

Electronic *and* Software Patents

Law *and* Practice

Fourth Edition

Chapter 8: Claim Interpretation for Patent Drafters

Michael J. Mauriel

Mauriel Kapouytian Woods LLP

New York, New York

Stephen C. Durant

Schwegman Lundberg & Woessner, P.A.

San Jose, California

Andrew A. Noble

Mauriel Kapouytian Woods LLP

New York, New York

Intellectual Property Titles from Bloomberg BNA

Anatomy of a Patent Case
Biotechnology and the Federal Circuit
Constructing and Deconstructing Patents
Copyright Law Deskbook
Drafting Patent License Agreements
Drafting Patents for Litigation and Licensing
Electronic and Software Patents: Law and Practice
European Patent Practice for U.S. Attorneys
Global Patent Litigation: How and Where to Win
Harmon on Patents: Black-Letter Law and Commentary
Intellectual Property Law in Cyberspace
Intellectual Property, Software, and Information Licensing: Law and Practice
Intellectual Property Taxation: Transaction and Litigation Issues
Intellectual Property Technology Transfer
International Patent Litigation: A Country-by-Country Analysis
Legal Protection of Digital Information
Patents After the AIA: Evolving Law and Practice
Patents and the Federal Circuit
Patent Infringement Remedies
Patent Litigation Strategies Handbook
Patent Prosecution: Law, Practice, and Procedure
Patent, Trademark, and Copyright Laws
Patent, Trademark, and Copyright Regulations
Pharmaceutical Patent Law
Post-Grant Patent Practice
Products Comparison Manual for Trademark Users
Schwartz's Patent Law and Practice
Secondary Trademark Infringement
The PTAB Handbook
Trademark Dilution: Federal, State, and International Law
Trademark Infringement Remedies
Trademark Litigation Practice

For details on these and other related titles, please visit our Website at bna.com/bnabooks or call 1-800-960-1220 to request a catalog. All books are available on a 30-day free-examination basis.

Excerpt from Electronic and Software Patents: Law and Practice, Fourth Edition.
Copyright © 2016 The Bureau of National Affairs, Inc. Reproduced with permission.
To order a copy, visit www.bna.com/bnabooks/esp.

Electronic *and* Software Patents

Law *and* Practice

Fourth Edition

Editors-in Chief

Steven W. Lundberg

*Schwegman Lundberg &
Woessner, P.A.
Minneapolis, Minnesota*

Stephen C. Durant

*Schwegman Lundberg &
Woessner, P.A.
San Jose, California*

Ann M. McCrackin

*Black Hills IP
Schwegman Lundberg &
Woessner, P.A.
Minneapolis, Minnesota*

American Intellectual Property
Law Association
Arlington, VA

AIPLA

**Bloomberg
BNA**

Bloomberg BNA, Arlington, VA

*Excerpt from Electronic and Software Patents: Law and Practice, Fourth Edition.
Copyright © 2016 The Bureau of National Affairs, Inc. Reproduced with permission.
To order a copy, visit www.bna.com/bnabooks/esp.*

Copyright © 2016
The Bureau of National Affairs, Inc.

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold with the understanding that the editors, authors, and publishers are not thereby engaged in rendering legal, accounting, or other professional services. If legal advice or other expert assistance is required, the services of a competent professional person should be sought. In view of the dynamic nature of the law, including patent law, the vitality of any legal decisions relied upon herein should be updated and confirmed before filing any papers relying thereon in a court or in administrative proceedings.

Library of Congress Cataloging-in-Publication Data

Names: Lundberg, Steven W., editor. | Durant, Stephen C., editor. |
McCrackin, Ann M., editor.

Title: Electronic and software patents : law and practice / Editors-in-Chief
Steven W. Lundberg, Schwegman Lundberg & Woessner, P.A., Minneapolis,
Minnesota, Stephen C. Durant, Schwegman Lundberg & Woessner, P.A., San
Jose, California, Ann M. McCrackin, Black Hills IP Schwegman Lundberg &
Woessner, P.A. Minneapolis, Minnesota.

Description: Fourth edition. | Arlington, VA : Bloomberg BNA, 2016.

Identifiers: LCCN 2016052057

Subjects: LCSH: Computer software--United States--Patents.

Classification: LCC KF3133.C65 E43 2016 | DDC 346.7304/86--dc23 LC record available at
<https://lccn.loc.gov/2016052057>

All rights reserved. Photocopying any portion of this publication is strictly prohibited unless express written authorization is first obtained from The Bureau of National Affairs, Inc., 1801 S. Bell Street, Arlington, VA 22202, bna.com/bnabooks. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by The Bureau of National Affairs, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that \$1.00 per page is paid directly to CCC, 222 Rosewood Dr., Danvers, MA 01923, copyright.com, Telephone: 978-750-8400, Fax: 978-646-8600.

Published by Bloomberg BNA
1801 S. Bell Street, Arlington, VA 22202-4501
bna.com/bnabooks

ISBN: 978-1-68267-016-3
Printed in the United States of America

Excerpt from Electronic and Software Patents: Law and Practice, Fourth Edition.
Copyright © 2016 The Bureau of National Affairs, Inc. Reproduced with permission.
To order a copy, visit www.bna.com/bnabooks/esp.

8

Claim Interpretation for Patent Drafters

Michael J. Mauriel

*Mauriel Kapouytian Woods LLP
New York, New York*

Stephen C. Durant

*Schwegman Lundberg & Woessner, P.A.
San Jose, California*

Andrew A. Noble

*Mauriel Kapouytian Woods LLP
New York, New York*

§8.01	Introduction	8-3
§8.02	Basic Rules Governing Claim Interpretation by the Courts	8-5
	A. Fact Versus Law	8-5
	B. Standard of Review	8-5
	C. Defining the Inquiry: Ordinary Meaning of Disputed Terms.....	8-7
	D. Sources of Interpretation	8-8
	1. Intrinsic Evidence: Claims, Specification, and Prosecution History	8-8
	a. Claim Language	8-9
	b. Specification	8-10
	c. Prosecution History	8-11
	d. Prior Art	8-13
	2. Extrinsic Evidence	8-14
	a. Expert Testimony	8-15
	b. Dictionaries: <i>Texas Digital</i> and <i>Phillips</i>	8-16
	c. Other Sources	8-21
	E. Putting It All Together in Light of <i>Phillips</i>	8-21

8-2	<i>Electronic and Software Patents</i>	§8.
§8.03	Claim Language Issues	8-22
	A. Functional Versus Structural Language.....	8-22
	1. Avoiding Unintentional Application of 35 U.S.C. §112(f)	8-22
	2. Defining Structure Through Function: Explaining Inventive Concepts.....	8-26
	3. Separate Functions Versus Separate Structures	8-29
	B. Linking Terms	8-30
	1. Functional Versus Structural Linking	8-31
	2. Functionally Qualifying a Linking Term	8-32
	3. Failing to Functionally Qualify a Temporal Linking Term	8-33
	4. Implied Part of a Whole	8-34
	C. Claim Differentiation	8-35
	D. After-Developed Technology and Literal Claim Scope	8-40
	1. Danger of “Conventional” or “Standard” in Qualifying Claim Elements	8-41
	2. Means-Plus-Function Claims and After-Developed Technology	8-42
	3. Definitions Frozen in Time	8-42
	E. The Preamble	8-43
	F. Other Claim Issues	8-47
	1. Defining by Claiming	8-47
	2. Open-Ended Versus Limited	8-48
§8.04	Specification Issues	8-51
	A. Patentee as “Lexicographer”	8-51
	1. Definition by Implication	8-52
	2. Definition by Varied Usage.....	8-52
	3. Risk of Adding Additional Ambiguities	8-54
	B. Specification-Based Disclaimer	8-54
	1. Referencing “Invention” Versus “Embodiment”	8-55
	2. Statements of Advantage	8-60
	C. Importance of Varied Examples	8-64
	D. Importance of Clear Examples.....	8-66
	E. Making Invention’s Purpose Clear	8-67
	F. Making Invention’s “Way” Clear	8-68
	G. Incorporation by Reference.....	8-69
	H. Section 112 Disclosure Doctrines and Claim Scope.....	8-70
	1. Enablement and Claim Scope.....	8-71
	2. Written Description and Claim Scope	8-72
	a. Written Description Is Distinct From Enablement.....	8-73
	b. Written Description and New Matter	8-73
	c. Written Description and Indefiniteness Under §112(f).....	8-75
§8.05	Prosecution History	8-81
	A. Prosecution Disclaimer	8-81

§8.01.	<i>Claim Interpretation for Patent Drafters</i>	8-3
	B. Importance of Carefully Limited Statements	
	Distinguishing Prior Art	8-84
	C. Importance of Precision in Amendments to Avoid Prior	
	Art	8-86
	D. Patentee’s Statements Affect Interpretation Even if the	
	Examiner Does Not Rely on Them	8-87
	E. Statements in an Information Disclosure Statement	8-88
	F. Examiner Statements in the Reasons of Allowance	8-88
§8.06	Claim Interpretation in <i>Inter Partes</i> Review and Other	
	Post-Grant Proceedings	8-89
§8.07	Conclusion	8-92

§8.01 Introduction

Litigation is the ultimate test of a patent, and claims are the ultimate measure of a patent’s reach. During prosecution, claims are measured in view of the prior art and are subject to ex parte negotiation with the U.S. Patent and Trademark Office (USPTO). Although the patent office gives consideration to the scope of the claims, it is not until litigation that the scope of the claims is fiercely debated and finally fixed.

The litigation battle over a claim’s scope is in part centered on measuring that claim against an accused infringing device. However, at the time the patent is drafted and prosecuted, the nature of the future accused infringing device may be unknown. At the same time, what the patent practitioner does in preparing and prosecuting the patent creates an intrinsic record that is central to the court’s measure of claims during later litigation. The patent prosecutor’s challenge, therefore, is to prepare the application and prosecute the claims in a manner that achieves the broadest valid scope of protection. To meet this challenge, a patent prosecutor must have an appreciation for the different rules of claim construction, including both the ordinary meaning standard applied by the courts in litigation and the broadest reasonable interpretation standard applied by the USPTO in *inter partes* review and other post-grant proceedings. This chapter explores the rules governing the interpretation of patent claims from the perspective of a patent practitioner, who starts with a blank slate and drafts, then prosecutes, a patent application through the USPTO, thus creating the intrinsic record ultimately used to measure the claims in later litigation.

The Federal Circuit has stated that claim construction is “simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.”¹ Although the concept may be simple, the task is often more easily said than done. The Federal Circuit’s en banc decision in *Phillips v. AWH Corp.*² has been cited by hundreds of case decisions since it issued. Although some had hoped the Federal Circuit would

¹Terlep v. Brinkmann Corp., 418 F.3d 1379, 1382, 76 USPQ2d 1053, 1056 (Fed. Cir. 2005).

²415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) (en banc), cert. denied, 546 U.S. 1170 (2006).

set forth clear and simple guidelines for claim construction, the cases since *Phillips* confirm that, while *Phillips* did place renewed emphasis on the specification and reined in over-reliance on dictionaries to construe claims, claim construction is still challenging and often unpredictable. Courts have continued the same basic struggle that predated *Phillips*: How to interpret claims in light of the specification while not unfairly importing limitations from the specification and file history.

Cases decided since *Phillips* show that courts, even panels of the Federal Circuit, have continued to find difficulty in determining, for example, whether and how to invoke dictionary definitions in claim interpretation, or whether and when statements made in the specification or during patent prosecution rise to the level of disavowing claim scope or recognizing when the patentee acts as his own lexicographer.³

That these struggles remain is perhaps not surprising given the multiple (sometimes competing) tenets of claim construction sanctioned by *Phillips*. Indeed, a cynical view of *Phillips* may be that the en banc panel eschewed bright-line rules in order to ensure the existence of enough rules to justify any desired outcome-driven result in any given case.⁴ Nonetheless, the approach set out in *Phillips* may represent the best of the possible worlds. A more bright-line approach than offered by *Phillips* could, and likely would, result in claim constructions that are either unfairly broad (to the detriment of the public, accused infringers, or even patent holders seeking to avoid invalidity issues due to prior art or written description deficiencies) or unduly narrow (to the detriment of inventors and patent holders).

There are lessons that patent prosecutors can learn from many cases decided since *Phillips*. Indeed, the renewed focus on the actual language of claims, in light of the support (or lack of support) for claim language in the specification and the file history, shows that it is more critical than ever for patent prosecutors to proceed cautiously when drafting patent documents and making arguments to the USPTO.

³Compare, for example, the majority and dissenting opinions in *Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F.3d 1343, 76 USPQ2d 1432 (Fed. Cir. 2005).

⁴Indeed, in *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1327, 78 USPQ2d 1382, 1386 (Fed. Cir. 2006), and *Lava Trading, Inc. v. Sonic Trading Mgmt., LLC*, 445 F.3d 1348, 1350, 78 USPQ2d 1624, 1625 (Fed. Cir. 2006), the Federal Circuit expressed considerable frustration when presented with appeals from claim construction orders after the parties stipulated to judgments of no infringement under the trial court's interpretation of the claims without creating a record of the factual issues in dispute. Despite the rule that claims should be construed without reference to an accused device set forth in *SRI Int'l, Inc. v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1118, 227 USPQ 577, 583 (Fed. Cir. 1985) (en banc), the Federal Circuit ruled that some familiarity with the infringement issues can allow better framing of the claim construction issues. "While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction." 445 F.3d at 1350, 78 USPQ2d at 1386.

§8.02 Basic Rules Governing Claim Interpretation by the Courts

A. Fact Versus Law

Prior to 1996, courts in general, and the Federal Circuit in particular, had established general principles for addressing questions of claim interpretation.⁵ However, it had not been clearly established whether claim interpretation was a question of law or a question of fact. *Markman v. Westview Instruments*⁶ established that claim interpretation is a matter of law decided by a judge, rather than a question of fact decided by a jury. With this distinction made clear, the Federal Circuit's mandate to develop clear rules for interpreting claims was firmly in place. Since 1996, the Federal Circuit has articulated and applied an elaborate set of principles for interpreting claims, and those principles are the subject of this chapter.

The range of “equivalents” under 35 U.S.C. §112(f) is an exception to the general rule that claim interpretation is a matter of law. Such equivalency is a factual question even though, technically, it is a question of literal claim scope. In *Utah Medical Products, Inc. v. Graphic Controls Corp.*, the court held that “the trial court properly reserved the factual issue regarding which structures qualify as equivalents for the jury.”⁷

B. Standard of Review

Although questions of law are generally subject to de novo review by an appellate court, after *Markman* a question remained regarding review of seemingly factual issues that a lower court might address in conjunction with reaching a particular claim construction. The Federal Circuit addressed this question in *Cybor Corp. v. FAS Technologies, Inc.*⁸ with respect to evaluating expert testimony. The en banc court noted a number of post-*Markman* panel opinions of the Federal Circuit that suggested “deference to what are asserted to be factual underpinnings of claim construction.”⁹ The court disavowed such suggestions in these prior opinions and held that “we review claim construction

⁵See, e.g., *SRI Int'l, Inc. v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1117, 227 USPQ 577, 582 (Fed. Cir. 1985) (“To understand what is being claimed in each claim one must often refer to the specification, prosecution, and prior art.”). See Chapter 6 for a detailed discussion of claim drafting.

⁶517 U.S. 370, 38 USPQ2d 1461 (1996).

⁷350 F.3d 1376, 1383, 69 USPQ2d 1136, 1141 (Fed. Cir. 2003). At least one commentator has cited an earlier case, *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 51 USPQ2d 1225 (Fed. Cir. 1999), as being the first clear holding establishing this principle (see ROBERT L. HARMON ET AL., PATENTS AND THE FEDERAL CIRCUIT (10th Ed. 2011)). While it is perhaps a slim distinction, *Odetics* only stated that the question of *infringement* under §112 (6) equivalents is a question of fact. *Odetics*, 350 F.3d at 1268, 48 USPQ2d at 1230–31. The question of where the court's role in claim interpretation under that section ends and the jury's begins was more clearly before, and addressed by, the *Utah Medical* court.

⁸138 F.3d 1448, 46 USPQ2d 1169 (Fed. Cir. 1998) (en banc).

⁹*Id.* at 1455, 46 USPQ2d at 1174. See also *Fromson v. Anitec Printing Plates*, 132 F.3d 1437, 1444, 45 USPQ2d 1269, 1274 (Fed. Cir. 1997), *cert. denied*, 525 U.S. 817, 119 S. Ct. 56 (1998) (“[T]he district court's findings of scientific/technologic fact were material to the issue of construction of the term ‘anodizing.’”).

de novo on appeal including any allegedly fact-based questions relating to claim construction.”¹⁰

The Supreme Court overruled *Cybor* in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*¹¹ *Teva* presented the question of whether the “evidentiary underpinnings” (as *Markman* phrased it) of claim construction were entitled to deferential review, at least to the extent those “underpinnings” involved resolution of “an underlying factual dispute.”¹² The dispute arose in the context of determining whether the term “molecular weight” in the claims was indefinite.¹³ The district court had heard conflicting expert testimony on the question and determined that a skilled artisan would have understood which of three known methods should have been applied to determine the meaning of “molecular weight” with sufficient definiteness.¹⁴ The Federal Circuit reversed. The Supreme Court stated that the Federal Circuit had applied de novo review to all aspects of the district court’s claim construction including the determination of “subsidiary facts.”¹⁵ The Court held that the more deferential standard of “clear error” review applies to “those factual findings that underlie a district court’s claim construction.”¹⁶ The Court did not explicitly address the practical problem of how to separate out findings of fact versus ultimate legal conclusions in the context of claim interpretation other than to say that appellate courts “have long found it possible to separate factual from legal matters.”¹⁷ The Supreme Court identified the relevant “factual finding” of the district court as its crediting of the *Teva* expert’s view that the curves in figure 1 of the patent showed which of the three possible definitions of molecular weight applied and its rejecting of the *Sandoz* expert’s contrary view.¹⁸ According to the Court, that factual finding was in turn the basis for the district court’s “legal conclusion that figure 1 did not undermine *Teva*’s argument that molecular weight referred to the first method of calculation.”¹⁹ The Court held that the Federal Circuit could not properly reject the explanation of *Teva*’s expert without determining that the district court’s acceptance of the *Teva* expert’s explanation was “clearly erroneous.”²⁰

The *Teva* case shows the challenges in separating factual and legal questions in the context of claim construction. Although the Federal Circuit had come to a different conclusion on the ultimate legal question of indefiniteness, in doing so the Federal Circuit had not clearly rejected particular factual findings of the district court. Rather, the Federal Circuit had first concluded that two

¹⁰*Id.* at 1456, 46 USPQ2d at 1174.

