AL., *supra* note 222, ¶ 132.03[2][e].

242. See *id.* ¶ 132.03[4][g].

243. See *id.* ¶ 132.03[2][g].

244. 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’”).

245. See *Hartley v. Mentor Corp.*, 869 F.2d 1469, 1470 (Fed. Cir. 1989); 18 MOORE ET AL., *supra* note 222, ¶ 132.03[2][i][ii].

246. 383 U.S. 1, 12–24 (1966).

evidence or witnesses in the prior litigation.²⁴⁷ 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.”²⁴⁸ 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.²⁴⁹

Decisions by the International Trade Commission (ITC) 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 and equitable defenses, including patent invalidity and unenforceability.²⁵⁰ In authorizing the Commission to consider these defenses, Congress stated:

[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.²⁵¹

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.²⁵²

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 be divided into two

247. *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 329–34 (1971).

248. *Id.* at 334.

249. *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. Int’l Bus. Machs. 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).

250. *See Trade Act of 1974*, Pub. L. No. 93-618, 88 Stat. 1978 (1974).

251. S. REP. NO. 93-1298, at 196 (1974), reprinted in 1974 U.S.C.C.A.N. 7186, 7329.

252. *See Tex. Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1568 (Fed. Cir. 1996); *Tandon Corp. v. U. S. 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.”).

useful, 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.²⁵³ The preclusive effect of prior summary judgment, preliminary injunction, and settlement dispositions are less clear.

(1) *Summary Judgment*

Issue preclusion can also arise out of a ruling that grants summary judgment,²⁵⁴ although denial of summary judgment or a grant of partial summary judgment usually does not have preclusive effect.²⁵⁵

(2) *Preliminary Injunction*

The Federal Circuit held in *Transonic Systems, Inc. v. Non-Invasive Medical Technologies Corp.*²⁵⁶ 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*,²⁵⁷ 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

253. 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).

254. See *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 712 (Fed. Cir. 1983); *Sec. People, Inc. v. Medeco Sec. Locks, Inc.*, 59 F. Supp. 2d 1040, 1044–45 (N.D. Cal. 1999), *aff’d mem.*, 243 F.3d 555 (Fed. Cir. 2000).

255. 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).

256. 75 F. App’x 765, 774 (Fed. Cir. 2003).

257. 451 U.S. 390, 395 (1981).

the district court in subsequent proceedings.²⁵⁸ 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.”²⁵⁹

(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.*,²⁶⁰ 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.²⁶¹ 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 the treatment of a given patent.”²⁶² 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 permitting [an issue] to be litigated again.”²⁶³ 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.²⁶⁴

Although some other courts have since followed *TM Patents*’ application of collateral estoppel in the context of settlements following *Markman* rulings,²⁶⁵ a contrary line of cases emerged holding that *Markman* rulings from cases that settled were not final and hence not properly entitled to preclusive

258. See *Jack 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.

259. *Transonic Sys.*, 75 F. App’x at 774.

260. 72 F. Supp. 2d 370, 375–77 (S.D.N.Y. 1999).

261. *Id.* at 378–79.

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

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

264. *Id.* at 378.

265. See, e.g., *Edberg v. CPI-The Alternative Supplier, Inc.*, 156 F. Supp. 2d 190, 195 (D. Conn. 2001).

effect.²⁶⁶ 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. In *Graco Children's Products, Inc. v. Regalo International*, the district 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.²⁶⁷

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.*²⁶⁸ 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 . . ."²⁶⁹ 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."²⁷⁰ Whether a decision is "sufficiently firm" depends on whether the parties were "fully heard."²⁷¹ 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.²⁷² 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 parties did not have

266. See *Kollmorgen Corp. v. Yaskawa Elec. Corp.*, 147 F. Supp. 2d 464, 470 (W.D. Va. 2001); *Graco Children's Prods., Inc. v. Regalo Int'l*, 77 F. Supp. 2d 660, 664–65 (E.D. Pa. 1999).

267. 77 F. Supp. 2d at 664.

268. 326 F.3d 1255 (Fed. Cir. 2003); see also *Dana v. E.S. Originals, Inc.*, 342 F.3d 1320 (Fed. Cir. 2003).

269. *RF Del.*, 326 F.3d at 1261–62 (Fed. Cir. 2003) (quoting *Kaspar Wire Works, Inc. v. Leco Eng'g & Mach., Inc.*, 575 F.2d 530, 542 (5th Cir. 1978)) (emphasis in original).

270. *Id.* at 1261 (quoting *Christo v. Padgett*, 223 F.3d 1324, 1339 n.47 (11th Cir. 2002) (citing RESTATEMENT (SECOND) OF JUDGMENTS § 13 (1980))).