¹¹135 S. Ct. 831, 113 USPQ2d 1269 (2015).

¹²135 S. Ct. at 835.

¹³*Id.* at 836.

¹⁴*Id.*

¹⁵*Id.*

¹⁶*Id.* at 842.

¹⁷*Id.* at 839.

¹⁸*Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 843, 113 USPQ2d 1269 (2015).

¹⁹*Id.*

²⁰*Id.*

prosecution history statements (from later continuation applications) regarding the term molecular weight “cannot be reconciled.”²¹ It had then concluded that “[t]he specification does not resolve the ambiguity.”²² In reaching that conclusion about the specification, the Federal Circuit had analyzed the expert testimony. But because the Federal Circuit was weighing that testimony against the apparent contradictions in the related prosecution histories, and not simply evaluating the testimony itself, it is difficult to determine where a “factual finding” regarding the testimony ends and a “legal finding” of how to balance that testimony against the intrinsic evidence begins.

Later, on remand from the Supreme Court, the Federal Circuit explicitly characterized and then accepted the district court’s factual findings.²³ However, the Federal Circuit nevertheless reached the same legal conclusion that it had before, namely, that the claim in question was indefinite.²⁴ It based that conclusion on ambiguity it found in the prosecution history of related patents and on the Supreme Court’s revised indefiniteness standard that claims must inform one skilled in the art about the scope of the invention “with reasonable certainty.”²⁵

The Federal Circuit’s *Teva* opinions, both before and after remand, are notable for the emphasis placed on the prosecution history in determining indefiniteness. As the dissent on remand noted, the majority cited no prior case “in which a statement made in prosecuting a later related patent was deemed sufficient, standing alone, to render an earlier issued patent indefinite.”²⁶ However, the panel opinions in *Teva* suggest that prosecution history, even if only in later continuation applications, might turn an otherwise definite claim of an issued patent into an indefinite one. Whether this approach is followed by future panels remains to be seen.

C. Defining the Inquiry: Ordinary Meaning of Disputed Terms

Although in theory infringement litigation is about the scope of an entire claim or claims, the judicial process inevitably narrows the dispute to the meaning of particular claim terms. Claim interpretation begins with an inquiry into a disputed claim term’s “ordinary and customary meaning,” which may be defined as “the meaning that the term would have to a person of ordinary skill in

²¹*Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363, 1369, 107 USPQ2d 1655, 1659 (Fed. Cir. 2013).

²²*Id.*

²³789 F.3d 1335, 1341–42, 115 UPSQ2d 1210, 1215 (Fed. Cir. 2015).

²⁴789 F.3d at 1345, 115 USPQ2d at 1218.

²⁵*Id.*

²⁶789 F.3d at 1347, 115 USPQ2d at 1219–20 (Mayer, J., dissenting).

the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.”²⁷

Although this definition of the inquiry might appear to imply an inherently factual inquiry, the court is ultimately guided by a legal framework dictating what and how various source materials should be used to interpret the claims. As the court stated in *Phillips*,

[b]ecause the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.”²⁸

The central question of the post-*Markman* era has been: What relative weight should be given to the various materials that courts use to interpret claims?

D. Sources of Interpretation

1. Intrinsic Evidence: Claims, Specification, and Prosecution History

In *Vitronics Corp. v. Conceptronic, Inc.*,²⁹ the Federal Circuit made unmistakably clear the primacy of *intrinsic* evidence—the claims, the specification, and the prosecution history—over *extrinsic* evidence, namely, everything else, particularly expert testimony. The court stated that “intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language. . . . In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”³⁰ The court particularly emphasized the importance of the specification: “[T]he 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.”³¹ The court also made it clear that prosecution history should also be looked to whenever it is in evidence and noted that such history “is often of critical significance.”³²

In *Phillips*, the en banc court reaffirmed the principles set forth in *Vitronics*. In particular, the court emphasized the role of the specification stating: “The claims, of course, do not stand alone. Rather, they are part of a ‘fully integrated written instrument,’ consisting principally of a specification that concludes

²⁷*Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006).

²⁸*Id.* at 1314, 75 USPQ2d at 1327 (citation omitted).

²⁹90 F.3d 1576, 39 USPQ2d 1573 (Fed. Cir. 1996).

³⁰*Id.* at 1582–83, 39 USPQ2d at 1576.

³¹*Id.* at 1582, 39 USPQ2d at 1577.

³²*Id.*

with the claims.”³³ Grounding its view in the language of the patent statute, the court explained that “[t]he close kinship between the written description and the claims is enforced by the statutory requirement that the specification describe the claimed invention in ‘full, clear, concise, and exact terms.’”³⁴

Cases decided since *Phillips* confirm that claims will be construed, where possible, primarily based on the claims, specification, and prosecution history.

a. Claim Language

The actual claim language remains of paramount importance. *Phillips* reiterated that “[i]t is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’”³⁵ This principle has been quoted by courts in circumstances where reading in limitations from the specification or file history is found to be improper. Thus, in *Purdue Pharma LP v. Endo Pharmaceuticals, Inc.*,³⁶ the Federal Circuit reversed a claim construction that impermissibly imported a dosage limitation that was not an express element of the claimed drug therapy. “It [is] important to note that the claims contain no limitations relating to the effectiveness of dosages in controlling pain in patients, and *it is the claims ultimately that define the invention.*”³⁷ Likewise, in the high-profile “BlackBerry” case of *NTP, Inc. v. Research in Motion, Ltd.*,³⁸ the Federal Circuit declined to import several limitations from the specification as urged by the defendant, rejecting the argument that “electronic mail system” must be limited to wired lines, such as the same-generation technology disclosed in the specification, rather than the defendant’s wireless product. “Generally, ‘a party wishing to use statements in the written description to confine or otherwise affect a patent’s scope must, at the very least, point to a term or terms in the claim with which to draw in those statements.’”³⁹ If there is no claim term that requires “clarification” by the specification, “there is no legitimate way to narrow the property right.”⁴⁰

Patent claim language is not always complicated. *Phillips* confirmed that “[i]n some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of widely accepted meaning of commonly understood words.”⁴¹ Thus, in *Callicrate*

³³*Phillips*, 415 F.3d at 1315, 75 USPQ2d at 1327 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 978 (Fed. Cir. 1995)).

³⁴*Id.* at 1316.

³⁵*Phillips v. AWH Corp.*, 415 F.3d 1303, 1312, 75 USPQ2d 1321, 1325 (Fed. Cir. 2005) (en banc).

³⁶438 F.3d 1123, 77 USPQ2d 1767 (Fed. Cir. 2006).

³⁷*Id.* at 1136, 77 USPQ2d at 1777 (emphasis added).

³⁸418 F.3d 1282, 75 USPQ2d 1763 (Fed. Cir. 2005), *cert. denied*, 126 S. Ct. 1174 (2006).

³⁹*Id.* at 1310, 75 USPQ2d at 1784.

⁴⁰*Id.*

⁴¹*Phillips*, 415 F.3d at 1314, 75 USPQ2d at 1327.

v. *Wadsworth Manufacturing, Inc.*,⁴² where a claim used “straightforward mechanical technology and understandable claim language,” the trial court erred by importing limitations from a preferred embodiment disclosed in the specification.⁴³

By the same token, the invention is limited by the claims even if a broader invention may be disclosed in the specification. In *Norian Corp. v. Stryker Corp.*,⁴⁴ the Federal Circuit explained that whether the claim term “a” means “one or more” or is limited to “only one” depends primarily on whether the claim is open (i.e., typified by the use of the transitional term “comprising”) or closed (typically where “consisting of” language is used), at least in the absence of other evidence in the specification or file history. Thus, a patent that claimed “a solution *consisting of* water and a sodium phosphate” was not literally infringed by an accused solution of water and multiple sodium phosphates, even though such a solution was disclosed by the specification.⁴⁵ Further evidence that the claim was narrow was found where the phrase “at least one” appeared in other claim elements, and the prosecution history suggested a scope disclaimer—which also precluded operation of the doctrine of equivalents. Patent practitioners should be careful in the uneven use of phrases across claims, because by using the phrase “at least one” in one claim, other claims that do not have that phrase may not be construed in the same manner, all else being equal.

b. Specification

In most cases, however, claims will not be read in a vacuum. Because the role of the specification is to describe and enable the invention, the claims in turn “cannot be of broader scope than the invention that is set forth in the specification.”⁴⁶ Thus, in *TAP Pharmaceutical Products, Inc. v. OWL Pharmaceuticals, LLC*,⁴⁷ the claims were construed to include an element, namely a “drug-retaining substance,” that did not actually appear in the claim language.⁴⁸ The specification made clear that the phrase “particles containing a water-soluble drug” must be interpreted as requiring both a drug and some substance in which to retain the drug.⁴⁹ All of the 31 examples in the specification described the use of particles containing a drug and a drug-retaining substance, and the specification also provided that a drug-retaining substance “must be

⁴²427 F.3d 1361, 77 USPQ2d 1041 (Fed. Cir. 2005).

⁴³*Id.* at 1367–68, 77 USPQ2d at 1046. *See also* *Acumed LLC v. Stryker Corp.*, 483 F.3d 800 (Fed. Cir. 2007) (majority affirmed that meaning of the term “curved shank” was “readily apparent even to lay judges” despite defendant’s claim that the specification limited its meaning).

⁴⁴432 F.3d 1356, 77 USPQ2d 1242 (Fed. Cir. 2005).

⁴⁵*Compare* *Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1350–51, 76 USPQ2d 1432, 1437–38 (Fed. Cir. 2005) (finding that terms “a” and “an” meant “one or more” when used with the transitional word “comprising”).

⁴⁶*On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1340, 78 USPQ2d 1428, 1434 (Fed. Cir. 2006) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321, 75 USPQ2d 1321 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006)).

⁴⁷419 F.3d 1346, 76 USPQ2d 1126 (Fed. Cir. 2005).

⁴⁸*Id.* at 1353, 76 USPQ2d at 1132.

⁴⁹*Id.*

used in sufficient amount to ensure that the initial viscosity of the inner aqueous layer in the water-in-oil emulsion. . . .”⁵⁰ Moreover, the drug-retaining substance was key to a touted benefit of the invention.⁵¹ The court added that, because the element was properly supplied by the specification, application of the doctrine of equivalents was precluded because it would vitiate an essential limitation of the claim.⁵²

Still, where a specification is not limiting, broad constructions can result. In *Dorel Juvenile Group, Inc. v. Graco Children’s Products*,⁵³ a 2–1 panel of the Federal Circuit affirmed a trial court’s application of ordinary meaning to the terms “removably attached” and “removably secured” to mean attached with the capability of removal without regard to the difficulty of removal, where there was nothing inconsistent with this definition in the specification. Thus, an accused child car seat would not need to detach from its base under normal usage to infringe; it was enough that it was capable of detachment. Circuit Judge Newman dissented, observing that detachment required the removal of six “one way” screws such that the device was virtually not removable by the end user.⁵⁴

c. Prosecution History

Phillips stated that prosecution histories “can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.”⁵⁵ Cases can be placed on a spectrum, where on one side an applicant may limit the meaning of a claim term with a “clear and unmistakable” disavowal of claim scope during prosecution (also called the doctrine of “prosecution disclaimer,” discussed in more detail at §8.05.A below). Characterizing an aspect of the invention in a specific manner to the Patent Examiner in a way that overcomes a rejection based on prior art may constitute a disavowal.⁵⁶ For example, in *Atofina v. Great Lakes Chemical Corp.*,⁵⁷ the Federal Circuit found that the applicant had disclaimed coverage of metal oxides other than chromium-based oxides during patent prosecution, thus resulting in claims that were designed around with other oxides. The somewhat similar doctrine of prosecution history estoppel also generally precludes application of the doctrine of equivalents to the narrowed claims.

At the other end of the spectrum, where claim language and the specification provide support for a broad interpretation and the prosecution history contains no clear disavowal of claim scope, prosecution history is unlikely to narrow the

⁵⁰*Id.*

⁵¹*Id.*

⁵²*Id.* at 1354, 76 USPQ2d at 1133.

⁵³429 F.3d 1043, 1046, 77 USPQ2d 1090, 1092–93 (Fed. Cir. 2005).

⁵⁴*Id.* at 1047, 77 USPQ2d at 1093. For further discussion on specification issues, see §8.04 below.

⁵⁵*Phillips v. AWH Corp.*, 415 F.3d 1303, 1317, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006).

⁵⁶*Purdue Pharma LP v. Endo Pharms., Inc.*, 438 F.3d 1123, 1136, 77 USPQ2d 1767, 1776 (Fed. Cir. 2006).

⁵⁷441 F.3d 991, 78 USPQ2d 1417 (Fed. Cir. 2006).

claims. For example, in *Sorensen v. International Trade Commission*,⁵⁸ a patent claiming a method of plastic injection molding that included a step requiring the injection of a second plastic material having “different characteristics” from a first plastic material used in an earlier step. The claim language was broad, and the specification showed that even mere color differences could serve as a “different characteristic.”⁵⁹ Because there was no clear and unambiguous disavowal of claim scope in relation to the material characteristics that could differ, infringement would be found where the second injected material differed from the first material even only in color.⁶⁰

Even statements in the prosecution history that might otherwise appear to disavow claim scope can be saved by a well-crafted specification that helps make clear that the statement in the prosecution was an inadvertent mistake. In *Elbex Video, Ltd. v. Sensormatic Electronics Corp.*,⁶¹ the claim in question related to a system for controlling multiple television cameras. The system received both video signals and identifying “code” signals from the remote cameras. The specification showed that the claimed “receiving means for receiving said video signals and said 1st code” included a monitor, but also showed a low-pass in front of the monitor and made clear that the code signals were not passed to the monitor.⁶² During prosecution, the applicant’s attorney stated that the code signals were “received by the monitor.”⁶³ The Federal Circuit noted that “the statement in the prosecution history was not supported by even a shred of evidence from the specification.”⁶⁴ In declining to hold that the apparently inadvertent misstatement in the prosecution history trumped a clear specification, the court, quoting *Phillips*, noted that “because the prosecution history represents an ongoing negotiation between the PTO and the application, . . . it often lacks the clarity of the specification and thus is less useful for claim construction purposes.”⁶⁵

Another inadvertent misstatement during prosecution was similarly not enough to modify the clear meaning of the claim in *HTC Corp. v. IPCom GmbH & Co.*⁶⁶ The claim in question was directed to a “mobile station” for interacting with a network that performed certain steps to “handover” the mobile station from one base station to another.⁶⁷ HTC, the accused infringer, argued that the claim improperly mixed apparatus and method limitations.⁶⁸ The question turned on whether the method steps recited in the claim referred to steps carried out by the mobile handset or by the network. If the former, then the claim would be indefinite because it would, according to the court, recite both an

⁵⁸427 F.3d 1375, 1377–78, 77 USPQ2d 1083, 1084–85 (Fed. Cir. 2005).

⁵⁹*Id.* at 1379, 77 USPQ2d at 1085–86.

⁶⁰*Id.* at 1381, 77 USPQ2d at 1087.

⁶¹508 F.3d 1366, 85 USPQ2d 1137 (Fed. Cir. 2007).

⁶²*Id.* at 1370–71, 85 USPQ2d at 1140–41.

⁶³*Id.* at 1369, 85 USPQ2d at 1139.

⁶⁴*Id.* at 1371, 85 USPQ2d at 1141.

⁶⁵*Id.* at 1372, 85 USPQ2d at 1141 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc), *cert denied*, 546 U.S. 1170 (2006)).

⁶⁶667 F.3d 1270, 101 USPQ2d 1518 (Fed. Cir. 2012).

⁶⁷*Id.* at 1274, 101 USPQ2d at 1521.

⁶⁸*Id.* at 1273, 101 USPQ2d at 1520.

apparatus and a method. If the latter, however, the claim would not be indefinite because the method language would “merely describe the network environment in which the mobile station must be used.”⁶⁹ The court noted that both the claim language and the specification made clear “that the network, rather than the base station, performs the enumerated functions.”⁷⁰ However, HTC argued—and the district court had agreed—that because the applicants’ attorney had referred to “the claimed process” in responding to an examiner’s rejection, the applicants had acknowledged that the claim recited method steps and therefore the claims were indefinite.⁷¹ The Federal Circuit disagreed, concluding that “[a]n attorney’s single reference to a ‘process’ in the office action response is unpersuasive when weighed against the plain language of the claims and the specification, both of which clearly indicate that the enumerated functions are part of the network environment.”⁷² The court stated that “the claim language and the specification generally carry greater weight than the prosecution history,” citing the reasons set forth in *Phillips*.⁷³

In the middle of the spectrum are cases that require more analysis. Where the specification is not sufficiently supportive, the prosecution history can serve to narrow the ordinary meaning of claim terms even without a “clear and unmistakable” disavowal of claim scope made in response to an office action. For example, in *Nystrom v. Trex Co., Inc.*,⁷⁴ the applicant during prosecution consistently used the term “board” to refer to wood cut from a tree log. “Although there was no clear disavowal of claim scope, there was nothing in the intrinsic record to support the conclusion that a skilled artisan would have construed the term ‘board’ more broadly than a piece of construction material made from wood cut from a log.”⁷⁵ Thus, the patent holder was not entitled to a broader construction.⁷⁶

These cases highlight the need for caution when characterizing inventions before the USPTO. Practitioners should make clear that narrow characterizations apply only to specific embodiments, unless a narrow characterization is necessary to overcome the prior art.

d. Prior Art

The court has established that “prior art cited in a patent or cited in the prosecution history constitutes intrinsic evidence.”⁷⁷ In *V-Formation, Inc. v. Benetton Group, Inc.*, as part of its interpretive analysis, the court looked to usage of the term “rivet” in a prior art reference cited on the face of the patent

⁶⁹*Id.* at 1274, 101 USPQ2d at 1521.

⁷⁰*Id.* at 1275, 101 USPQ2d at 1522.

⁷¹*HTC Corp. v. IPCOM GmbH & Co.*, 667 F.3d 1270, 1276, 101 USPQ2d 1518, 1522 (Fed. Cir. 2012).

⁷²*Id.*, 101 USPQ2d at 1522–23.

⁷³*Id.*, 101 USPQ2d at 1522 (citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005)).

⁷⁴*Nystrom v. Trex Co., Inc.*, 424 F.3d 1136, 1145, 76 USPQ2d 1481, 1487 (Fed. Cir. 2005), *cert. denied*, 126 S. Ct. 1654 (2006).

⁷⁵*Id.*

⁷⁶*Id.*

⁷⁷*V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 1307, 1311, 74 USPQ2d 1042, 1046 (Fed. Cir. 2005) (quoting *Kumar v. Ovonic Battery Co.*, 351 F.3d 1364, 1368 (Fed. Cir. 2003)).

and in an Information Disclosure Statement.⁷⁸ In support of its reasoning, the court quoted language from another case stating that when prior art that sheds light on the meaning of a term is cited by the patentee, it can have particular value as a guide to the proper construction of the term, because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning.⁷⁹

2. Extrinsic Evidence

When claims cannot be unambiguously construed based on the claim language, specification, prosecution history, and cited prior art, the court may consult extrinsic sources of evidence. For example, the recent case *Virginia Innovation Sciences, Inc. v. Samsung Electronics Co.*⁸⁰ is illustrative of when extrinsic evidence may be required for interpreting claims. In *Virginia Innovation*, the patents in suit were directed to a device that converted compressed video content received by a mobile phone into a video signal format ready for display on a larger external alternative display such as a television.⁸¹ At issue was the construction of the closely linked claim terms “display format” and “converted video signal.” The district court construed the claim term “display format” to be a video signal in an uncompressed or decompressed video format “ready for use” by the alternative display, where “ready for use” meant that no “deconstruction and reassembly” of the signal could occur after transmission from the claimed device to the alternative display.⁸² A “converted video signal” was construed to require only a “change to the video signal” received from the mobile network and not a change to “the underlying video content” carried by the signal.⁸³ On appeal, the patentee argued that the court’s construction could not be correct because it necessarily excluded a preferred display format expressly identified in the specification, and that a “display format” is simply a decompressed encoded video signal in a format different from the format originally received by the mobile phone.⁸⁴ The accused infringer argued in response that the construction was consistent with the ordinary meaning of “display format,” and that an uncompressed/decompressed video signal must undergo further processing to become a video signal in a “display format.”⁸⁵ While the Federal Circuit agreed with the district court that a “display format” involved “something more than an uncompressed video signal,” the court found nothing in the intrinsic or extrinsic evidence on record to resolve whether signals in formats that required further deconstruction or reassembly at the alternative display in order to be displayed were necessarily excluded from the claimed

⁷⁸*Id.* at 1311, 74 USPQ2d at 1046.

⁷⁹*Id.* (quoting *Arthur Collins, Inc. v. Northern Telecom Ltd.*, 216 F.3d 1042, 1044 (Fed. Cir. 2000)).

⁸⁰614 F. App’x 503 (Fed. Cir. 2015) (nonprecedential).

⁸¹*Id.* at 504.

⁸²*Id.* at 506.

⁸³*Id.* at 512.

⁸⁴*Id.* at 507.

⁸⁵*Id.*

“display format.”⁸⁶ Similarly, the court found that the claims and the specification did not provide a clear understanding of a “converted” video signal, either as it was intended to be understood in the context of the patent or as it was understood in the art.⁸⁷ Thus, the court required “further examination of the prosecution history, evaluation of direct and cross-examination testimony from experts showing and explaining usage in the field, or consultation of other relevant sources as set forth in *Phillips*” to develop the record.⁸⁸

a. Expert Testimony

While clearly relegating expert testimony to a secondary role in interpreting claims, the court has made clear such evidence has a role to play in educating the judge about technical issues.⁸⁹ Moreover, when the extrinsic evidence does not contradict the specification and prosecution history, the court may use it during claim construction even when the issue might have been resolved solely on the basis of intrinsic evidence. For example, in *Fromson v. Anitec*,⁹⁰ the Federal Circuit noted in its review of the district court’s analysis that “[i]n this case, the technical experts not only aided the [district] court’s understanding of the technology, but they also provided evidence material to the interpretation of the claims” and that “[t]he district court’s findings of scientific/technologic fact were material to the issue of construction of the term.”⁹¹

In *Pitney Bowes, Inc. v. Hewlett-Packard Co.*,⁹² the court further clarified its position on the use of extrinsic evidence. After a thorough review of *Vitronics*, the court concluded that *Vitronics* does not preclude a judge from using extrinsic evidence to “ensure that his or her understanding of the technical aspects of the patent is not entirely at variance with the understanding of one skilled in the art.”⁹³ Thus, although *Vitronics* prohibits using extrinsic evidence to contradict the intrinsic evidence, it does not prohibit admission of extrinsic evidence for purposes of providing the judge with technical background to guide the judge’s review of the patent and prosecution history.

⁸⁶*Virginia Innovation Scis., Inc. v. Samsung Elec. Co.*, 614 F. App’x 503, 509–510 (Fed. Cir. 2015) (nonprecedential).

⁸⁷*Id.* at 512.

⁸⁸*Id.* at 511.

⁸⁹*See Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1585, 39 USPQ2d 1573, 1579 (Fed. Cir. 1996) (“Had the district court relied on the expert testimony and other extrinsic evidence solely to help it understand the underlying technology, we could not say the district court was in error.”).

⁹⁰132 F.3d 1437, 45 USPQ2d 1269 (Fed. Cir. 1997), *cert. denied*, 119 S. Ct. 56 (1998).

⁹¹*Id.* at 1444, 45 USPQ2d at 1274. To the extent that the language “findings of scientific/technologic fact” implied that the panel gave deferential review to questions related to claim construction, the case was overruled by *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454, 46 USPQ2d 1169 (Fed. Cir. 1998).

⁹²182 F.3d 1298, 51 USPQ2d 1161 (Fed. Cir. 1999).

⁹³*Id.* at 1309, 51 USPQ2d at 1168. *See also Phillips*, 415 F.3d at 1319, 75 USPQ2d at 1331 (“because extrinsic evidence can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean, it is permissible for the district court in its sound discretion to admit and use such evidence”); *Pause Tech. LLC v. TiVo, Inc.*, 419 F.3d 1326, 1331, 76 USPQ2d 1110, 1115 (Fed. Cir. 2005) (“A court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words with the written record of the patent.”)

With its focus on interpreting claims as they would have been understood at the time of the invention by a person of ordinary skill in the art, the en banc court in *Phillips* cited *Pitney Bowes* with approval and reiterated that trial judges have discretion to receive expert testimony on technical issues as well as the state of the art for claim interpretation.⁹⁴ Such testimony, however, cannot ignore or contradict the intrinsic evidence. Thus, in *Biagro Western Sales, Inc. v. Grow More, Inc.*,⁹⁵ the Federal Circuit rejected expert declarations regarding fertilizer-labeling guidelines and standards on which the plaintiff heavily relied for claim interpretation. “[T]he problem is that Biagro cannot tie its extrinsic evidence to the patent or the claim language.”⁹⁶ Nothing in the patent or prosecution history indicated that labeling standards would be relevant to the claimed fertilizer, and nothing in Biagro’s extrinsic evidence suggested that a person skilled in the art of fertilizer formulation would necessarily use a chemical equivalent to express the amount of phosphorous acid in a fertilizer that does not actually contain phosphorous acid.

The *Phillips* court also stated that “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.”⁹⁷ This rule weighed against an expert declaration in *Network Commerce, Inc. v. Microsoft Corp.*⁹⁸ that was submitted to show that the claimed software “download component” did not require a boot program. The expert declaration simply quoted passages from the specification and concluded: “I understand these passages to mean that there are possible embodiments of this invention that use a ‘download component’ that does not contain a boot program or executable code.”⁹⁹ This bald declaration was inconsistent with the intrinsic evidence and was not supported by any references to industry publications or other independent sources; it thus provided scant support for its assertion.¹⁰⁰

In *Cytologix Corp. v. Ventana Medical Systems, Inc.*,¹⁰¹ the Federal Circuit emphasized that, because claim construction is for the court to determine, experts should not be allowed to offer competing testimony on claim construction issues to a jury at trial: “The risk of confusing the jury is high when experts opine on claim construction before the jury even when, as here, the district court makes it clear to the jury that the district court’s claim constructions control.”¹⁰²

b. Dictionaries: Texas Digital and Phillips

Although dictionaries and technical treatises are generally “extrinsic” to the patent specification and the prosecution record, they have been given distinct

⁹⁴See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318, 75 USPQ2d 1321, 1330 (Fed. Cir. 2005) (en banc), cert. denied, 546 U.S. 1170 (2006) (citing *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308–09 (Fed. Cir. 1999)).

⁹⁵423 F.3d 1296, 1303–04, 76 USPQ2d 1347, 1351–52 (Fed. Cir. 2005).

⁹⁶*Id.* at 1303–04, 76 USPQ2d at 1351–52.

⁹⁷415 F.3d at 1318, 75 USPQ2d at 1330.

⁹⁸422 F.3d 1353, 76 USPQ2d 1330 (Fed. Cir. 2005).

⁹⁹*Id.* at 1361, 76 USPQ2d at 1336.

¹⁰⁰*Id.*

¹⁰¹424 F.3d 1168, 76 USPQ2d 1592 (Fed. Cir. 2005).

¹⁰²*Id.* at 1172, 76 USPQ2d at 1596.

treatment by the Federal Circuit as a special form of extrinsic evidence. In *Texas Digital Systems, Inc. v. Telegenix, Inc.*,¹⁰³ the court relied on a dictionary definition to resolve the interpretive question before it. The court stated that such references “publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art.”¹⁰⁴

Elsewhere, however, the court had articulated concern against overreliance on dictionary definitions. In *Multiform Desiccants, Inc. v. Medzam Ltd.*, the court rejected the patentee’s arguments relying on a dictionary definition, stating that: “Courts must exercise caution lest dictionary definitions, usually the least controversial source of extrinsic evidence, be converted into technical terms of art having legal, not linguistic, significance. The best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history.”¹⁰⁵

The question of the weight to be given to dictionary and other published definitions was the central question under en banc review by the Federal Circuit in *Phillips v. AWH*. The court in *Phillips* specifically limited the holding in *Texas Digital* and cases following in the same line. In particular, the court disavowed *Texas Digital*’s interpretive methodology “in which the specification should be consulted only after a determination is made, whether based on a dictionary, treatise, or other source, as to the ordinary meaning or meanings of the claim term in dispute.”¹⁰⁶ Rather, the Federal Circuit stated, a court should “instead focus[] at the outset on how the patentee used the claim term in the claims, specification, and prosecution history.”¹⁰⁷

While critiquing how the *Texas Digital* line of cases used dictionaries, the *Phillips* court reemphasized the proper role of dictionaries within the *Vitronics* framework:

As we said in *Vitronics*, judges are free to consult dictionaries and technical treatises ‘at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does [not] contradict any definition found in or ascertained by a reading of the patent documents.’¹⁰⁸

The court also did acknowledge the value of dictionaries as “an unbiased source ‘accessible to the public in advance of litigation.’”¹⁰⁹ As such, diction-

¹⁰³308 F.3d 1193, 64 USPQ2d 1812 (Fed. Cir. 2002).

¹⁰⁴*Id.* at 1203, 64 USPQ2d at 1818.

¹⁰⁵133 F.3d 1473, 1478, 45 USPQ2d 1429, 1433 (Fed. Cir. 1998).

¹⁰⁶*Phillips v. AWH Corp.*, 415 F.3d 1303, 1320, 75 USPQ2d 1321 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006).

¹⁰⁷*Id.* at 1321. The word “outset” as used by the Federal Circuit in *Phillips* must not be taken too literally. Under *Phillips*, a court can start with a general purpose or specialized dictionary to begin to understand the meaning of the term, even before reviewing the remainder of the patent—it just must ensure that any ultimate reliance on dictionaries accords with the intrinsic evidence. See *Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1348–49, 76 USPQ2d 1432, 1436 (Fed. Cir. 2005) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314, 1324, 75 USPQ2d 1321, 1335–36 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006)).

¹⁰⁸*Id.* at 1322 (quoting *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1585 (Fed. Cir. 1996)).

¹⁰⁹*Id.*

aries will likely have continuing evidentiary value in patent disputes. However, like expert testimony, the role of dictionaries after *Phillips* is clearly secondary to that of the specification and prosecution history.

Cases decided since *Phillips* show that courts still often refer to dictionaries, especially scientific and technical dictionaries, to construe claim terms—except that since *Phillips*, they tend to be more careful to avoid definitions that are not consistent with the intrinsic patent record. “Under *Phillips*, the rule that ‘a court will give a claim term the full range of its ordinary meaning,’ does not mean the term will presumptively receive its broadest dictionary definition or the aggregate of multiple dictionary definitions. . . .”¹¹⁰ “Rather, in those circumstances where reference to dictionaries is appropriate, the task is to scrutinize the intrinsic evidence in order to determine the most appropriate definition.”¹¹¹ Of course, where claims use a phrase (such as “download component”) that does not have any commonly understood meaning reflected in general or technical dictionaries, courts have little choice but to dispense with dictionaries and focus on the intrinsic evidence.¹¹²

Several appellate cases decided since *Phillips* have found *Texas Digital*–type over-reliance on dictionaries. Recall that in the *Phillips* case itself, the Federal Circuit found that dictionary definitions had improperly been used to narrow the claim scope in a manner inconsistent with the intrinsic evidence. On remand in that case, a jury not surprisingly found infringement of four claims and awarded \$1.85 million in compensatory damages.¹¹³ *Nystrom v. Trex Co.*¹¹⁴ provides a dramatic example of a post-*Phillips* case, which found that dictionary definitions resulted in too broad a reading. A pre-*Phillips* Federal Circuit panel decision in that lawsuit relied on broad dictionary definitions to find that the term “board” was not limited to wooden boards and that “manufactured to have” was not limited to manufacturing using woodworking techniques.¹¹⁵ The manufacture of the defendant’s plastic lumber boards was thus found to be infringing. Following the en banc panel’s decision in *Phillips*, the *Nystrom* panel withdrew its earlier opinion and replaced it with a new opinion that found the specification and prosecution history limited the claims to wooden boards manufactured with woodworking techniques.

What *Phillips* now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public—i.e., those of ordinary skill in the art—that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a

¹¹⁰Free Motion Fitness, Inc. v. Cybex Int’l, Inc., 423 F.3d 1343, 1348–49, 76 USPQ2d 1432, 1436 (Fed. Cir. 2005) (citations omitted).

¹¹¹*Id.* at 1349, 76 USPQ2d at 1436.

¹¹²*See, e.g.*, Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1359–60, 76 USPQ2d 1330, 1335 (Fed. Cir. 2005).

¹¹³*See Phillips v. AWH Corp.*, Case No. 97-cv-00212 MSK CBS, Docket No. 286 (D. Colo. filed Mar. 10, 2006).

¹¹⁴424 F.3d 1136, 76 USPQ2d 1481 (Fed. Cir. 2005), *cert. denied*, 126 S. Ct. 1654 (2006).

¹¹⁵374 F.3d 1105, 71 USPQ2d 1241, 1246–47 (Fed. Cir. 2004) (withdrawn).

broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source.¹¹⁶

Trex's plastic lumber products were thus found not to infringe.

*On Demand Machine Corp. v. Ingram Industries, Inc.*¹¹⁷ reports multiple instances in which a district court erred in finding that the ordinary meaning of patent claim terms was not limited by the specification, including facially broad terms like "sales information," "customer," and "paper pages." The opinion emphasizes that each term in a claim must be construed to implement the *invention* described in the specification (not just the claims).¹¹⁸ "When the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention, it is not necessary to disavow explicitly a different scope [such as may be found in a dictionary definition]."¹¹⁹ The invention disclosed was narrow: The patent disclosed only a kiosk-style on-demand book sales, ordering, and publishing system, and it always referred to "customers" in the retail environment sense, rather than referring to wholesale customers.¹²⁰ In litigation, the patent holder sought a broad reading of the claims that would cover Internet sales of books by resellers who obtained the books from small-run publishers. In reversing an infringement verdict and damages award, Circuit Judge Newman stated that "[c]are must be taken lest word-by-word definition, removed from the context of the invention, leads to an overall result that departs significantly from the patented invention."¹²¹

In a case involving digital video recorder technology, *Pause Technology LLC v. TiVo, Inc.*,¹²² the Federal Circuit rejected Pause's arguments based on technical dictionaries that its patent would cover a circular storage buffer based on logical addressing rather than the disclosed physical addressing.¹²³ The dictionary definitions were rejected largely because they were inconsistent with other terms appearing in the claims. "[P]roper claim construction . . . demands interpretation of the entire claim in context, not a single element in isolation."¹²⁴ In the wake of *Phillips*, the court appears to have become more careful to construe elements in view of the entire specification.