271. *Id.*

272. *Id.* (quoting *Christo*, 223 F.3d at 1339).

notice that the court's order could have preclusive effect, and no final order approving the settlement was ever entered.²⁷³

The Federal Circuit further addressed the preclusive effect of stipulated constructions and settlements in *Pfizer, Inc. v. Teva Pharmaceuticals, USA, Inc.*²⁷⁴ 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.²⁷⁵ 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.’”²⁷⁶

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.”²⁷⁷ To have a preclusive effect, the earlier court's interpretation of the particular claim had to be the reason for the previous outcome.²⁷⁸

A related principle is that issues of claim construction that cannot be appealed cannot be accorded preclusive effect.²⁷⁹ 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.²⁸⁰

e) Reasoned Deference as a Prudent Approach to Issue Preclusion

Where the basis for applying issue preclusion is open to question, many courts have taken the approach of according prior *Markman* rulings

273. *Id.* at 1261–62.

274. 429 F.3d 1364 (Fed. Cir. 2005).

275. *Id.* at 1376.

276. *Id.* (quoting *United States v. Armour & Co.*, 402 U.S. 673, 682 (1971) and citing *In re Graham*, 973 F.2d 1089, 1097 (3d 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)).

277. *Phonometrics, Inc. v. N. Telecom Inc.*, 133 F.3d 1459, 1464 (Fed. Cir. 1998).

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

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

280. 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).

“reasoned deference” in assessing the disputed claim terms.²⁸¹ 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 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 an 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.”²⁸²

3. *Judicial Estoppel*

The Federal Circuit has recognized the applicability of the equitable doctrine of judicial estoppel in the context of claim construction.²⁸³ 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,”²⁸⁴ 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

281. See, e.g., *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting that “in the interest 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. Sprokit Techs., Inc.*, 445 F. Supp. 2d 1104, 1108 (N.D. Cal. 2006) (observing that in cases of interjurisdictional uniformity, a prior interpretation is entitled to “‘reasoned deference’ . . . turning on the persuasiveness of the order; ‘in the end, [however, the Court] will render its own independent claim construction’”) (citation omitted and alteration in original).

282. *TM Patents, L.P. v. Int’l Bus. Machs. Corp.*, 72 F. Supp. 2d 370, 379 (S.D.N.Y. 1999).

283. 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, 1252 n.2 (Fed. Cir. 2005); *RF Del., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1262 (Fed. Cir. 2003).

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

would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped.²⁸⁵

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,²⁸⁶ or even that the issue was actually litigated in the prior proceeding.²⁸⁷ On the other hand, judicial estoppel typically requires strong evidence of improper intent to mislead a tribunal.²⁸⁸

Judicial estoppel is also closely related to equitable estoppel.²⁸⁹ 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.²⁹⁰ Therefore, judicial estoppel may apply in a particular case “where neither collateral estoppel nor equitable estoppel . . . would apply.”²⁹¹

As with issue preclusion and other non-patent procedural issues, courts apply the standards for judicial estoppel developed by their regional circuit.²⁹² 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.²⁹³ 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.²⁹⁴

285. See *New Hampshire v. Maine*, 532 U.S. 742, 750–51 (2001).

286. *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).

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

288. See *Scarano v. Cent. R. Co.*, 203 F.2d 510, 513 (3d Cir. 1953) (noting that judicial estoppel prevents parties from “playing ‘fast and loose with the courts’” by forbidding “intentional self-contradiction . . . as a means of obtaining unfair advantage” (quoting *Stretch v. Watson*, 69 A.2d 596, 603 (N.J. Super. Ct. Ch. Div. 1949))).

289. See *id.* at 514 n.2.

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

291. *Allen v. Zurich Ins. Co.*, 667 F.2d 1162, 1166–67 (4th Cir. 1982).

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

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

294. See *Lowery v. Stovall*, 92 F.3d 219, 224 (4th Cir. 1996). 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) (“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).

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.²⁹⁵ 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.”²⁹⁶

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.²⁹⁷ Courts sometimes accord prior decisions from within their district somewhat greater consideration than those decided outside the district.²⁹⁸

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.”²⁹⁹ The court in *Amgen, Inc. v. F. Hoffmann-La Roche Ltd.* noted, however, that “[s]uch agreements, of course, may, where appropriate, implicate judicial estoppel and, where a final

295. See *Amgen, Inc. v. F. Hoffmann-La Roche Ltd.*, 494 F. Supp. 2d 54, 59–60 (D. Mass. 2007); *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 185 F. Supp. 2d 588, 595 n.4 (D. Md. 2002); *Wang Labs., Inc. v. Oki Elec. Indus. Co.*, 15 F. Supp. 2d 166, 175 (D. Mass. 1998) (holding a prior Federal Circuit claim construction binds a party that was not a party to (or allowed intervention in) prior litigation interpreting the claim term in question).

296. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996); see also *Visto Corp. v. Sproqit Techs., Inc.*, 445 F. Supp. 2d 1104, 1108 (N.D. Cal. 2006) (observing that “interjurisdictional uniformity” refers to claim constructions reviewed by the Federal Circuit).

297. See *Amgen*, 494 F. Supp. 2d at 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 “[i]n 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”).

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

299. *Amgen*, 494 F. Supp. 2d at 70 n.1.

judgment occurs, the doctrine of issue preclusion.”³⁰⁰ Also as with issue preclusion, stare decisis applies only to rulings that were necessary to the decision rendered.³⁰¹

A distinct tension arises when 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.³⁰²

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 (hereinafter “PLRs”) for the primary purpose of structuring the disclosure of contentions leading up to *Markman* hearings.³⁰³ Eleven other districts have since adopted PLRs modeled in varying degrees on the Northern District of California’s PLRs.³⁰⁴ Beyond PLRs, courts have experimented with different approaches to 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,³⁰⁵ and discussions with patent litigators, this

300. *Id.*

301. See *Miken Composites, LLC 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).

302. See *Tex. Instruments*, 182 F. Supp. 2d at 590.

303. See N.D. CAL. PATENT LOC. R.

304. See D. MASS. PATENT LOC. R.; D. N.J. PATENT LOC. R.; E.D. MO. PATENT LOC. R. (Judge Charles Shaw); E.D. N.C. PATENT LOC. R.; E.D. TEX. PATENT LOC. R.; N.D. GA. PATENT LOC. R.; N.D. ILL. PATENT LOC. R. (proposed); S.D. CAL. PATENT LOC. R.; S.D. TEX. PATENT LOC. R.; W.D. PA. PATENT LOC. R.; W.D. WASH. PATENT LOC. R.

305. Between December 2007 and August 2008, the authors met with district judges and magistrate judges in the Northern District of California, Central District of California, District of Delaware, Northern District of Illinois, District of New Jersey, Southern District of New York, Eastern District of Texas, and Eastern District of Virginia, as well as the Federal Circuit, to discuss the range of patent case management practices.

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 PLRs³⁰⁶ or have adopted standard practices under the Federal Rules of Civil Procedure and Civil Local Rules that have markedly affected the conduct of patent cases (e.g., Eastern District of Virginia³⁰⁷). 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.³⁰⁸ Under the Federal Rules of Civil Procedure, a patent plaintiff need only plead that a defendant is infringing its patent.³⁰⁹ 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

306. See generally James Ware & Brian Davy, *The History, Content, Application and Influence of the Northern District of California's Patent Local Rules*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 965 (2009) (providing a detailed account of the evolution of the Northern District of California's Patent Local Rules and a detailed appendix comparing the principal provisions of patent local rules throughout the districts).

307. See T.S. Ellis III, Presentation at the Proceedings of the 1999 Summit Conference on Intellectual Property: Quicker and Less Expensive Enforcement of Patents: United States Courts (1999), in Streamlining International Intellectual Property 11, 12–14 (5 CASRIP Publ'n Series 2000), available at <http://www.law.washington.edu/casrip/symposium/Number5/pub5atcl2.pdf>; see also Robert E. Scott & George G. Triantis, *Anticipating Litigation in Contract Design*, 115 YALE L.J. 814, 829 n.34 (2006) (describing Eastern District of Virginia's reputation for rapid resolution of litigation).

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

309. FED. R. CIV. P. 8; FED. R. CIV. P. Form 16; see also Phonometrics, Inc. v. Hospitality Franchise Sys., Inc., 203 F.3d 790, 794 (Fed. Cir. 2000); Gammino v. Cellco P'ship, No. 04-4303, 2005 WL 2397168, at *1–3 (E.D. Pa. Sept. 27, 2005). But cf. Bell Atl. Corp. v. Twombly, 550 U.S. 544, 556 (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).

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.³¹⁰

Initial disclosures required under Rule 26 do not alleviate this problem. Routine discovery procedures such as service of contention interrogatories or expert discovery ultimately could 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. 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 shuffling of positions.”³¹¹ 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, 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.³¹²

310. See *MedImmune, Inc. v. Centocor, Inc.*, 271 F. Supp. 2d 762, 771–72 (D. Md. 2003); *Environ Prods., Inc. v. Total Containment, Inc.*, 951 F. Supp. 57, 59 (E.D. Pa. 1996).

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

312. *O2 Micro*, 467 F.3d at 1365–66; see also *Nova Measuring Instruments Ltd. v. Nanometrics, Inc.*, 417 F. Supp. 2d 1121, 1122–23 (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.”).

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.³¹³ All modifications, as well as the rules or standing orders, must be consistent with Federal Circuit case law to the extent an issue “pertains to or is unique to patent law.”³¹⁴ 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.³¹⁵ 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.”³¹⁶

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.

313. See, e.g., N.D. CAL. PATENT LOC. R. 1–2.

314. 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)).