Other cases after *Phillips* generally support the use of dictionaries in claim construction. In *In re Johnston*,¹²⁵ a patentee sought a narrow claim interpretation to overturn a rejection based on prior art. The applicant argued that the USPTO Examiner had erred by relying on broad dictionary definitions to interpret the

¹¹⁶*Nystrom*, 424 F.3d at 1145, 76 USPQ2d at 1488.

¹¹⁷442 F.3d 1331, 1338–40, 78 USPQ2d 1428, 1432–36 (Fed. Cir. 2006).

¹¹⁸*Id.* at 1344, 78 USPQ2d at 1437 (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006) ("The 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 construction."); *Autogiro Co. of Am. v. United States*, 181 Ct. Cl. 55, 384 F.2d 391, 397–98 (Ct. Cl. 1967) ("use of the specification as a concordance for the claim . . . is a basic concept of patent law").

¹¹⁹442 F.3d at 1340, 78 USPQ2d at 1434.

¹²⁰*Id.*

¹²¹*Id.* at 1344, 78 USPQ2d at 1437.

¹²²419 F.3d 1326, 76 USPQ2d 1110 (Fed. Cir. 2005).

¹²³*Id.* at 1330–32, 76 USPQ2d at 1114–16.

¹²⁴*Id.* at 1331, 76 USPQ2d at 1115.

¹²⁵435 F.3d 1381, 77 USPQ2d 1788 (Fed. Cir. 2006).

claims. The Federal Circuit affirmed the construction, finding that the broad definitions were entirely consistent with the patentee's own description in the specification. "It is well established that dictionary definitions must give way to the meaning imparted by the specification, but in this case, Mr. Johnston himself gave 'pipe' the broad meaning he now criticizes."¹²⁶ The Federal Circuit also affirmed the resulting obviousness rejection.

In another example, *Pfizer, Inc. v. Teva Pharmaceuticals USA, Inc.*,¹²⁷ the Federal Circuit affirmed the district court's conclusion that the claim term "saccharide" included polysaccharides based (at least in part) on dictionary definitions. Citing *Phillips*, the opinion noted that judges may rely on dictionary definitions when construing claim terms as long as the definition does not contradict any definition found in, or ascertained by, reading the patent documents. In this particular case, the specification did not affirmatively define what "saccharides" were, but instead negatively defined what "saccharides" were not.¹²⁸ The panel found that by using this negative definition technique, "the patentee has left open a vast array of substances that may be considered to be "saccharides" and "excipients." Thus, when acting as their own lexicographers, patent practitioners may be able to use such negative definitions in the specification and still keep the patentee's options open for later relying upon extrinsic evidence, such as a useful dictionary definition, to argue for a broader claim construction.

Finally, in *Free Motion Fitness, Inc. v. Cybex International, Inc.*,¹²⁹ a split panel of the Federal Circuit selected broad dictionary definitions to define the term "adjacent" to mean "not distant" or "near" instead of the district court's adoption of a more narrow construction that "objects may or may not be in contact, but are not adjacent to each other when there is another object between them."¹³⁰ The Federal Circuit's opinion emphasizes that in circumstances where reference to dictionaries is appropriate, courts must scrutinize the intrinsic evidence in order to determine the most appropriate definition.¹³¹ Circuit Judge Prost dissented, stating that, when she "scrutinized" the intrinsic record in that case, she found "nothing that supports a meaning as broad as 'not distant.'"¹³² "The majority's reasoning appears to start with the broadest definition and consult the written description only to see if that definition is narrowed, rather than determining whether the specification discloses anything broader than the narrow definition."¹³³

In conclusion, although courts tend not to apply broad dictionary definitions in the face of intrinsic evidence that suggests that a more narrow definition is proper,¹³⁴ it is otherwise difficult to predict in advance whether and to what

¹²⁶*Id.* at 1384, 77 USPQ2d at 1789 (citation omitted).

¹²⁷429 F.3d 1364, 1374–75, 77 USPQ2d 1257, 1263 (Fed. Cir. 2005).

¹²⁸*Id.* at 1373–74, 77 USPQ2d at 1262–63.

¹²⁹423 F.3d 1343, 76 USPQ2d 1432 (Fed. Cir. 2005).

¹³⁰*Id.* at 1348, 76 USPQ2d at 1436.

¹³¹*Id.*

¹³²*Id.* at 1354, 76 USPQ2d at 1440.

¹³³*Id.* at 1355, 76 USPQ2d at 1441.

¹³⁴This is often, but not always, the case. Sometimes, a narrow dictionary definition can be rejected in favor of a broader definition supported by the drawings and by claim differentiation. In *Primos, Inc. v. Hunter's Specialties, Inc.*, 451 F.3d 841, 79 USPQ2d 1129 (Fed. Cir. 2006), the court rejected a dictionary definition

extent dictionary definitions will be applied to construe patent claims. If predictability is desired, patent practitioners should consider defining material terms or adopting particular dictionary definitions in the specification. (Statements of this nature during prosecution generally would be advisable only to avoid otherwise invalidating prior art, because they may be interpreted as a clear disavowal of claim scope.) Further, where broad claims are desired, a general strategy of buttressing them with more narrow claims continues to remain advisable. Not only can narrow claims serve to support broad construction of other claims via the doctrine of claim differentiation (discussed in Section 8.03.C below), but the more narrow claims can also provide a fallback position for the patent holder if it becomes necessary to avoid either invalidating prior art or disclosure issues under 35 U.S.C. §112 that may arise where claims are construed broadly.

c. Other Sources

In at least one case, the Federal Circuit has looked to documentary evidence of inventor statements outside the formal patent record as part of interpreting a claim. In *ASM America, Inc. v. Genus, Inc.*, the court cited evidence from the inventor's laboratory notebook and teaching slide to support its interpretive conclusion.¹³⁵

E. Putting It All Together in Light of Phillips

The Federal Circuit has repeatedly stated that there is no magic formula for interpreting claims. The ultimate inquiry is to determine the meaning of the claims from the viewpoint of one of ordinary skill in light of the specification and the prosecution history.

What the court has provided in the *Vitronics* line of cases—and reaffirmed in *Phillips*—is a weighting of interpretive sources. As the *Phillips* court stated:

The sequence of steps used by the judge in consulting various sources is not important; what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law. In *Vitronics* we did not attempt to provide a rigid algorithm for claim construction, but simply attempted to explain why, in general, certain types of evidence are more valuable than others."¹³⁶

In particular, current law under *Phillips* provides that the claims must always be read closely with the rest of the specification. The specification is not simply to be referenced after the fact as an interpretive “check.” Rather, the claim and the rest of the specification should be considered together prior to

of “engaging” that would have effectively narrowed the claim to require that two surfaces be interlocked in favor of a definition more consistent with the drawings and the other claim language that only required two surfaces to be in contact. *Id.* at 847.

¹³⁵401 F.3d 1340, 1347, 74 USPQ2d 1211, 1217 (Fed. Cir. 2005).

¹³⁶*Phillips v. AWH Corp.*, 415 F.3d 1303, 1324, 75 USPQ2d 1321, 1335 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006) (citing *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

reaching an interpretative result. The prosecution history should also be considered when in evidence. Extrinsic evidence, including dictionaries, technical treatises, and expert testimony may be used to educate the judge on technical matters, thus facilitating her understanding of the invention. Such extrinsic evidence may also be used to aid directly in the interpretive task, but it may not be used to contradict the specification or prosecution history. Ultimately—absent any clear contrary evidence in the prosecution history—“[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 construction.”¹³⁷

§8.03 Claim Language Issues

A. Functional Versus Structural Language

In the electronic arts, there are often a variety of structures that can readily perform a particular function. Invention sometimes consists of discovering a particularly useful combination of functional building blocks. It may be the particular *relationship* of functions that provide the invention’s value rather than the particular structures present in a given implementation. Apparatus claims ultimately cover structures, not free-standing functions. But because the functions may in essence provide the appropriate structural boundaries, the patent drafter in the electronic area inevitably must learn how to use functional language in claiming inventive structures in order to provide the claims with adequate breadth in view of the invention.

1. Avoiding Unintentional Application of 35 U.S.C. §112(f)¹³⁸

Although functional language can help provide breadth, ultimately a claim for a system or device—electronic or otherwise—must provide structure. If the claim language does not delineate sufficient structure, then there is a risk the court will apply 35 U.S.C. §112(f) (formerly Section 112(6)), which limits claim coverage to the disclosed embodiments and their equivalents. Understanding the limits of when that statutory provision can be inadvertently triggered will help the patent drafter better understand how functional language can effectively be used to claim a broad variety of structures.

A paradigmatic case illustrating the principles for avoiding means-plus-function treatment is *Personalized Media Communications, LLC v. International Trade Commission*.¹³⁹ The invention involved a system for receiving digital con-

¹³⁷*Id.* at 1316, 75 USPQ2d at 1328 (quoting *Renishaw PLC v. Marposs Società per Anzioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

¹³⁸The language of §112(f) is identical to pre-AIA §112, ¶6. Because all of the cases in this section refer to §112, ¶6 rather than 112(f) (many judicial opinions that have issued post-AIA are in fact analyzing pre-AIA patents, and therefore apply pre-AIA §112(6)), we have left reference to §112(6) in this text. But all law discussed is also applicable to the current statutory provision, which is newly labeled as §112(f).

¹³⁹161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998).

trol signals embedded in a broadcast transmission.¹⁴⁰ The claims at issue recited a “digital detector.”¹⁴¹ The specification described the digital detector in functional terms and failed to detail any circuitry comprising a digital detector.¹⁴² The relevant figures in the specification disclosed digital detectors as functional blocks.¹⁴³ The court addressed the issue of whether the term *digital detector* should be afforded means-plus-function treatment under Section 112(6).

The court ruled that Section 112(6) did not apply to the term *digital detector*.¹⁴⁴ It reasoned that in the absence of the word *means*, there was a presumption that Section 112(6) should not be invoked.¹⁴⁵ Furthermore, it held that the presumption was not rebutted, because the term *detector* constituted a sufficient recitation of structure to avoid construction as a purely functional term. The court noted that *detector* was not a generic term like *means*, *element*, or *device*, nor was it “a coined term lacking a clear meaning such as ‘widget.’”¹⁴⁶ Rather, it had a readily understood meaning to those skilled in the electrical arts, signifying structure such as a rectifier or a demodulator. The court concluded that “[e]ven though the term ‘detector’ does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as ‘detectors.’”¹⁴⁷

In *Linear Tech. Corp. v. Impala Linear Corp.*,¹⁴⁸ the court considered whether claim elements reciting the word “circuit” followed by purely function limitations (“a first circuit for . . . [,] a second circuit for . . .” etc.) provided sufficient structure to avoid Section 112(6) treatment. The court noted that one dictionary defined “circuit” as “the combination of a number of electrical devices and conductors that, when interconnected to form a conducting path, fulfill some desired function.”¹⁴⁹ The court held that because “circuit” was used “with a recitation of the respective circuit’s operation in sufficient detail to suggest structure to persons of ordinary skill,” the terms “circuit” and “circuitry” were not subject to means-plus-function treatment under Section 112(6).¹⁵⁰

Use of the terms “circuit” or “circuitry” can avoid application of 35 U.S.C. §112(6) even when introduced by purely functional language that would not otherwise suggest any particular set of structures.¹⁵¹ In *Massachusetts Institute of Technology v. Abacus Software*,¹⁵² the court, citing *Linear Technologies*, held

¹⁴⁰*Id.* at 698, 48 USPQ2d at 1881–82.

¹⁴¹*Id.*

¹⁴²*Id.* at 700 n.4, 48 USPQ2d at 1884.

¹⁴³*Id.*

¹⁴⁴*Id.* at 705, 48 USPQ2d at 1888.

¹⁴⁵*Personalized Media Commc’ns, LLC v. International Trade Comm’n*, 161 F.3d 696, 703, 48 USPQ2d 1880, 1886 (Fed. Cir. 1998).

¹⁴⁶*Id.* at 704, 48 USPQ2d at 1887.

¹⁴⁷*Id.* at 705, 48 USPQ2d at 1888.

¹⁴⁸379 F.3d 1311, 72 USPQ2d 1065 (Fed. Cir. 2004).

¹⁴⁹*Id.* at 1320, 72 USPQ2d at 1070.

¹⁵⁰*Id.*

¹⁵¹Although the term “circuit” by itself connotes some structure, a nonprecedential opinion has held that the presumption that §112(6) applies may not be overcome where “means” appears with “circuit” in a claim (e.g., “control circuit means”). *DESA IP v. EML Tech.*, 211 F. App’x 932, 936 (Fed. Cir. 2007) (nonprecedential).

¹⁵²462 F.3d 1344, 80 USPQ2d 1225 (Fed. Cir. 2006).

that the phrase “aesthetic correction circuitry” connoted sufficient structure to avoid means-plus-function treatment because of the presence of the word “circuitry.”¹⁵³ By contrast, another claim phrase in the same patent recited similarly functional language but used the term “mechanism” instead of “circuitry.” The court found the distinction significant and held that “colorant selection mechanism” did not connote sufficient structure to avoid application of Section 112(6).¹⁵⁴

However, in other contexts, the word “mechanism” has been found to connote sufficient structure. In *Flo Healthcare Solutions, LLC v. Kappos*,¹⁵⁵ the court considered whether the Board of Appeals had correctly treated “height adjustment mechanism” as a means-plus-function element.¹⁵⁶ The court conceded that “the generic term ‘mechanism’ standing alone may connote no more structure than the term ‘means.’”¹⁵⁷ However, the court reversed the Board’s decision and found that the reference to “height adjustment,” together with “mechanism,” “as used in the ’178 patent and in common parlance, reasonably imparts sufficient structure so that the presumption against applying §112, ¶6 in this context is not overcome.”¹⁵⁸

That presumption—against applying means-plus-function treatment without the word “means”—was recently lowered by the Federal Circuit, acting en banc. While a presumption still exists, in *Williamson v. Citrix Online, LLC*,¹⁵⁹ the Federal Circuit held that it is no longer a “strong” presumption.¹⁶⁰ The claim in question recited “a distributed learning control module.”¹⁶¹ Applying the newly lowered presumption, the court held that this phrase invoked application of Section 112(6).¹⁶² The court first reasoned that “module” is supposedly a “well-known nonce word that can operate as a substitute for ‘means,’” and it agreed with the district court that “‘module’ is simply a generic description for software or hardware that performs a specified function.”¹⁶³ It then found that the rest of the claim did not connote sufficient structure to avoid Section 112(6) because the “claim does not describe how the ‘distributed learning control module’

¹⁵³*Id.* at 1355, 80 USPQ2d 1232 (citing *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004)). Note that this holding was controversial. A dissent was filed contending that, in this context, “circuitry” alone in the claim was not sufficient to avoid means-plus-function treatment. Chief Judge Michel notes that, in the relevant cases relied on by the majority, the modifiers accompanying the terms “circuit” or “circuitry” suggested sufficiently definite structure relative to that suggested by the modifiers in the case before the court. *See id.* at 1360, 1362 (Michel, C.J., dissenting) (referencing the use of “interface,” “programming,” and “logic” as modifiers that had more structural meaning to one skilled in the art than terms such as “aesthetic correction”).

¹⁵⁴*Id.* at 1354, 80 USPQ2d at 1230.

¹⁵⁵697 F.3d 1367 (Fed. Cir. 2012).

¹⁵⁶*Id.* at 1373.

¹⁵⁷*Id.* at 1374.

¹⁵⁸*Id.* at 1375.

¹⁵⁹115 USPQ2d 1105 (Fed. Cir. 2015) (en banc).

¹⁶⁰*Id.* at 1111.

¹⁶¹*Id.* at 1108.

¹⁶²*Id.* at 1113.

¹⁶³*Id.* at 1112.

interacts with other components in the distributed learning control server in a way that might inform the structural character of the limitation-in-question.”¹⁶⁴

Reciting in the claim and showing in the description a structural relationship between a functionally claimed component and another structural component can help avoid Section 112(6) treatment. In *Inventio AG v. Thyssenkrupp Elevator Americas Corp.*, the court considered whether the claim phrase “modernizing device” should be treated as a means-plus-function limitation.¹⁶⁵ One would be hard pressed to argue that, under *Personalized Media*, the phrase “modernizing device” “convey[s] to one knowledgeable in the art a variety of structures known as . . .”¹⁶⁶ a “modernizing device.” Nevertheless, in *Inventio*, the court looked beyond the phrase itself and considered its relationship to other elements in the claim and in the specification. The court noted that “claim 1 of the ’465 patent claims a ‘modernizing device’ that is connected to floor terminals and a computing unit.”¹⁶⁷ The court also looked to the written description noting both the illustration of “internal components” of the illustrated “modernizing device” and how its elements “are connected together and to the elevator control and computing unit components of the elevator system.”¹⁶⁸

The *Inventio* court’s reliance on illustration of the “modernizing device’s” internal details in the drawings to support the threshold finding that Section 112(6) applies is difficult to reconcile with the logic of the typical Section 112(6) analysis. In the typical analysis, one first determines whether the claim phrase supports a finding of sufficient structure and, if not, then Section 112(6) applies and the specification fills in the necessary structure. On the other hand, *Inventio*’s reliance on the structural relationship shown *between* the “modernizing device” and other structural components is easier to reconcile with existing case law. In *Linear Tech.*, as noted above, the court looked to “a recitation of the respective circuit’s operation in sufficient detail to suggest structure to persons of ordinary skill.” How a component is connected to other components can provide such detail regarding “operation” to “suggest structure.” Thus if a practitioner is concerned that a particular claim element might cross the line and trigger Section 112(6), the *Inventio* result suggests reciting a structural relationship between the element of concern and another structural element might help avoid Section 112(6).

Sometimes Section 112(6) is not applied despite the presence of the statutory word “means.” If sufficient structure is present in the claim to perform the recited function, then even a claim using the word “means” will not necessarily be analyzed as a means-plus-function claim. In *TecSec, Inc. v. IBM Corp.*, the claim at issue recited a “digital logic means” and the “digital logic means” included a “system memory means for storing data.”¹⁶⁹ For the “system memory means” element, the court found the words “system memory” to be sufficient

¹⁶⁴*Id.* at 1113.

¹⁶⁵649 F.3d 1350, 1355, 99 USPQ2d 1112, 1116 (Fed. Cir. 2011).

¹⁶⁶*See* *Personalized Media Commc’ns, LLC v. International Trade Comm’n*, 161 F.3d 696, 705, 48 USPQ2d 1880, 1888 (Fed. Cir. 1998).

¹⁶⁷*Inventio*, 649 F.3d at 1358, 99 USPQ2d at 1119.

¹⁶⁸*Id.*

¹⁶⁹731 F.3d 1336, 1339, 108 USPQ2d 1429, 1431 (Fed. Cir. 2013).

structure for avoiding the application of Section 112(6) because “[t]o those skilled in the art, a system memory is a specific structure that stores data.”¹⁷⁰ The court distinguished an earlier case in which “system memory means” had been held to implicate means-plus-function analysis. The court distinguished the case on procedural grounds, but also noted that in the earlier case the claim recited a much more specific and detailed function for the “system memory means” than simply “storing data.”¹⁷¹

With respect to the “digital logic means” element, the court noted that the claims “do not recite a function for the digital logic means to perform.”¹⁷² Rather, the “[p]atent simply recites a ‘digital logic means, the digital logic means comprising’ a number of claim elements.”¹⁷³ The court noted that these elements were themselves “structural” or at least not “so devoid of structure as to implicate §112 ¶6.”¹⁷⁴

2. Defining Structure Through Function: Explaining Inventive Concepts

Functional language can help provide broad structural claim scope. The patent drafter should be aware, however, that the court’s willingness to afford functional language adequate scope may depend on the court’s ability to understand inventive principles from reading the specification.

In *Ekchian v. Home Depot, Inc.*,¹⁷⁵ the question was the meaning of the word *conductive*. The claimed invention was a level sensor that comprised a vessel including at least two adjacent wall segments, a dielectric on the interior of at least one wall segment, and “a conductive liquid-like medium” within the vessel.¹⁷⁶ The issue was how conductive the liquid medium had to be within the meaning of the claim. The accused infringer called the court’s attention to a passage in the specification that stated: “Accordingly, the label ‘conductive liquid-like medium’ used herein shall refer to materials of whatever kind whether liquid or not, meeting the foregoing requirements of flowability, conformity, horizontal surface retention and conductivity.”¹⁷⁷ The accused infringer argued that the examples in the specification were the only “foregoing requirements . . . of conductivity” in the patent, and therefore had to be read as limiting the term *conductivity* as used in the claim.

Not surprisingly, the accused device had a much lower conductivity than the conductivity in the specification examples.¹⁷⁸ The district court held that the claim required a liquid with a conductivity similar to that of the liquids disclosed

¹⁷⁰*Id.* at 1347, 108 USPQ2d at 1437.

¹⁷¹*Id.* at 1347–48, 108 USPQ2d at 1438 (*distinguishing* Chicago Bd. of Options Exch. v. International Sec. Exch., 677 F.3d 1361 (Fed. Cir. 2012)).

¹⁷²*Id.* at 1348, 108 USPQ2d at 1438.

¹⁷³*Id.*

¹⁷⁴731 F.3d 1336, 1348, 108 USPQ2d 1429, 1438 (Fed. Cir. 2013).

¹⁷⁵104 F.3d 1299, 41 USPQ2d 1364 (Fed. Cir. 1997).

¹⁷⁶*Id.* at 1301, 41 USPQ2d at 1336.

¹⁷⁷*Id.* at 1302, 41 USPQ2d at 1368.

¹⁷⁸*Id.* at 1364, 41 USPQ2d at 1368.

in the specification examples.¹⁷⁹ Since the liquids disclosed in the specification had a higher conductivity than that of the accused liquid, the district court entered a judgment of noninfringement.

The Federal Court vacated, holding that the term *conductive* meant only that the liquid had conductivity relative to the adjacent dielectric solid that was sufficient enough for the liquid to act as a capacitor (i.e., store charge).¹⁸⁰ Both the specification and the prosecution history explained that the “liquid-like medium” had to act as a capacitor. The court concluded that the term *conductive* in the context of the claimed invention referred to any material that was sufficiently more conductive than the dielectric so that a capacitor was formed.¹⁸¹ Thus, the meaning of *conductive* was defined relative to the function to be performed and the specification made this capacitive function clear.

In *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*,¹⁸² the issue was the meaning of the word *smooth*. The patentee invented a novel process for etching identifying marks on contact lenses without producing a rough surface that could irritate the eye. The new process involved supplying a “smooth surface of unsublimated or unaffected polymer material” that surrounded the etched regions of the lens.¹⁸³ The claim called for the surface surrounding indentation in a contact lens to be “smooth.”¹⁸⁴

The question was how “smooth” a contact lens had to be to fall within the scope of the claim. The accused infringer argued its lens did not infringe because the edges surrounding indentations on the accused lens did not appear smooth when viewed under a scanning electron microscope.¹⁸⁵ However, the court looked at specification statements related to the purpose or goal of the invention. The specification stated that “the edges of the craters neither inflame nor irritate the eyelid of the lens wearer. . . . The markings provided on the lens surface in accordance with this invention . . . are not perceived by the lens wearer.”¹⁸⁶ The court concluded: “We hold that smooth means smooth enough to serve the inventor’s purposes, i.e., not to inflame or irritate the eyelid of the wearer or be perceived by him at all when in place.”¹⁸⁷ Thus, the scope of the structural term “smooth” was defined in view of the function to be served.

Similarly, in *Boston Scientific Scimed, Inc. v. Cordis Corp.*,¹⁸⁸ the court looked at, among other things, the particular problem solved to determine the proper scope of the functional term “non-thrombogenic.” In the context of drug-coated stents for placement in arteries, the issue was whether “non-thrombogenic” (i.e., not promoting blood coagulation) required the accused device to be less thrombogenic than a bare metal stent or whether some lesser level of

¹⁷⁹*Id.* at 1301, 41 USPQ2d at 1366.

¹⁸⁰*Id.* at 1303, 41 USPQ2d at 1368.

¹⁸¹*Ekchian v. Home Depot, Inc.*, 104 F.3d 1299, 1304–05, 41 USPQ2d 1364, 1369 (Fed. Cir. 1997).

¹⁸²796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986), *cert. denied*, 484 U.S. 823 (1987).

¹⁸³*Id.* at 445, 230 USPQ at 417.

¹⁸⁴*Id.*

¹⁸⁵*Id.* at 450, 230 USPQ at 421.

¹⁸⁶*Id.*

¹⁸⁷*Id.*

¹⁸⁸554 F.3d 982, 986, 89 USPQ2d 1704 (Fed. Cir. 2009), *cert. dismissed*, 130 S. Ct. 50 (2009).

thrombogenicity would suffice.¹⁸⁹ Based on the specification, the court noted that the invention aimed to reduce thrombogenicity relative to other coated stents rather than relative to bare metal stents.¹⁹⁰ Therefore “non-thrombogenic” need not be limited to requiring less thrombogenicity than uncoated metal stents.¹⁹¹

In *Broadcom Corp. v. Qualcomm, Inc.*,¹⁹² the court, in like fashion, took into account the technical context as described in the specification when construing the phrase “simultaneously participate.”¹⁹³ Because the patent described several single (rather than dual) transceiver examples, the court held that “simultaneous participation” in multiple networks could include “interleaved” communications even though such communications did not happen at literally the same instant in time.¹⁹⁴

In *Harris Corp. v. Ericsson, Inc.*,¹⁹⁵ the Federal Circuit reiterated that computer-implemented means-plus-function terms are restricted to the *algorithm(s)* disclosed in the specification despite any hardware disclosed. Thus, where a claim required a “time domain processing means,” the Federal Circuit reversed a trial court’s interpretation of the corresponding structure to be a “symbol processor,” because that construction did not incorporate any disclosed algorithm.¹⁹⁶ Because the specification disclosed a two-step algorithm as “the invention,” the accused device that used a one-step algorithm was not an infringing equivalent.¹⁹⁷

In some instances, the functional aspects of an algorithm can be claimed in structural terms. In *Honeywell International, Inc. v. Universal Avionics Systems Corp.*,¹⁹⁸ the claim in dispute recited an apparatus including “a signal processing device, coupled to said input, for ...” and then recited what was essentially a four-step algorithm.¹⁹⁹ The issue of whether the claim should receive means-plus-function treatment was not before the court, so one cannot be confident that such a claim would survive as a non-means claim in another case. However, it illustrates one approach for defining structure in almost purely functional terms.

The Federal Circuit’s analysis in *Paragon Solutions, LLC v. Timex Corp.*²⁰⁰ shows that while functional language can be used to define structures, it cannot make a device claim’s scope vary depending on the device’s use. The claimed “exercise monitoring system” at issue included a display unit “configured for displaying *real-time data* provided by said electronic positioning device and said physiological monitor.”²⁰¹ The district court had interpreted “real time” to

¹⁸⁹*Id.* at 986–87, 89 USPQ2d at 1708.

¹⁹⁰*Id.* at 987, 89 USPQ2d at 1708.

¹⁹¹*Id.*

¹⁹²543 F.3d 683, 88 USPQ2d 1641 (Fed. Cir. 2008).

¹⁹³*Id.* at 691–93, 88 USPQ2d at 1648–49.

¹⁹⁴*Id.* at 693, 88 USPQ2d at 1649.

¹⁹⁵417 F.3d 1241, 1253, 75 USPQ2d 1705, 1713–14 (Fed. Cir. 2005) (citing *WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d 1339, 1348–49, 51 USPQ2d 1385, 1391–92 (Fed. Cir. 1999)).

¹⁹⁶*Id.* at 1248–49, 75 USPQ2d at 1710.

¹⁹⁷*Id.* at 1254, 75 USPQ2d at 1714.

¹⁹⁸488 F.3d 982, 82 USPQ2d 1886 (Fed. Cir. 2007).

¹⁹⁹*Id.* at 989, 82 USPQ3d at 1891.

²⁰⁰566 F.3d 1075, 91 USPQ2d 1082 (Fed. Cir. 2009).

²⁰¹*Id.* at 1086, 91 USPQ2d at 1089 (emphasis added by court).

mean “displaying data substantially immediately without contextually meaningful delay so that the information is displayed in a time frame experienced by people.”²⁰² Although the Federal Circuit accepted that “real time” had to take into account the technological context (and therefore rejected the accused infringer’s proposed interpretation that “real-time” meant “instantaneous”),²⁰³ it rejected the district court’s interpretation because “‘contextually meaningful delay’ . . . injects a use limitation into a claim written in structural terms.”²⁰⁴ The court expressed concern that if such an interpretation were adopted, “then the same apparatus might infringe when used in one activity, but not infringe when used in another.”²⁰⁵ The court noted that, for example, a 30-second delay in providing velocity data might not be “contextually meaningful” in the context of “walking,” climbing, and “snowshoeing,” but might be “highly significant in other contexts—for example, short- and middle-distance running or skiing.”²⁰⁶ Therefore, the Federal Circuit modified the lower court’s interpretation and held that “displaying real-time data” as used in the particular claims at issue meant “displaying data without intentional delay, given the processing limitations of the system and the time required to accurately measure the data.”²⁰⁷

3. *Separate Functions Versus Separate Structures*

Sometimes an accused device uses a single structure to perform two functions, but the asserted claim recites separate structures for those functions. Such was the case in *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*.²⁰⁸ The claim in dispute related to a safety needle and recited four elements: (1) “a needle cannula,” (2) “a guard” that was “movable” from “a first position . . . to a second position,” (3) “a hinged arm,” and (4) “spring means connected to said hinged arm for urging said guard along said needle cannula toward said second position.”²⁰⁹ The patent holder’s infringement theory, on which it prevailed at trial, was that “the spring means and the hinged arm can be the same structure.”²¹⁰ The majority of the Federal Circuit panel disagreed and held that the language of the claim required “two separate structures” for the hinge and “spring means.”²¹¹ Among other things, the court noted that the specification contained “no suggestion that the hinged arm or its hinges can function as springs, because nothing in the specification describes the hinges as moving

²⁰²*Id.* at 1087, 91 USPQ2d at 1090.

²⁰³*Id.* at 1087–88, 91 USPQ2d at 1090.

²⁰⁴*Id.* at 1090, 91 USPQ2d at 1092 (quoting *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468, 15 USPQ2d 1525 (Fed. Cir. 1990) (“[A]pparatus claims cover what a device is not what a device does.”)).

²⁰⁵*Paragon Solutions, LLC v. Timex Corp.*, 566 F.3d 1075, 1090–91, 91 USPQ2d 1082, 1092–93 (Fed. Cir. 2009).

²⁰⁶*Id.*

²⁰⁷*Id.* at 1092–93, 91 USPQ2d at 1094.

²⁰⁸616 F.3d 1249, 95 USPQ2d 1752 (Fed. Cir. 2010).

²⁰⁹*Id.* at 1254, 95 USPQ2d at 1756.

²¹⁰*Id.* at 1255, 95 USPQ2d at 1757.

²¹¹*Id.* at 1255–56, 95 USPQ2d at 1757–58.

the guard or even helping to move the guard.”²¹² The strongly worded dissent pointed out, correctly, that the majority did not even bother to determine whether 35 U.S.C. §112(6) applied to the “spring means” limitation or to conduct a means-plus-function analysis under that section.²¹³ The majority contended that such an analysis was unnecessary because “regardless of whether the asserted claims invoke section 112, Paragraph 6—an added spring element is required by the plain language of the claims.”²¹⁴

Whether or not *Becton* was correctly reasoned, practitioners should think about the possibility that accused devices might use the same structures for different functions. Of course, writing a claim in which two functions are attributed to the same structure is not necessarily the answer because such a claim might place too many functional requirements on a single structure, which can itself be overly limiting. If one might, as a practical matter, use either one or two structural elements to perform two different claimed functions, the practitioner should consider making that clear in the description and, if possible, using alternative claim sets or using claim differentiation to define alternatives in the dependent claims.²¹⁵

B. Linking Terms

Perhaps the most unassuming claim terms are what we shall refer to as *linking terms*. A linking term includes any phrase relating two or more claim elements to each other.²¹⁶ The relationship between claim elements may be functional, temporal, or physical. The manner in which the elements of a claim are linked together may not be critical to patentability. In recognition of this, the Manual for Patent Examining Procedure (MPEP) specifically warns against rejecting claims simply for being a “mere aggregation.”²¹⁷ However, the MPEP also states that “a claim which fails to interrelate essential elements of the invention as defined by the applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention.”²¹⁸ Thus, patent practitioners generally do try to provide some linkage between claim elements.

²¹²*Id.* at 1254–55, 95 USPQ2d at 1757. The majority opinion misleadingly presented earlier cases as supporting a general rule that: “Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” *Id.* at 1254, 95 USPQ2d at 1757 (quoting *Guas v. Conair Corp.*, 363 F.3d 1834, 1288 (Fed. Cir. 2004); citing *Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1404–05 (Fed. Cir. 1999)). However, those earlier cases had not set forth a general rule; instead, they had merely conducted very case-specific claim constructions based on the intrinsic evidence.

²¹³*Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1261, 95 USPQ2d 1752, 1762 (Fed. Cir. 2010) (Gajarsa, J., dissenting).

²¹⁴*Id.* at 1253, 95 USPQ2d at 1756 n.3.

²¹⁵For example: “The safety needle of claim 1 wherein the hinge and the spring means are separate structures.”

²¹⁶A linking term is distinct from what is commonly known as the transitional phrase that follows a claim preamble. See MPEP §2111.03, Transitional Phrases (MPEP 8th ed. Rev. 8, July 2010).

²¹⁷*Id.* at §2173.05(k).

²¹⁸*Id.* at §2172.01.

Patent practitioners sometimes use linking words as if they have no special meaning. In fact, these words may be selected precisely because they have a somewhat imprecise meaning that is believed to be unlikely to limit the scope of the patent claim. However, seemingly minor claim terms become the subject of litigation with surprising frequency. The patent prosecutor should prepare the claims with this possibility in mind.

1. Functional Versus Structural Linking

*Johnson Worldwide Assocs. v. Zebco Corp.*²¹⁹ addressed the issue of whether the linking word *coupled* in the phrase “[a] heading lock coupled to a trolling motor” should be broadly construed to mean functional coupling or should be more narrowly construed to require mechanical or physical coupling.²²⁰ The accused infringer alleged neither that the term *coupled* lacked clarity nor that the term generically required a mechanical or physical connection. Nevertheless, the accused infringer asserted that the context in which the word *coupled* was used in the specification implied *mechanically coupled*. The court adopted the broader functional interpretation. In rejecting the accused infringer’s argument, the court stated that mere inferences drawn from the description of an embodiment cannot serve to limit the words of the claims.²²¹

The question in *Cybor Corp. v. FAS Technologies, Inc.*²²² was whether the linking term *to* imparted a structural limitation or only a functional relationship between claim elements. The claim called for a “first pumping means” to pump a fluid “through said filtering means to said second pumping means.”²²³ The question was whether the word “to” imparted a structural relationship between the first pump and the second pump in which fluid flowed directly from the first to the second pump, or rather merely imparted a functional relationship in which fluid might flow through an intermediate component en route from the first to the second pump.