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

316. See also *Advanced Cardiovascular*, 265 F.3d at 1303; *In re Spalding Sports Worldwide, Inc.*, 203 F.3d 800, 803–04 (Fed. Cir. 2000) (holding that Federal Circuit law applies when determining the applicability of the attorney-client privilege to an invention record because it implicates the substantive patent issue of inequitable conduct).

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.³¹⁷ 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.

317. See *infra* Section III.D.

Chart 11: Accelerated Patent Case Management Timeline

(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, but 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 requiring expert witnesses to prepare reports that address the range of potential claim constructions. Such reports can be especially difficult to prepare.

Furthermore, if the expert does not anticipate the ultimate claim construction, expert discovery might have to be redone 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. Furthermore, 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.³¹⁸

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. PLRs 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

Two primary goals of the procedures before a *Markman* hearing exist: (1) insurance that the parties' claim construction positions are squarely joined, reducing false and hidden disputes; and (2) resolution of 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 practices have proven especially effective in accomplishing these objectives.

318. See Magarl, LLC v. Crane Co., No. IP 02-0478-C-T/L, 1:03-CV-01255-JDT-TWL, 2004 U.S. Dist. LEXIS 24283, at *44 (S.D. Ind. Sept. 29, 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").

a) Early Disclosure of Infringement and Invalidity Contentions

Requiring disclosure of infringement contentions at the start of the case focuses the disputes at issue for the *Markman* hearing. In jurisdictions that have not adopted PLRs, 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; and a claim chart detailing where each element of an asserted claim is found in each accused instrumentality.³¹⁹

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.³²⁰ 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.³²¹ 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 result in 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

319. See N.D. CAL. PATENT LOC. R. 3-1.

320. See, e.g., N.D. CAL. PATENT LOC. R. 3-2.

321. See 35 U.S.C. § 112 (2006).

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 PLRs of the Northern District of California and the Eastern District of Texas, and is required within ten days of service of the invalidity contentions.³²²

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 twenty 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.³²³

c) Mechanisms for Limiting the Number of Claim 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.

322. See N.D. CAL. PATENT LOC. R. 4-1 to 4-3; E.D. TEX. PATENT LOC. R. 4-1 to 4-3.

323. See S.D. CAL. PATENT LOC. R. 4.1(d); E.D. TEX. PATENT LOC. R. 4-2(b).

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.”³²⁴ The ten-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 ten 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 ten, 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 claims generally must be construed in order to identify the corresponding structure in the specification.³²⁵ 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, 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 customary 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, parties may feel that they will be faced with a waiver situation if all disputed terms are not addressed at the *Markman* proceedings. In such cases, there will

324. N.D. CAL. PATENT LOC. R. 4-3(c).

325. See 35 U.S.C. § 112 para. 6 (2006).

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.³²⁶ It is legal error for the court to allow the parties to argue competing claim construction positions to the jury.³²⁷ 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.

d) Severance versus Postponement

In cases involving many patents, frequently with diverse technologies, courts 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: (1) either doing claim construction hurriedly at the end of the pretrial schedule, which disrupts expert reports, summary judgment, and other pretrial scheduling, or (2) postponing the trial for another round of claim construction. The Federal Circuit has made clear that the district court may not proceed to trial without resolving any remaining claim construction

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

327. 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.”).

disputes.³²⁸ In general, courts have gravitated toward the severance and stay option, and have found that the subsequent trials are not needed.

e) 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.

We recommend 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 gives 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.³²⁹

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.

328. See *O2 Micro*, 521 F.3d at 1360–63.

329. See *Vivid Techs., 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 (non-infringement)		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 are not the focus of summary judgment motions, but will be the focus of claims or defenses to 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 goes 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 and the *Markman* hearing. 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 Advisors in Claim Construction

Claim terms are interpreted from the perspective of a person having ordinary skill in the art at the time of invention. 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 Appointed Experts

Nature of Expert/ Legal Authority	Process/Role	Procedural Safeguards
1. Tutorial Process	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)	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 pursuant to inherent powers <i>TechSearch, LLC v. Intel Corp.</i> , 286 F.3d 1360, 1381 (Fed Cir 2002) (approved for use in <i>Markman</i>)	“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	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 Fed. R. Civ. P. 53	prepares report and recommendations (e.g., proposed claim construction) Court adopts, rejects, or modifies	parties must be given opportunity to object court may receive additional evidence factual and legal issues decided de novo procedural decisions reviewed for abuse of discretion
4. Expert Witness Fed. R. Evid. 706	instructed by court in writing provides findings to parties and court court or any party may call expert as a witness	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. Although 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 generally will 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.³³⁰ 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 webcam) to achieve the benefits of having a live presentation where the court's questions can be answered, and preserve 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