The accused infringer argued that the transition term *to* required the pumping of fluid directly from a first pump to a second pump without passing through any intervening component.²²⁴ The patentee countered that “to” required only that the fluid move in a pathway with a destination of the second pump, and that the term did not preclude passage of the fluid through intervening components en route.²²⁵

The specification and the prosecution history supported either interpretation of the word *to*. The court referred to a dictionary to assess the meaning of the term and found that the dictionary also supported the broader interpretation.²²⁶ Given the choice between a broader functional interpretation and a narrower

²¹⁹175 F.3d 985, 50 USPQ2d 1607 (Fed. Cir. 1999).

²²⁰*Id.*

²²¹*Id.* at 992, 50 USPQ2d at 1612.

²²²138 F.3d 1448, 46 USPQ2d 1169 (Fed. Cir. 1998).

²²³*Id.* at 1451, 46 USPQ2d at 1171.

²²⁴*Id.* at 1458–59, 46 USPQ2d at 1176–1177.

²²⁵*Id.* at 1459, 46 USPQ2d at 1177.

²²⁶*Id.*

structural interpretation of the word, the court opted for the broader meaning. It reasoned that neither the specification nor the prosecution history precluded such an interpretation, and the extrinsic evidence supported that meaning.

2. *Functionally Qualifying a Linking Term*

Patent drafters sometimes qualify a linking term to try to preserve breadth. For example, in *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*,²²⁷ the disputed claim recited a water filter assembly including a tube and cap that were “operatively connected.”²²⁸ The district court, referencing examples from the specification, had held that the claim required “affixing the tube to the cap by some tenacious means of physical engagement that results in a unitary structure.”²²⁹ The Federal Circuit reversed.

The court first noted that the term “operatively connected” is “a general descriptive term frequently used in patent drafting to reflect a functional relationship between claimed components.”²³⁰ The court noted that the district court had inappropriately concluded from specification examples (showing a unitary cap-tube structure) that forming a unitary structure was indeed the purpose of the claimed cap-tube connection.²³¹ The Federal Circuit, looking to the claim preamble and to the specification as a whole, concluded that the purpose related only to using the assembly with a bottle to filter water.²³² Also, part of the written description referred to the cap being “associated” with the filter, and the court concluded that describing the tube and cap as being “associated merely reflects that the recited elements be joined in some kind of relationship.”²³³

Looking to the claim language itself, the court reasoned that requiring a unitary structure would effectively read the term “operatively” out of the claim, thus violating a general presumption that “claim terms are presumed to have meaning in a claim.”²³⁴ Furthermore, the presence of dependent claims explicitly requiring welded and other more unitary connections suggested, under the principle of claim differentiation, that “operatively connected” in the base claim referenced a less specific relationship.²³⁵

In *Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc.*,²³⁶ the patentee claimed a “lower bone interface *operatively joined* to said bone segment.”²³⁷ The Federal Circuit cited *Innova/Pure* to reiterate that “‘operatively’ . . . is often

²²⁷381 F. 3d 1111, 72 USPQ2d 1001 (Fed. Cir. 2004).

²²⁸*Id.* at 1113–14, 72 USPQ2d at 1003.

²²⁹*Id.* at 1114, 72 USPQ2d at 1003.

²³⁰*Id.* at 1118, 72 USPQ2d at 1006.

²³¹*Id.*

²³²*Id.*

²³³*Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F. 3d 1111, 1121, 72 USPQ2d 1001, 1009 (Fed. Cir. 2004).

²³⁴*Id.* at 1119, 72 USPQ2d at 1007.

²³⁵*Id.* at 1122–23, 72 USPQ2d at 1009–10.

²³⁶424 F.3d 1293, 76 USPQ2d 1662 (Fed. Cir. 2005).

²³⁷*Id.* at 1299, 76 USPQ2d at 1667 (emphasis in original).

used descriptively in patent drafting to mean ‘effectively’ in describing the functional relationship between claimed components.”²³⁸

3. Failing to Functionally Qualify a Temporal Linking Term

When a linking term is not qualified or otherwise modified by functional context, a court might in some instances construe the term narrowly, particularly when such a construction readily aligns with the only disclosed embodiments. *Renishaw PLC v. Marposs Società per Anzioni*²³⁹ addressed the meaning of the temporal linking term *when*.

The claim recited “[a] touch probe . . . generating a trigger signal when said sensing tip contacts an object.”²⁴⁰ The issue was whether (1) the term *when* meant “at or after the time that,” “in the event that,” or “on condition that,” so that the claim would read on a device that did not generate a trigger signal until some appreciable time after contact was made,²⁴¹ or (2) the term meant “as soon as possible after contact,” thus precluding the claim from reading on such a device.²⁴² More specifically, the parties disputed whether this claim covered a touch probe in which there was a short, but built-in and definite, delay between the moment the sensing tip contacted an object and the moment the trigger signal was generated.

Affirming the district court, the Federal Circuit held that the word *when*, read in light of the specification, limited the claim to coverage of “probes which signal within a nonappreciable period of time after contact such that the delay in signaling is insignificant when compared to the sensitivity and accuracy of the probe.”²⁴³ The court reasoned that although the meaning of the term “when” in the claim was imprecise, it was not ambiguous because “the written description provides overwhelming evidence to guide a proper interpretation of the term.”²⁴⁴ The court, however, did not sanction reference to the written description for a definition of each term in a claim. Rather, the court explained “it is manifest that a claim must explicitly recite a term in need of definition before a definition may enter the claim from the written description.”²⁴⁵ Absent a special meaning and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning.²⁴⁶ When a claim term is expressed in general descriptive words, those words ordinarily are not limited by limitations appearing in the specification or in other claims.²⁴⁷ For instance, when an apparatus claim sets forth a general structure without limiting

²³⁸*Id.* at 1306, 76 USPQ2d at 1672.

²³⁹158 F.3d 1243, 48 USPQ2d 1117 (Fed. Cir. 1998).

²⁴⁰*Id.* at 1246, 48 USPQ2d at 1119 (emphasis added by court).

²⁴¹*Id.* at 1250–51, 48 USPQ2d at 1122–23.

²⁴²*Id.* at 1251, 48 USPQ2d at 1123.

²⁴³*Id.* at 1253, 48 USPQ2d at 1124.

²⁴⁴*Id.* at 1251, 48 USPQ2d at 1123.

²⁴⁵*Renishaw PLC v. Marposs Società per Anzioni*, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998).

²⁴⁶*Id.* at 1249, 48 USPQ2d at 1121.

²⁴⁷*Id.*

that structure to a specific subset of structures, the claim will “cover all known types of structure that are supported by the patent disclosure.”²⁴⁸

According to the court, the term *when* was imprecise in the claim because it had several meanings.²⁴⁹ Hence, the court looked to the specification to discern which of those meanings was intended for the claim. It characterized the term *when* as some form of figurative “hook” into the specification because the term was in need of definition.²⁵⁰ The court referred to how the specification described the invention’s place relative to the prior art, statements of advantages in the “Summary of the Invention” portion of the specification, and statements in the “Description of the Preferred Embodiments.”²⁵¹ The court found that the specification made it abundantly clear that *when* in the patent claim meant “at the time of” and not “at some appreciable time thereafter,” because words must be used in the same way in both the claims and the specification.²⁵²

The court noted that the patent specification provided an extremely detailed account of the preferred embodiment, and that the definition of the linking word *when* was limited consistent with the disclosed details.²⁵³ The court also observed that the patentee could have provided in the claim a functional limitation of the word *when* that could have supported the interpretation proposed during litigation in spite of the other details in the specification.²⁵⁴ The court postulated that the patentee might have defined the linking term *when* to “permit signaling at any time after contact but no longer than would permit accurate measurement of the workpiece.”²⁵⁵ Essentially, the court suggested that the patentee should have defined the temporal linking term *when* in terms of the general function to be achieved consistent with the invention rather than in terms of the particulars of the operation of the preferred embodiment.

4. Implied Part of a Whole

*Enzo Biochem, Inc. v. Applera Corp.*²⁵⁶ involved the use of nucleotide probes that allow a scientist to detect, monitor, localize, or isolate nucleic acids when present in extremely small quantities, as is necessary for the sequencing of deoxyribonucleic acid (DNA). At issue was whether the claim covered both direct and indirect detection of a “signaling moiety” that indicates the presence of a nucleic acid of interest in a sample. At a *Markman* hearing, the district court construed the claim phrase “A comprises at least three carbon atoms and represents at least one component of a signaling moiety capable of producing a detectable signal” as “A comprises at least three carbon atoms and is one or more parts of a signaling moiety, which includes, in some instances, the whole

²⁴⁸*Id.* at 1250, 48 USPQ2d at 1122.

²⁴⁹*Id.* at 1251, 48 USPQ2d at 1123.

²⁵⁰*Id.* at 1252, 48 USPQ2d at 1124.

²⁵¹*Renishaw*, 158 F.3d at 1251–52, 48 USPQ2d at 1123–24.

²⁵²*Id.* at 1252, 48 USPQ2d at 1123.

²⁵³*Id.* at 1252–53, 48 USPQ2d at 1122–23.

²⁵⁴*Id.* at 1252, 48 USPQ2d at 1124.

²⁵⁵*Id.*

²⁵⁶780 F. 3d 1149, 114 USPQ2d at 1055 (Fed. Cir. 2015).

signaling moiety.”²⁵⁷ The district court also construed the phrase “signaling moiety” as “a chemical entity capable of producing a detectable signal.”²⁵⁸ Thus, because the claim was construed in such a manner that no additional steps were required to detect the compound “A”, it could be directly detected. In contrast, a claim construction that would limit the claim to indirect detection would require another compound to be added to “A” in order for it to be detectable.

In reversing the district court, the Federal Circuit stated that the phrase “at least one component of a signaling moiety” indicates that the signaling moiety is composed of multiple parts as the term “component” in and of itself indicates a multi-part system.²⁵⁹ Therefore, the district court’s claim construction read out the phrase “component of a signaling moiety,” and impermissibly broadened the claim when it construed the phrase to allow for a single-component system. Thus, the court’s reasoning lends to the principle that the use of the claim term “component” by itself implies that a system includes more than one component.

C. Claim Differentiation

The doctrine of claim differentiation provides that, in general, base and dependent claims will be presumed to have different scope. The doctrine “is ultimately 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.”²⁶⁰ This in turn “normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.”²⁶¹

While claim differentiation is not a hard and fast rule,²⁶² it is well enough established that patent practitioners can enhance later arguments for breadth of a base claim by crafting dependent claims accordingly. As discussed above, in the *Innova/Pure Water* case dependent claims specifying various unitary capture connections helped preserve a broader meaning for the term “operatively connected” in the base claim.²⁶³ Thus, if the practitioner can imagine an overly narrow interpretation later being applied to a term in a base claim, it may be prudent to draft a dependent claim specifically directed to that narrower interpretation, thus creating a claim differentiation argument that the scope of the base claim must be broader than that of the dependent.

²⁵⁷780 F. 3d at 1153, 114 USPQ2d at 1058 (Fed. Cir. 2015).

²⁵⁸*Id.*

²⁵⁹780 F.3d at 1154, 114 USPQ2d at 1059.

²⁶⁰*Karlin Tech., Inc. v. Surgical Dynamics, Inc.* 177 F.3d 968, 972, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999) (citing *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998)).

²⁶¹*Id.* (citing *Transmatic, Inc. v. Gulton Indus., Inc.*, 53 F.3d 1270, 1277, 35 USPQ2d 1035, 1041 (Fed. Cir. 1995)).

²⁶²*See Tandon Corp. v. International Trade Comm’n*, 831 F.2d 1017, 1024, 4 USPQ2d 1283, 1288 (Fed. Cir. 1987) (“Whether or not claims differ from each other, one cannot interpret a claim to be broader than what is contained in the specification and claims as filed.”).

²⁶³381 F. 3d 1111, 72 USPQ2d 1001 (Fed. Cir. 2004).

*Curtiss-Wright Flow Control Corp. v. Velan, Inc.*²⁶⁴ provides a thorough review of the doctrine of claim differentiation, which confirms that the doctrine serves as a guide, not a rule, and that claim drafters can use different terms to describe the exact same subject matter. In that case, the Federal Circuit reversed a claim construction that relied (in part) on the doctrine of claim differentiation for an expansive definition of the term “adjustable” in the context of coking drum technology. The federal district court concluded that the “adjustable” limitation was unlimited by any time, place, manner or means of adjustment—including the defendant’s complete removal and replacement of normally fixed apparatus. The Federal Circuit determined that this was erroneous because the specification did not support such a broad reading. Further, it held that the district court’s reliance on the doctrine of claim differentiation was misplaced to the extent it was applied to two independent claims.

The opinion by Judge Rader emphasized that “the claim differentiation tool works best in the relationship between independent and dependent claims.”²⁶⁵ The doctrine is most appropriately applied as a presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim.²⁶⁶ Outside of the independent/dependent claim context, the doctrine of claim differentiation can apply, but it serves as a less helpful presumption that each claim in a patent has a different scope: Different claims with different words typically define different subject matter, but, “[o]n the other hand, claim drafters can also use different terms to define the exact same subject matter.”²⁶⁷ Thus, the doctrine of claim differentiation has less force when comparing independent claims to each other, and takes on relevance in the context of a claim construction that would render additional or different language in another independent claim “superfluous.”²⁶⁸ In any event, Judge Rader wrote, claim differentiation cannot broaden claims beyond their correct scope.²⁶⁹

In 2006, in *Semitool, Inc. v. Dynamic Micro System Semiconductor Equipment GmbH*,²⁷⁰ the Federal Circuit found that a patent holder defined the terms “process chamber” and “process vessel” coextensively where the specification made no meaningful distinction between the terms. Thus, even the use of different terms may not trigger the doctrine.²⁷¹

In *nCube Corp. v. SeaChange International, Inc.*,²⁷² on the other hand, the doctrine of claim differentiation supported a broad reading of a claim to a high-bandwidth, scalable server for storing, retrieving, and transporting multimedia data to a client in a networked system. One claim element was an “upstream

²⁶⁴438 F.3d 1374, 77 USPQ2d 1988 (Fed. Cir. 2006).

²⁶⁵*Id.* at 1380, 77 USPQ2d at 1993.

²⁶⁶*Id.* (noting support in the Patent Act, 35 U.S.C. § 112, ¶4 (“[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed.”)).

²⁶⁷438 F.3d at 1380, 77 USPQ2d at 1993–94.

²⁶⁸*Id.* at 1381, 77 USPQ2d at 1994.

²⁶⁹*Id.*

²⁷⁰444 F.3d 1337, 1347, 78 USPQ2d 1438, 1446 (Fed. Cir. 2006).

²⁷¹A similar result occurred in *Andersen Corp. v. Fiber Composites*, 474 F.3d 1361, 1370, 81 USPQ2d 1545 (Fed. Cir. 2007), where the applicant had lumped the terms together in the specification and prosecution history.

²⁷²436 F.3d 1317, 77 USPQ2d 1481 (Fed. Cir. 2006).

manager,” which the accused infringer argued required communication of data packets using only logical, not physical, addresses. Although the only embodiment disclosed in the specification used only logical addresses, the Federal Circuit noted that limiting language did not expressly appear in an independent claim but did appear in a dependent claim. It thus rejected the accused infringer’s position.

Similarly, in *Intamin Ltd. v. Magnetar Technologies, Corp.*,²⁷³ the Federal Circuit considered whether an “intermediary” between two magnetic elements could also be magnetic. In holding that it could, the court pointed to a dependent claim that recited “non-magnetic” intermediaries: “This dependent claim shows both that the claim drafter perceived a distinction between magnetic and non-magnetic intermediaries and that independent claim 1 impliedly embraced magnetic intermediaries.”²⁷⁴

These cases further confirm that savvy patent practitioners should attempt to anticipate overly narrow claim constructions by drafting dependent claims specifically directed to such constructions to support an argument that the independent claim requires a broader interpretation than that of the dependent claim. For example, in *Cytologix Corp. v. Ventana Medical Systems*,²⁷⁵ the Federal Circuit considered a patent covering a moving platform microscope slide stainer with heating elements. The defendants argued that each heating station must “hold and heat a number of slides,” and the accused device could hold only one slide. The Federal Circuit found that claim 1 of the patent expressly covered “a heating station adapted to support at least one microscope slide.” Further, dependent claim 2 more specifically recited “a microscope slide stainer as claimed in claim 1 wherein each of the heating stations supports a single microscope slide.”²⁷⁶ The Federal Circuit found that claim 2 would be rendered meaningless if each heating station had to support multiple slides, and an interpretation of one claim that renders another claim meaningless is disfavored.²⁷⁷

Claim differentiation is part of the more general principle that, if possible, claims will not be read to render certain language superfluous. Although claim differentiation can be an important tool in the claim drafter’s arsenal for supporting breadth in an independent claim, the drafter must also be careful not to inadvertently allow the variations in language to narrow important claim limitations. In *Helmsderfer v. Bobrick Washroom Equipment, Inc.*,²⁷⁸ the claim in dispute recited a diaper-changing station including a “platform top surface” that, with the station closed, was “partially hidden from view.”²⁷⁹ The Federal Circuit considered whether this language could cover a station for which the comparable surface was totally hidden from view. The plaintiff argued the language should be interpreted to mean “positioned so that at least some of the top surface

²⁷³483 F.3d 1328, 82 USPQ2d 1545 (Fed. Cir. 2007).

²⁷⁴*Id.* at 1335, 82 USPQ2d at 1549.

²⁷⁵424 F.3d 1168, 76 USPQ2d 1592 (Fed. Cir. 2005).

²⁷⁶*Id.* at 1173, 76 USPQ2d at 1597.

²⁷⁷See also *Intamin Ltd. v. Magnetar Techs.*, 483 F.3d 1328 (Fed. Cir. 2007), in which the Federal Circuit applied claim differentiation to reverse and remand a district court’s judgment that an “intermediary” between adjacent pairs of magnets could not itself be a magnet.

²⁷⁸527 F.3d 1379, 87 USPQ2d 1216 (Fed. Cir. 2008).

²⁷⁹*Id.* at 1381, 87 USPQ2d at 1217.

is blocked from being seen.”²⁸⁰ In holding against the plaintiff, the court noted that the applicant had used the terms “generally” and “at least” in front of other elements of the same claim, but not in front of the language in dispute. The court noted this created a presumption that “partially hidden from view” could not mean “at least partially hidden from view” or “generally hidden from view.”²⁸¹

The presumption against rendering claim language meaningless “is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim and one party is urging that the limitation in the dependent claim should be read into the independent claim.”²⁸² In *Saunders Group, Inc. v. Comfortrac, Inc.*,²⁸³ a defendant tried to argue against application of claim differentiation by pointing to language in the relevant dependent claim that arguably would still have had some effect under the defendant’s proposed construction.²⁸⁴ However, the court noted that the language to which the defendant pointed simply further defined the primary element to which the dependent claim was directed.²⁸⁵ The implication was that reading the dependent claim’s primary element into the independent claim would effectively remove any meaningful difference in scope despite the presence of some additional language in the dependent claim. This may argue for focusing each dependent claim on a single additional element rather than trying to put several elements in the same dependent claim. Although this could effectively require writing a larger number of dependent claims, the benefit may be worth the cost in particular cases.

Yet the application of claim differentiation has limits and cannot necessarily overcome clearly limiting statements in the specification regarding the scope of the invention. In *Netcraft Corp. v. eBay, Inc.*,²⁸⁶ the court considered construction of the phrase “providing a *communications link* through equipment of the third party.”²⁸⁷ The issue was whether the claim language required providing Internet access.²⁸⁸ Despite a dependent claim reciting “Internet access provider” as one of five alternate possible “third parties,”²⁸⁹ the Federal Circuit nevertheless held that “communications link” referenced in the based claim must be an Internet access link, because several statements in the specification referenced “the invention” or “objects of the invention” as relating to providing an Internet billing method.²⁹⁰ Similarly, in *ICU Medical, Inc. v. Alaris Medical System, Inc.*,²⁹¹ the court declined to define the base claim term “spike” broadly enough to include a non-pointed structure despite the presence of a dependent

²⁸⁰*Id.* at 1381, 87 USPQ2d at 1217–18.

²⁸¹*Id.* at 1381–82, 87 USPQ2d at 1217–18.

²⁸²*Acumed LLC v. Stryker Corp.*, 483 F.3d 800 (Fed. Cir. 2007) (quoting *SunRace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003)).

²⁸³492 F.3d 1326 (Fed. Cir. 2007).

²⁸⁴*Id.* at 1329.

²⁸⁵*Id.* at 1330.

²⁸⁶549 F.3d 1394, 89 USPQ2d 1234 (Fed. Cir. 2008).

²⁸⁷*Id.* at 1396 (emphasis added).

²⁸⁸*Id.* at 1397, 89 USPQ2d at 1235.

²⁸⁹*Id.* at 1399–1400, 89 USPQ2d at 1238.

²⁹⁰*Id.* at 1400, 89 USPQ2d at 1238.

²⁹¹558 F.3d 1368, 90 USPQ2d 1072 (Fed. Cir. 2009).

claim specifically requiring that the end of the spike be “pointed.”²⁹² In support of its holding, the Federal Circuit noted that all the examples in the specification included a pointed tip and that “[t]he specification never suggests that the spike can be anything other than pointed.”²⁹³

The en banc decision in *Marine Polymer Technologies, Inc. v Hemcon, Inc.*²⁹⁴ showed a divided Federal Circuit on the question of where to draw the line when giving weight to both the doctrine of claim differentiation and teachings in the specification. The context in which the case reached the full court also raises interesting questions about the relationship between how claim differentiation is applied in patent reexamination versus litigation. The claim construction issue before the court was whether the term “biocompatible” required that the claimed substances exhibited “no detectable biological reactivity as determined by biocompatibility tests,” as the district court had found, or whether “biocompatible” merely required that the substance was “suitable for biomedical applications.”²⁹⁵ As originally issued, the patent had dependent claims that recited biocompatibility levels that permitted nonzero results on applicable biocompatibility tests.²⁹⁶ However, the specification example relating to the specific substance claimed stated that the substance “*of the invention* exhibits *no* detectable biological reactivity.”²⁹⁷ The opinion affirming the district court found this statement, along with other results cited in the specification, to outweigh the significance of the doctrine of claim differentiation in this case.²⁹⁸ The claim construction portion of the opinion represented an equally divided court rather than a majority.

Of greater interest in *Marine Polymer*, although unrelated to claim construction, is the holding, by a majority of the court, that the doctrine of intervening rights does not apply to claims that emerge from reexamination without being amended, even if patentee arguments during claim reexamination have arguably affected claim scope.²⁹⁹ During reexamination, the USPTO initially adopted a broader construction than had the district court, but narrowed it to adopt the district court’s interpretation after the patentee agreed to cancel the dependent claims that clearly did not require zero biological reactivity.³⁰⁰ The original Federal Circuit panel hearing *Marine Polymer* held that intervening rights applied with respect to the unamended claims because their scope had arguably changed during reexamination based on arguments made to the USPTO and based on the canceling of certain dependent claims. However, the en banc Federal Circuit reached the opposite conclusion.

An interesting but as yet unaddressed question is whether application of claim differentiation should apply differently to claims depending on when the

²⁹²*Id.* at 1374.

²⁹³*Id.* at 1375, 90 USPQ2d at 1075.

²⁹⁴672 F.3d 1350, 102 USPQ2d 1161 (Fed. Cir. 2012) (en banc).

²⁹⁵*Id.* at 1358, 102 USPQ2d at 1164.

²⁹⁶*Id.* at 1355, 102 USPQ2d at 1162.

²⁹⁷*Id.* at 1358, 102 USPQ2d at 1162 (emphasis added).

²⁹⁸*Id.* at 1358–59, 102 USPQ2d at 1165.

²⁹⁹672 F.3d 1350, 1365, 102 USPQ2d 1161, 1166 (Fed. Cir. 2012).

³⁰⁰*Id.* at 1356–57, 1365, 102 USPQ2d at 1163–64, 1169–70.

relevant claims are added to the patent. For example, in *Marine Polymer*, the patent in question issued from a long line of continuation applications. However, one might reasonably ask whether the doctrine of claim differentiation should be applied with different force depending on whether the claims were part of the original specification or were added later. The affirming opinion did not make this distinction; however, given general principles emphasizing the importance of the specification, there is logic to giving claim differentiation greater weight when the claims in question were part of the originally filed specification. Had such a principle been applied in *Marine Polymer*, the opinion for the equally divided court could have been rationalized as holding the patentee to statements made in the original specification and not allowing later broadening based on adding differentiated independent claims. This would have resolved the tension between the opinion of the court declining to apply claim differentiation and the strongly worded dissent, which argued for applying claim differentiation in this case to broaden and then invalidate the independent claim.

Also, it is unclear whether claim differentiation should only apply to issued claims or whether originally filed claims that do not become part of the issued patent should affect claim interpretation under the doctrine. To date, the case law has not made such distinctions and has just looked at the claims of the patent as issued. But the facts of *Marine Polymer* raise yet another question: If claims are canceled in reexamination, should the canceled claims still be a basis for applying claim differentiation? In *Marine Polymer*, the Federal Circuit did not have to address the question directly because it was apparently not raised on appeal. Furthermore, at the time the district court issued its decision, the relevant dependent claims had not yet been canceled in the reexamination.³⁰¹ So the district court judgment reviewed by the Federal Circuit had necessarily considered the later-canceled dependent claims as part of the patent for purposes of claim differentiation.

D. After-Developed Technology and Literal Claim Scope

The doctrine of equivalents exists in part to protect the patent holder from failing to claim unforeseeable future variations on specific claim elements where those future variations do not represent a substantial difference from the subject matter covered by a claim's literal scope. Because it does not formally relate to literal claim interpretation, a full discussion of the doctrine of equivalents is beyond the scope of this chapter. However, the patent practitioner should be aware of how claim language can affect the ability to have the literal scope of a claim extend into the future. Moreover, availability of the doctrine of equivalents itself depends in part on whether or not it was foreseeable to choose broader language at the time the claims were drafted.³⁰²

³⁰¹*Id.* at 1357, 102 USPQ2d at 1164.

³⁰²*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722 (2002).

1. Danger of “Conventional” or “Standard” in Qualifying Claim Elements

In *PC Connector Solutions LLC v. Smartdisk Corp.*,³⁰³ the claim at issue was directed to a combination including an adapter that allowed a computer peripheral device to connect to a computer via a disk drive rather than through the port to which the peripheral device was otherwise normally adapted. In particular, one of the claims recited that the peripheral device had “an input/output port normally connectible to a *conventional* computer input/output port.”³⁰⁴ Another claim recited that the peripheral was “*traditionally* connectible to a computer by means of an input/output port of the computer and the *standard* input/output port of the separate computer peripheral.”³⁰⁵

The Federal Circuit held that “these limitations require the peripheral device to be connectible to a computer I/O port that was in common use at the time of filing in 1988.”³⁰⁶ The accused device provided an adapter that allowed flash memories and smart cards to link to a computer via a disk drive. Because such devices clearly could not be connected to the I/O ports of 1988-era computers, the Federal Circuit’s claim interpretation precluded infringement.³⁰⁷ Moreover, the court went on to hold that further argument under the doctrine of equivalents was precluded, in part, because any result extending coverage to devices with ports not known in 1988 would effectively “vitiate” the claim words “*conventional*,” “*standard*,” and “*traditionally connectible*” because those words were “time related.”³⁰⁸

Given that the disputed patent related to adapting peripheral connections to work via a disk drive, and given that the accused device performed precisely that function, the result in *PC Connector* seems quite punishing to the patentee. However, the Federal Circuit is loath to ignore any claim limitation or correct apparent errors on the part of the patent drafter, however unfortunate those errors might be.³⁰⁹ In this case, the court discussed a distinction between a time-related phrase, such as “*conventional*,” and an alternative word, “*dedicated*.” The court explained:

a present-day USB port may be described as a “dedicated” I/O port within the ordinary meaning of “dedicated” as that word would be used to characterize the I/O ports found on a computer built in 1988, yet it would not be considered “conventional” back then, even though it is “conventional” today.

³⁰³406 F.3d 1359, 74 USPQ2d 1698 (Fed. Cir. 2005).

³⁰⁴*Id.* at 1361, 74 USPQ2d at 1699 (emphasis added).

³⁰⁵*Id.* (emphasis added).

³⁰⁶*Id.* at 1364, 74 USPQ2d at 1701.

³⁰⁷*Id.*

³⁰⁸*Id.* at 1364–65, 74 USPQ2d at 1701.

³⁰⁹*See, e.g.,* Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374, 69 USPQ2d 1857, 1860 (Fed. Cir. 2004) (affirming interpretation that claim reciting the step of heating dough “to” +400°F required that the dough actually reach that temperature, rather than the oven, even though skilled artisans might understand that the dough would be burned; claim apparently should have recited heating “at” rather than “to” that temperature, but the Federal Circuit noted that “courts may not redraft claims”).

Thus, the court implicitly suggested the patentee might have used different language and thereby avoided triggering a time-dependent definition of claim scope.

2. Means-Plus-Function Claims and After-Developed Technology

Means-plus-function claim elements cover disclosed structure and “equivalents thereof” corresponding to the function claimed. Some complexity arises in distinguishing the concepts of “equivalents” of Section 112(f), which is used to measure literal infringement, and “equivalents” under the Doctrine of Equivalents (DOE), which is used to measure how the effective scope of the claim can, in some instances, be extended beyond its literal scope.

The Federal Circuit has made time-based distinctions guide the analysis of both types of equivalence so that a patent holder gets at least one fair bite at the “equivalence” apple, but not two.³¹⁰ In particular, if an alternative structure was only developed after the date the patent was issued, that structure is not considered to be available for analysis of the literal scope of a means-plus-function claim.³¹¹ That is to say, it cannot be an “equivalent” structure under Section 112(f). However, such a structure could still be an “equivalent” of a means-plus-function element under DOE. Conversely, a structure that was available prior to patenting can be an “equivalent” under Section 112(f); however, if it is found to be lacking as a Section 112(f) equivalent (e.g., it is not insubstantially different from the disclosed structures), then DOE “equivalence” is also considered to be foreclosed.³¹²

3. Definitions Frozen in Time

Well established in case law, but perhaps not always prominent in the practitioner’s mind, is the rule that a claim term has the meaning it would have had at the time of the patent’s filing. *Massachusetts Institute of Technology v. Abacus Software*³¹³ reemphasized the importance of this principle. The court interpreted the term “scanner” to require “relative movement between the scanning element and the object being scanned.”³¹⁴ The specification gave little guidance on the meaning of the term. The court looked at dictionary definitions dated

³¹⁰See ROBERT L. HARMON ET AL., PATENTS AND THE FEDERAL CIRCUIT 415–416 (10th ed. 2011).

³¹¹*Id.* at 416–417 (citing *Al-Site Corp. v. VSI Int’l, Inc.* 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999)). See also *Bateman v. Por-Ta Target, Inc.*, 155 F. App’x 511, 516–17 (Fed. Cir. 2005) (citing *Ishida Co. v. Taylor*, 221 F.3d 1310, 1317, 55 USPQ2d 1449, 1453 (Fed. Cir. 2000), *aff’d*, 112 F. App’x 55 (2004)); *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1311, 46 USPQ2d 1752, 1758 (Fed. Cir. 1998) (“For means-plus-function limitations, the doctrine of equivalents reduces to whether or not there is an ‘insubstantial difference’ between the limitation’s corresponding structure and any after-invented technology found in the accused device. Where . . . the equivalence issue does not involve later-developed technologies, ‘a finding of non-equivalence . . . precludes a contrary finding under the doctrine of equivalents.’”) (citations omitted).

³¹²*Id.* at 415–16 (citing *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 46 USPQ2d 1752 (Fed. Cir. 1998)).

³¹³462 F.3d 1344, 80 USPQ2d 1225 (Fed. Cir. 2006).

³¹⁴*Id.* at 1351, 80 USPQ2d at 1228.

before and after the filing date and determined that those definitions “require relative movement.”³¹⁵ However, even the most recent dictionary consulted was over a decade old. Although the lack of evidence regarding accused devices available on appeal made it unclear how the patent holder ultimately wanted to apply the term, it was clear that any present-day use of the term “scanner” that did not require relative movement (e.g., some type of virtual approach) would necessarily be outside the scope of the claim given the evidence supporting the meaning of “scanner” at the time the patent was filed.

The meaning of a technical term is more likely to evolve with changing technology than is the meaning of a nontechnical term. However, the practitioner should be aware that the literal meaning of technical terms used in claims will be fixed at the time of filing, and one cannot rely on the future evolution of that meaning to protect the claim’s scope with respect to after-developed technology.

E. The Preamble

Unlike the body of the claim, the preamble is not necessarily considered limiting. However, the test for determining whether a preamble is limiting defies easy explanation. In *American Medical Systems, Inc. v. Biolitec, Inc.*,³¹⁶ the Federal Circuit reviewed the preamble case law as follows:

“Generally,” we have said, “the preamble does not limit the claims.” . . . Nonetheless, the preamble may be construed as limiting “if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” . . . A preamble is not regarded as limiting, however, “when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention.” . . . If the preamble “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 [prior art] rejection), we do not construe it to be a separate limitation.” . . . We have held that the preamble has no separate limiting effect if, for example, “the preamble merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention.”³¹⁷

The case before the court related to a patent for technology used to vaporize tissue, particularly in the context treating an enlarged prostate.³¹⁸ The claims at issue recited in their preambles either a method or a device for “photosensitive vaporization of tissue.”³¹⁹ The district court had held that this language was limiting and meant “using a wavelength that is highly absorptive in the tissue,

³¹⁵*Id.*

³¹⁶618 F.3d 1354, 96 USPQ2d 1652 (Fed. Cir. 2010).

³¹⁷*Id.* at 1358–59, 96 USPQ2d at 1655 (citations omitted) (citing *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002); *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 809 (Fed. Cir. 2002) (quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)); *Symantec Corp. v. Computer Assocs. Int’l, Inc.*, 522 F.3d 1279, 1288–89 (Fed. Cir. 2008); and *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1434–35 (Fed. Cir. 2000)).

³¹⁸*Id.* at 1356, 96 USPQ2d at 1654.

³¹⁹*Id.*

while being absorbed only to a negligible degree by water or other irrigant.”³²⁰ The Federal Circuit reversed, pointing to three factors: First, the prosecution history’s lack of a suggestion “that the inventors added the phrase ‘photoselective vaporization’ in order to distinguish their invention from the prior art.”³²¹ Second, the language of the claims themselves did not appear to rely on the phrase to define the invention. Specifically, the phrase “does not provide a necessary antecedent basis for the term ‘the tissue’ in the bodies of each of the independent claims and the preamble itself ‘does not specify a particular type or location of the tissue being treated.’”³²² “Third, and most importantly, the descriptor ‘photoselective’ does not embody an essential component of the invention. Instead, the term ‘photoselective vaporization’ is simply a descriptive name for the invention that is set forth in the bodies of the claims.”³²³

The majority also looked to other factors including claim differentiation as well as a close reading of the specification as a whole to assess whether the phrase should be limiting.³²⁴ Based on the context of the various embodiments in the specification and that provided by the dependent claims reciting specific wavelength ranges, the majority concluded that the phrase “photoselective vaporization” is not used “to confine the invention to the use of particular wavelengths but is better understood as a description of the overall process described and claimed in the ’764 patent.”³²⁵

In dissent, Judge Dyk argued for a change in the law to make all preambles limiting.³²⁶ Even without such a rule, the dissent contended that the preamble phrase “photoselective vaporization” should be limiting because the term was added in a continuation-in-part-application and therefore was part of “new matter” that the applicant must have therefore considered significant.³²⁷

At a minimum, patent drafters should realize that even if the preamble does not on its face appear to be necessary to defining the invention set forth in the claim body, a court might treat the preamble language as limiting if review of the rest of the specification and/or the prosecution history provides a basis for limiting preamble language. For example, in *Akamai Technologies, Inc. v. Limelight Networks, Inc.*, the claim at issue recited in the preamble “a given object of a participating content provider is associated with an alphanumeric string.”³²⁸ The court held that the “alphanumeric string” had to include the object’s URL based on repeated “according to the present invention” statements in the detailed description that referenced using the URL as part of a string to

³²⁰*Id.* at 1357, 96 USPQ2d at 1660.