330. See JUDGE SAUNDRA BROWN ARMSTRONG, JUDGE ARMSTRONG'S PATENT STANDING ORDER EFFECTIVE OCT. 15, 2004, ¶ 6.

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 challenges comparable to 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 can assist the Federal 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.³³¹ The Federal Circuit expressly approved appointing a technical advisor for *Markman* proceedings in *TechSearch LLC v. Intel Corp.*,³³² 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.”³³³ Applying Ninth Circuit law, the Federal Circuit noted the following guidelines for appointing a technical advisor: (1) “use a ‘fair and open procedure for appointing a neutral technical advisor’ addressing any allegations of bias, partiality or lack of qualifications”; (2) “clearly define and limit the technical advisor’s duties in a writing disclosed to all parties”; (3) “guard against extra-record information”; and (4) “make explicit, perhaps

331. See generally John S. Wiley, Jr., *Taming Patent: Six Steps for Surviving Scary Patent Cases*, 50 UCLA L. REV. 1413 (2003) (promoting the use of technical advisors).

332. 286 F.3d 1360 (Fed. Cir. 2002).

333. *Id.* at 1377.

through a report or record, the nature and content of the technical advisor's tutelage concerning the technology.”³³⁴ The Federal Circuit cautioned, however, that “district courts should use this inherent authority sparingly and then only in exceptionally technically complicated cases.”³³⁵

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 technical terminology 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.³³⁶

First, one common concern with the appointment of a technical advisor 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 relationship between a judge and a technical advisor is much like the interaction between a judge and law clerk, 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.

Second, 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, and what arguments can be made to the

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

335. *Id.* at 1378.

336. *See id.* at 1377–81.

jury). For this reason, some experienced patent jurists have disavowed use of advisors in claim construction and caution against their use.

Third, there is concern about the transparency of the technical advisor process. The *TechSearch* decision emphasizes the need to guard against extra record information, and makes explicit the nature and content of the technical advisor's tutelage concerning the technology.³³⁷ 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 one court,³³⁸ 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 Federal Rule of Civil Procedure 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.

337. *See id.*

338. This procedure was used by Judge William G. Young in the District of Massachusetts. Interview with William G. Young, Judge, District of Massachusetts, in Boston, Mass. (Mar. 25, 2008).

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 Federal Rule of Evidence 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, and 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 been used in at least one recent jury trial, where there was a serious risk of juror confusion,³³⁹ 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

339. See *Monolithic Power Sys., Inc. v. O2 Micro Int'l Ltd.*, 558 F.3d 1341, 1348 (Fed. Cir. 2009).

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. If the court holds summary judgment proceedings too early in the process, the inability to determine which factual issues are in dispute precludes summary resolution that might be possible at a later stage of the pretrial process. 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.

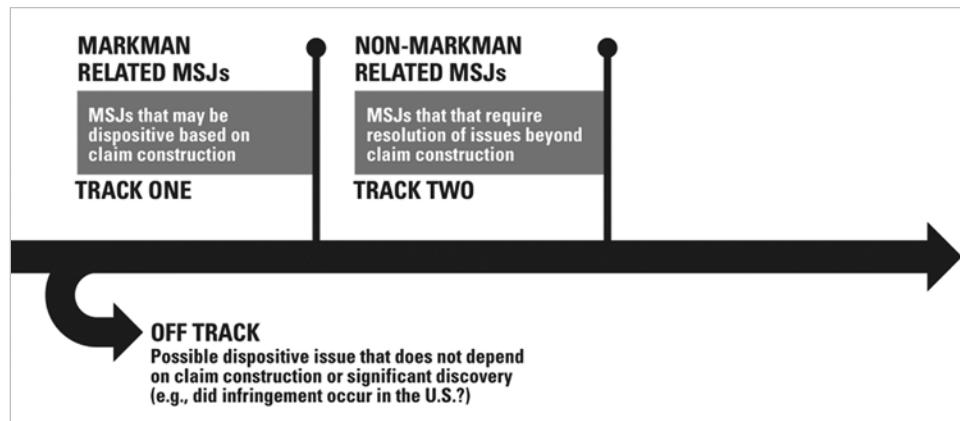
Claim construction plays a central role in scheduling and managing summary judgment motions. Generally, the pretrial issues requiring the largest investment of judicial resources in a patent case are claim construction and summary judgment. Furthermore, most of the weighty issues in a patent case—the 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 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 (“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 Motion for Summary Judgment (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 International*, the claims at issue required “establishing a predetermined winning combination.”³⁴⁰ 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.³⁴¹ The Federal Circuit affirmed.³⁴² 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.³⁴³

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

340. 472 F.3d 1338, 1340 (Fed. Cir. 2006).

341. *See id.* at 1341.

342. *Id.* at 1345.

343. *See, e.g.*, *Schoenhaus v. Genesco, Inc.*, 440 F.3d 1354, 1356, 1360 (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 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.³⁴⁴ 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. An alternative benefit occurs because the 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.

Further, hearing first-track summary judgment motions with claim construction informs the court of important context for understanding the parties' claim construction disputes. Technically, the accused product is not a factor in claim construction.³⁴⁵ Nonetheless, the Federal Circuit has expressly directed district judges to construe claims with an understanding of the ultimate issues and disputes in a case.³⁴⁶ Indeed, it is "highly undesirable" to

344. See *supra* Section III.A.

345. Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1580 (Fed. Cir. 1991) ("[T]he words of the claims are construed independent of the accused product.").

346. *Id.* ("Of course the particular accused product (or process) is kept in mind, for it is

consider claim construction issues “without knowledge of the accused devices,”³⁴⁷ because these provide the “proper context for an accurate claim construction.”³⁴⁸ 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 claim construction—such as jurisdiction, standing, and patentable subject matter—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, most courts have found that it is best to resolve claim construction issues midway through the pretrial process, both to facilitate settlement and so that the parties can prepare for trial knowing the proper claim construction. 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.

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 process, and so that Federal Rule of Civil Procedure 56(f) issues do not derail the court’s ability to grant a meritorious first-track motion and dispose of the case early on.

efficient to focus on the construction of only the disputed elements or limitations of the claims.”).

347. Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1350–51 (Fed. Cir. 2006).

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

The most essential component of this approach is to provide 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 be a deadline in the case schedule for a summary judgment motion believed to be a first-track motion. To avoid unfairness or problems with Rule 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' PLRs. 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 Rule 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.³⁴⁹ Enablement and indefiniteness are also both ultimately legal conclusions for the court, albeit based on underlying facts.³⁵⁰ 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.³⁵¹ 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.³⁵² 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.³⁵³ 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.³⁵⁴ 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 party 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

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

350. *Warner-Lambert Co. v. Teva Pharms. USA, Inc.*, 418 F.3d 1326, 1336–37 (Fed. Cir. 2006) (addressing the enablement standard); *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347–48 (Fed. Cir. 2005) (addressing the indefiniteness standard).

351. *Univ. of Rochester v. G.D. Searle & Co.*, 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).

352. See *supra* notes 344–46 and accompanying text.

353. See, e.g., *Fort Props., Inc. v. Am. Master Lease, LLC*, 609 F. Supp. 2d 1052 (C.D. Cal. 2009) (invalidating claims under § 101 without discussion of claim construction).

354. See *CyberSource Corp. v. Retail Decisions, Inc.*, 620 F. Supp. 2d 1068 (N.D. Cal. 2009).

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.³⁵⁵

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

The above discussion focuses on motions that 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 example, a territoriality issue—did the alleged infringement occur “in the United States”?³⁵⁶—often will not involve claim construction.

For such motions, the tracked 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 focusing 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

355. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 425 (2007); *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1362 (Fed. Cir. 2007).

356. See 35 U.S.C. § 271(a) (2006).

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.”³⁵⁷ Nonetheless, the Federal Circuit has ruled that claim construction is strictly a matter of law.³⁵⁸ This view, however, has increasingly been questioned.³⁵⁹ A widely-held understanding has been that consideration of fact-intensive “extrinsic” evidence was generally taboo.³⁶⁰ That line of authority (especially as articulated in *Vitronics Corp. v. Conceptronic, Inc.*³⁶¹) has been repeatedly discredited and overruled by the Federal Circuit.³⁶² 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.³⁶³ 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.³⁶⁴ Relying on extrinsic evidence (especially by considering the parties’ expert submissions and making credibility determinations as to their

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

358. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1464 (1998) (en banc).

359. See *infra* Section II.A.2.b.

360. “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); see also *supra* Section II.A.2.

361. 90 F.3d 1576, 1583–84 (Fed. Cir. 1996).

362. See, e.g., *AFG Indus. v. Cardinal IG Co.*, 239 F.3d 1239, 1248 (Fed. Cir. 2001).

363. See *Phillips*, 415 F.3d at 1303, 1324.

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

respective merit) may be a way of bolstering the “factual” nature of *Markman* rulings and improving chances of deferential review on appeal.³⁶⁵ Nonetheless, intrinsic evidence should ordinarily be the primary focus of claim construction determinations.³⁶⁶

A frequent and related question is whether, and to what extent, courts should apply the Federal Rules of Evidence in *Markman* proceedings. The dominant and recommended approach is to apply evidentiary rules 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 Federal Rules of Evidence in *Markman* proceedings, such as allowing use of depositions instead of live testimony, 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, confirm that an expert’s opinions are sound. Courts may choose to apply a *Daubert* standard³⁶⁷ for qualifying expert witnesses to present

365. See *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1328 (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”).

366. See *Phillips*, 415 F.3d at 1319; *supra* Section II.A.2.a.

367. See *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592–95 (1993) (describing a multi-factor test for determining the admissibility of expert testimony).

expert opinions in a *Markman* hearing. Because *Markman* hearings are not heard 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 a 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.³⁶⁸ More recently, the Federal Circuit expressly approved consideration of the accused device during claim construction.³⁶⁹ 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.³⁷⁰ Also, statements in the patent specification about the prior art may be important evidence for construing claim terms.³⁷¹ Even apart from prior art recited in

368. See *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1118 (Fed. Cir. 1985) ("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." (emphasis in original)).

369. *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326–27 (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.").

370. See *supra* Section II.B.2.e.

371. See *supra* Section II.B.2.d.iii.

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.³⁷² It is the court's job to perform the legal 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.³⁷³ As we see below, these roles can become blurred in the context of non-technical claim terms and terms of degree.³⁷⁴ Following the *Markman* ruling, the court is free to entertain summary judgment motions that turn on claim

372. See *MacNeill Eng'g Co. v. Trisport, Ltd.*, 126 F. Supp. 2d 51, 54 n.1 (D. Mass. 2001). The court stated:

To open up *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 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.

Id. (emphasis in original).

373. See *PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998). The court stated:

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.

Id.

374. See *supra* Section II.B.1.e.

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.

F. THE *MARKMAN* RULING

1. Interrelationship to Jury Instructions

The *Markman* ruling becomes the basis for the court's jury instructions.³⁷⁵ 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

³⁷⁵ IPPV Enters., LLC v. Echostar Commc'n Corp., 106 F. Supp. 2d 595, 601 (D. Del. 2000).

claim construction rulings *de novo*, it is more likely to defer to the trial court's interpretation when 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 constructions 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 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 allows 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 and 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 PLRs, 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 non-public information about the accused devices).³⁷⁶ 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 PLRs are designed to establish.

b) Integrating the *Markman* Ruling into Jury Instructions

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 permitted to re-argue claim

376. See, e.g., N.D. CAL. PATENT LOC. R. 3-6.

construction positions inconsistent with the court's instructions, at the risk of a new trial being ordered or of reversal.³⁷⁷

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.

377. 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.”).

Nonetheless, the Federal Circuit disfavors interlocutory review of claim construction rulings. 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-too-frequent exercise of “construing the construction,” when the initial claim construction of a court does not squarely resolve the 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. Another concern is that granting such appeals could discourage settlements³⁷⁸ and lead to a deluge of appeals that would adversely affect appellate resources.³⁷⁹

In 2007, the Federal Circuit granted interlocutory appeal of a *Markman* ruling pursuant to 28 U.S.C. § 1292(b),³⁸⁰ although the circumstances were somewhat unusual—an earlier case involving the same claims was before the Federal Circuit in an appeal from a denial of a preliminary injunction.³⁸¹ The

378. See Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 34–35 (2001). Moore stated:

Although patent appeals only represent about 20% of the Federal Circuit's docket in terms of the number of cases, they are the most complex and time consuming of the cases the court hears. There are approximately 2200 patent cases resolved each year in the district courts. The Federal Circuit judges may fear that if claim construction were appealable on an interlocutory basis, many parties who settle rather than endure expensive and time-consuming litigation would appeal claim construction prior to settlement because a Federal Circuit appeal is relatively inexpensive compared to a district court trial.

Id. (footnotes omitted).

379. Chief Judge Michel of the Federal Circuit has expressed this concern to Congress: “I would expect an interlocutory appeal in virtually every patent infringement case as soon as a claim construction order issues.” Letter from Paul R. Michel, Chief Judge, U.S. Court of Appeals, Federal Circuit, to Senators Patrick Leahy and Arlen Specter, U.S. Senators, 2 (June 13, 2007), cited in William C. Rookledge & Mansi H. Shah, *Creation of the Right to Interlocutory Appeal of Patent Claim Construction Rulings and Mandatory Stay Pending Appeal* 3 n.11, available at http://www.patentsmatter.com/issue/pdfs/Interlocutory_Review_Paper.pdf.

380. This provision authorizes a district court to certify and order for interlocutory reviews that turn on a controlling question of law as to which there is substantial ground for difference of opinion and an immediate appeal from the order may materially advance the ultimate termination of the litigation.

381. See *Regents of Univ. of Cal. v. Dako N. Am., Inc.*, 477 F.3d 1335, 1336 (Fed. Cir. 2007).

court noted its general disfavor of such interlocutory appeals, but explained that there was already a co-pending appeal of a denial of a preliminary injunction and thus that it made sense to hear the interlocutory appeal in connection with the co-pending appeal.³⁸²

Partially in response to proposed legislation liberalizing the standard for interlocutory review of *Markman* determinations, Chief Judge Michel has publicly invited litigators to seek interlocutory appeals on claim construction.³⁸³ 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 Federal Rule of Civil Procedure 54(b). On occasion, the Federal Circuit has granted review of partial judgments entered under Rule 54(b).³⁸⁴ However, because the issues of invalidity and unenforceability generally remain pending below, the Federal Circuit commonly will deny such review.³⁸⁵ At least one judge has remarked that allowing such piecemeal review of issues “portends chaos in process.”³⁸⁶ 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.³⁸⁷ Furthermore, parties arranging for dismissal of the remaining claims would also facilitate review (although such dismissal may be with prejudice).³⁸⁸

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

382. *Id.* at 1336–37.

383. Tony Dutra, *Chief Judge Issues Call to Action to Bring Cases for En Banc Federal Circuit Review*, 76 PAT., TRADEMARK, & COPYRIGHT J. (BNA) 755 (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.’”).

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

385. See *Linear Tech. Corp. v. Impala Linear Corp.*, 31 F. App’x. 700 (Fed. Cir. 2002).

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

387. See *id.* at 1350.

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

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 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 PLRs 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.

APPENDIX: NARROWING OR BROADENING “ORDINARY MEANING”

Doctrine	Citation
I. Narrowing Construction	
A. Description of Invention	
Characterization of “the present invention.”	Netcraft Corp. v. eBay, Inc., 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.”); Verizon Servs. Corp. v. Vonage Holding Corp., 503 F.3d 1295, 1308 (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.”); Honeywell Int'l, Inc. v. ITT Indus., Inc., 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”).
Distinctions over prior art.	SafeTCare Mfg., Inc. v. Tele-Made, Inc., 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 use pulling forces against the lift dogs.”)); SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 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.	Irdeto Access, Inc. v. Echostar Satellite Corp., 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.”); Int’l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1371–72 (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.”); Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, 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	MBO Labs., Inc. v. Becton, Dickinson & Co., 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

narrows claim construction.	<p>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"); <i>Hakim v. Cannon Avent Group, PLC</i>, 479 F.3d 1313, 1318 (Fed. Cir. 2007) (holding that a patentee may not recapture through a continuation application what was surrendered during prosecution of the parent application); <i>Atofina v. Great Lakes Chem. Corp.</i>, 441 F.3d 991, 998 (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 Labs. v. Sandoz, Inc.</i>, 566 F.3d 1282, 1290 (Fed. Cir. 2009) ("[T]he prosecution history of the '507 patent shows a clear and intentional disavowal of claim scope beyond Crystal A."); <i>Gillespie v. Dywidag Sys. Int'l, 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."); <i>Verizon Servs. Corp. v. Vonage Holding 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." (internal citations omitted)).</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 '544 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."); <i>Sinorgchem Co., Shandong v. Int'l Trade Comm'n</i>, 511 F.3d 1132, 1136 (Fed. Cir. 2007) ("The specification states, 'A 'controlled amount' of protic material is an amount up to that which 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)); <i>Honeywell Int'l, Inc. v. Universal Avionics Sys. 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</p>

	term.”); Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc., 467 F.3d 1370, 1376 (Fed. Cir. 2006) (holding that the patentee acted as their own lexicographers by defining “edentate” in the specification).
Specification may disclaim coverage to embodiments.	SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 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.	E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1370 n.4 (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.”); Comark Commc’ns, Inc. v. Harris Corp., 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 equivalents.	Welker Bearing Co. v. PHD, Inc., 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); TriMed, Inc. v. Stryker Corp., 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 para. 6 applies); Applied Med. Res. Corp. v. U.S. Surgical Corp., 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”); Mass. Inst. of Tech. 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).
II. Broadening Construction	
A. Claim Differentiation	
“Pure” claim differentiation creates a presumption that independent claims are broader than dependent claims.	Praxair, Inc. v. ATMI, Inc., 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.”); Voda v. Cordis Corp., 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

	<p>'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."); Phillips v. AWH Corp., 415 F.3d 1303, 1309–10 (Fed. Cir. 2005) (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"); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) ("Although that 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 unrebutted 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.").</p>
Presumption may be rebutted based on specification or prosecution history, or where § 112 para. 6 involved.	<p>Regents of the Univ. of Cal. v. Dakocytomation Cal., Inc., 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."); Sinorgchem Co., Shandong v. Int'l Trade Comm'n, 511 F.3d 1132, 1140 (Fed. Cir. 2007) ("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."); SRAM Corp. v. AD-II Eng'g, Inc., 465 F.3d 1351, 1357–58 (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); Seachange Int'l, Inc. v. C-COR Inc., 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>Epistar Corp. v. U.S. Int'l Trade Comm'n, 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"); Linear Tech. Corp. v. Int'l Trade Comm'n, 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); Howmedica Osteonics Corp. v. Wright Med. Tech., Inc., 540 F.3d 1337, 1345–46 (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</p>

the claim language); Decisioning.com, Inc. v. Federated Dep’t Stores, Inc., 527 F.3d 1300, 1314 (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.”); Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (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.”).

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