³²¹*American Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1359, 96 USPQ2d 1652, 1656 (Fed. Cir. 2010).

³²²*Id.*

³²³*Id.* (citing *Storage Tech v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003) (“preamble term ‘policy caching method’ did not limit claims because it served only as a ‘convenient label for the invention as a whole.’”)).

³²⁴*Id.* at 1360–61, 96 USPQ2d at 1657.

³²⁵*Id.* at 1361, 96 USPQ2d at 1657–58.

³²⁶*American Med. Sys.*, 618 F.3d at 1364, 96 USPQ2d at 1659–60 (Dyk, J., dissenting).

³²⁷*See id.* at 1364–65 (“The applicant took considerable care to add new matter to the specification describing and defining photoselective vaporization.”) (Dyk, J., dissenting).

³²⁸629 F.3d 1311, 1325, 97 USPQ2d 1321, 1329–30 (Fed. Cir. 2010).

associate the string with the object.³²⁹ The court noted that references to strings including the URL to provide the association with the object “were not merely discussed as a preferred embodiment. Instead, the written description specifically refers to strings including the object’s original URL as ‘the invention.’”³³⁰

Thus, even the preamble can provide a textual “hook” (of the sort described in *Renishaw*³³¹) for limiting the claim based on statements in the specification. Drafters should therefore realize that the preamble might be read as limiting based on the claims or other intrinsic evidence and only include truly necessary language in the preamble.

However, this does not mean that claim drafters should blindly follow a rule of writing short preambles. In fact, if language is necessary to set the context for the claimed invention, it should generally be put in the preamble rather than in the body of the claim. If language must be in the claim, putting it in the preamble at least preserves an argument that it is not limiting. Also, language in the preamble, even if limiting, does not necessarily require additional action by an accused infringer to establish infringement. In *Advanced Software Design Corp. v. Fiserv, Inc.*,³³² the court considered whether language in a preamble referencing certain steps required that the accused infringer perform those steps. The claims in dispute related to methods and systems for validating financial instruments. The preamble of the independent method claim recited that “selected information found on the financial instrument . . . is encrypted in combination with key information not found on the financial instrument to generate a control code which is printed on the financial instrument along with the selected information” and the claim body required that the “selected information” be read and either decrypted or re-encrypted as part of the claimed validation process.³³³ The question was not whether the preamble was limiting (both sides agreed that it was) but “whether the [preamble] steps must be performed by the accused infringer.”³³⁴ The court held that the method claim preamble steps in question “define the environment in which an accused infringer must act”³³⁵ but not what that accused infringer itself must do: “Representative claim 1 recites a ‘process for validating a negotiable financial instrument’ comprising reading information from the check and decrypting or re-encrypting to validate the check. Fiserv therefore could ‘use’ the method of claim 1 by validating checks even though it does not encrypt and print them.”³³⁶ The court adopted similar reasoning for the system claims in dispute.

Although Fiserv argued that by reciting steps to be performed on the financial instrument rather than simply describing that instrument the preamble language triggered added requirements for an infringing party to meet, the court

³²⁹*Id.* at 1326–27, 97 USPQ 2d at 1332–33.

³³⁰*Id.* at 1326, 97 USPQ 2d at 1332.

³³¹*Renishaw PLC v. Marposs Societ  per Anzioni*, 158 F.3d 1243, 1252, 48 USPQ2d 1117, 1124 (Fed. Cir. 1998) (see the discussion at §8.03.B.3 above).

³³²641 F.3d 1368, 98 USPQ2d 1968 (Fed. Cir. 2011).

³³³*Id.* at 1373, 98 USPQ2d at 1972.

³³⁴*Id.*

³³⁵*Id.* at 1374, 98 USPQ2d at 1973.

³³⁶*Id.*

did not agree. The court stated: “There is no reason why a preamble cannot describe a financial instrument in terms of the steps required to create it the ’110 patent recites a process or system for validating checks, not for encrypting and printing them.”³³⁷

The facts in *Fiserv* raise an issue that has come up repeatedly in recent cases involving Internet-based systems: that of divided infringement. For example, in the *Akamai* case, referenced above, one question before the court was whether a claim’s recitation of a step performed by the accused infringer’s customers precluded infringement given that this meant some, but not all the steps were in fact performed by the accused infringer itself.³³⁸ In *Akamai*, the court slightly modified the earlier standard under which a single party can still be found liable for infringement in such situations. Specifically, the court stated that while the established “control or direction” test provided a “foundational basis on which to determine liability for direct infringement of method claims by joint parties, it left several questions unanswered.”³³⁹ The court tightened the standard and required that liability for direct infringement in such situations could only attach if the accused infringer has an “agency” relationship with any other parties participating in carrying out the infringement.³⁴⁰

Although the Federal Circuit granted rehearing en banc on this question,³⁴¹ the en banc court ultimately declined to address whether a new “agency” test replaced the existing “control or direction” test.³⁴² Rather, the en banc court acknowledged both tests³⁴³ but then held that neither was required when an entity *induces* multiple entities to perform actions that collectively amount to infringement.³⁴⁴ But the Supreme Court overruled the Federal Circuit and held that even in the context of inducement direct infringement must be established.³⁴⁵ The Court made clear that this result necessarily followed from the Federal Circuit’s holding in *Muniauction, Inc. v. Thomson Corp.* that a method claim is only infringed if performance of all the steps is attributable to one defendant.³⁴⁶ The Court specifically declined to address the correctness of the *Muniauction* rule, but left open the possibility that the Federal Circuit could revisit that issue on remand.³⁴⁷

On remand, the Federal Circuit partially accepted the Supreme Court’s invitation. Although the Federal Circuit stopped short of overturning the *Muniauction* rule, it did revisit the standard for determining when performance of different steps of the same method claim by different entities is “attributable”

³³⁷*Id.* at 1375, 98 USPQ2d at 1974.

³³⁸*See Akamai Techs., Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311, 1317, 97 USPQ2d 1321, 1324 (Fed. Cir. 2010) (“It is undisputed that Limelight does not itself perform every step of the asserted claims.”).

³³⁹*Id.* at 1319, 97 USPQ2d at 1326.

³⁴⁰*Id.*

³⁴¹*McKesson Techs., Inc. v. Epic Sys. Corp.*, 2011 WL 2173401 (Fed. Cir. May 26, 2011).

³⁴²*Akamai Techs., Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301, 1307 (Fed. Cir. 2012) (en banc).

³⁴³*Id.*

³⁴⁴*Id.* at 1318.

³⁴⁵*Limelight Networks, Inc. v. Akamai Techs., Inc.*, 134 S. Ct. 2111, 2115, 110 USPQ2d 1681 (2014).

³⁴⁶134 S. Ct. at 2117 (citing *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1329–30 (Fed. Cir. 2008)).

³⁴⁷*Id.* at 2120.

to a single entity. Specifically, the Federal Circuit, acting en banc and unanimously, held that an entity is “responsible for others’ performance of method steps in two sets of circumstances: (1) where that entity directs or controls others’ performance, and (2) where the actors form a joint enterprise.”³⁴⁸ Thus, facts meeting either test (but not necessarily both) can trigger an entity’s liability for direct infringement. On the facts before it, the court held that substantial evidence supported a finding that Limelight’s actions met the “directs or controls” standard because Limelight made its service available only if its customers carried out claimed steps of the method.³⁴⁹ Although not relying on the “joint enterprise” test on the facts before it, the court stated, drawing on general tort principles, that such an enterprise would exist for purposes of attributing infringement to each entity of the enterprise if the members of the enterprise had (1) “an agreement, express or implied,” (2) “a common purpose,” (3) “a community of pecuniary interest in that purpose,” and (4) “an equal right to a voice in the direction of the enterprise.”³⁵⁰ How this “joint enterprise” test will be applied to particular infringement contexts remains to be seen.

Absent the Federal Circuit or the Supreme Court reversing *Muniauction*, the Supreme Court’s *Akamai* holding serves to underscore the importance of drafting claims that minimize the risk of divided infringement. The *Fiserv* holding suggests that one way to avoid the divided infringement problem is to put any reference to method steps performed or system elements used by additional entities (other than the likely targeted infringers) in the preamble. If such limitations are necessary to adequately defining the invention, they can accomplish that task from the preamble, where they might be limiting without necessarily triggering divided infringement issues.³⁵¹ Moreover, the divided infringement problem highlights the importance of claiming a system controlled by a single entity, not just method steps for using that system.

F. Other Claim Issues

1. Defining by Claiming

In *PODS, Inc. v. Porta Stor, Inc.*,³⁵² a case that defies both easy categorization and easy explanation, the Federal Circuit used the limitations of one independent claim directed in part to a “carrier frame” to limit use of that term in a separate independent claim that included none of the other claim’s relevant limitations. Claim 1 of the disputed patent recited an apparatus that comprised, among other things, “a carrier frame including right and left longitudinal ele-

³⁴⁸*Akamai Techs., Inc. v. Limelight Networks, Inc.*, No. 2009-1372, 2015 U.S. App. LEXIS 14175, at *4 (Fed. Cir. Aug. 13, 2015) (en banc) (per curiam).

³⁴⁹*Id.* at *11–12.

³⁵⁰*Id.* at *6.

³⁵¹*See* *Advanced Software Design Corp. v. Fiserv, Inc.*, 641 F.3d 1368, 1375, 98 USPQ2d 1968, 1974 (Fed. Cir. 2011) (agreeing with “Advanced Software’s theory that the preamble steps limit only the claimed environment, not the claimed method or system”).

³⁵²484 F.3d 1359, 82 USPQ2d 1553 (Fed. Cir. 2007).

ments juxtaposed with left and right sides . . . [extensive additional limitations omitted].”³⁵³ The sum total of the many limitations recited for the “carrier frame” effectively required that the carrier frame be rectangular. Claim 29 recited a method for lifting a container on and off a vehicle, including, among other things, “positioning a carrier frame around the container. . . .”³⁵⁴ Claim 29 did not recite any of the claim 1 limitations requiring that the carrier frame be rectangular.

Citing—but apparently misapplying—the well-established principle that the same terms should generally be construed consistently throughout the claims, the court held that the “carrier frame” of claim 29 must be rectangular.³⁵⁵ The court appears to have confused the act of claiming a particular carrier frame with the act of defining what a carrier frame is in the patent.

That the court’s reasoning in this case is untenable can be seen by considering a hypothetical patent including a first independent claim to “a signal driver comprising a circuit, the circuit including A, B, and C” and a second independent claim to “a method of driving a signal including doing D, E, and F to a circuit.” Under the court’s reasoning in *PODS*, the second independent claim would require that its “circuit” include A, B, and C, despite the absence of A, B, and C from that claim—a result that most patent professionals would likely agree is not reasonable.

Whether the reasoning in *PODS* is an aberration or reflects a shift in claim construction law remains to be seen. With the benefit of hindsight, one patent-drafting solution might be to add an identifying label in front of claim terms that are the subject of extensive limitations, provided that the label is (1) clearly not more limiting than are the relevant extensive limitations, and (2) only present in those claims in which the relevant term is in fact subject to such limitations. For example, had claim 1 in *PODS* read “a rectangular carrier frame including . . .,” one suspects it might have been more difficult for the court to read the “rectangular” limitation into the recitation of “carrier frame” in claim 29 absent the presence in claim 29 itself of more limiting language. On the other hand, such a practice inadvertently could lead to unnecessarily narrowing some claims in an attempt to preserve the breadth of others merely because of a single—and quite possibly aberrant—judicial result.

2. Open-Ended Versus Limited

In another case that defies easy explanation, *Dippin’ Dots, Inc. v. Mosey*,³⁵⁶ the Federal Circuit held that, in a method “comprising” several steps for producing a novelty ice cream product, a particular step reciting “freezing said dripping alimentary composition into beads”³⁵⁷ required that the method step produce “beads and only beads.”³⁵⁸ In justifying this result, the court stated:

³⁵³*Id.* at 1362, 82 USPQ2d at 1554.

³⁵⁴*Id.* at 1363, 82 USPQ2d at 1555 (emphasis added by court).

³⁵⁵*Id.* at 1367, 82 USPQ2d at 1558.

³⁵⁶476 F.3d 1337, 81 USPQ2d 1633 (Fed. Cir. 2007).

³⁵⁷*Id.* at 1340, 81 USPQ2d at 1635 (emphasis added).

³⁵⁸*Id.* at 1343, 81 USPQ2d at 1637.

“The presumption raised by the term ‘comprising’ does not reach into each of the six steps to render every word and phrase therein open-ended—especially where, as here, the patentee has narrowly defined the term it now seeks to have broadened.”³⁵⁹

The only evidence noted by the court of the patentee having narrowly defined the relevant claim language was a passage in the specification describing the “beads” as having “a smooth, round spherical appearance.”³⁶⁰ However, the court’s reasoning did not seem to recognize that this specification language only went to the definition of what a “bead” is, not what it means to freeze and drip something “into beads.” In this case, the district court had interpreted the method step to exclude even an accused method that produced some “beads” in a corresponding method step if that step also produced “any ‘irregular or odd shaped particles,’” and the Federal Circuit’s holding affirmed this result.³⁶¹

The *Dippin’ Dots* opinion seems to lack any sufficiently detailed explanation for going against the Federal Circuit’s own well-established principle that merely adding to an infringement does not avoid infringement. This long-held principle was recently reiterated with particular force in *Conoco, Inc. v. Energy & Environmental International, LC*.³⁶² In *Conoco*, the Federal Circuit held that even the normally restrictive phrase “consisting of” did not allow an accused infringer to avoid infringement by merely pointing to impurities in a component of an accused method.³⁶³ The court pointed to earlier precedent in which it had held that “a competitor could not avoid infringement by adding a component *unrelated to the invention*.”³⁶⁴

The *Conoco* panel’s analysis of whether an added component is “unrelated to the invention” might have served the *Dippin’ Dots* panel’s analysis well. For example, it might have been reasonable for the *Dippin’ Dots* panel to reason that an accused method step that produces a high percentage of irregularly shaped ice cream elements is adding a component that is clearly *not* “unrelated to the invention.” In other words, one might reason that the claimed invention related to producing novelty ice cream elements, and the accused method step also relates to producing such elements, but because the accused step primarily produces elements of a different shape (i.e., irregularly shaped elements rather than “bead” elements), then the method does not infringe. However, this was not the reasoning of the *Dippin’ Dots* opinion, which held that the presence of “any” non-bead-like elements could be enough to preclude coverage under the claimed method.³⁶⁵ One is hard pressed to understand, on the face of the *Dippin’ Dots* opinion, how it is any different from a holding that the presence of impurities in the results of an otherwise infringing process can avoid infringement.

³⁵⁹*Id.*

³⁶⁰*Id.*

³⁶¹*Id.* (emphasis added).

³⁶²460 F.3d 1349, 79 USPQ2d 1801 (Fed. Cir. 2006).

³⁶³*Id.* at 1360–61, 79 USPQ2d at 1806.

³⁶⁴*Id.* at 1360, 79 USPQ2d at 1809 (citing *Norian Corp. v. Stryker Corp.*, 363 F.3d 1321 (Fed. Cir. 2004)) (emphasis added).

³⁶⁵476 F.3d 1337, 1343, 81 USPQ2d at 1633, 1637 (Fed. Cir. 2007).

But of course, such a holding would directly contradict the result and the more detailed reasoning of *Conoco*.

Perhaps a more interesting (and certainly a more computer-related) illustration than *Dippin' Dots* of the issue of how far “comprising” reaches into individual step of a method claim is found in *Board of Regents of the University of Texas System v. BENQ America Corp.*³⁶⁶ Here the court considered a method related to computer keyboards. One of the steps in the claim at issue recited matching a binary code derived from a set of keyboard signals “with one or more pre-programmed codes, *each pre-programmed code being representative of a syllabic element.*”³⁶⁷ The patent holder asserted the claim covered systems that “intermittently infringe” if, for example, they match against words rather than syllables but some of those words were a single syllable long.³⁶⁸ However, the district court held that infringement did not occur unless an accused device “relies upon a vocabulary of only syllabic elements, even if certain entries in those vocabularies happen to be one syllable long.”³⁶⁹ Ultimately the Federal Circuit agreed and held that “the claim phrase ‘each pre-programmed code being representative of a syllabic element’ means that the vocabulary only includes syllabic elements.”³⁷⁰

In reaching its conclusion, the *BENQ* court cited *Dippin' Dots* for the proposition that while “generally, the use of the transitional phrase ‘comprising’ does not exclude additional, unrecited steps,” such a presumption “does not reach into each of the [claimed] steps to render every word and phrase therein open-ended.”³⁷¹ However, the ruling in *BENQ* appeared to rest not on some general rule, but rather on the fact that during prosecution the patent holder had distinguished a prior art reference with a database of “complete words” rather than “syllabic elements.”³⁷²

The resulting principle is perhaps best stated as follows: Although “comprising” is generally an open-ended term, individual claim elements can effectively be read as closed-ended if the intrinsic evidence (such as the prosecution history) clearly indicates a narrower meaning.

As discussed above, in *Enzo Biochem, Inc. v. Applera Corp.*,³⁷³ the patentee argued that the inclusion of the claim term “at least one of” allowed for both indirect and direct embodiments for detecting a “signaling moiety” that indicates the presence of a nucleic acid of interest in a sample. In particular, the patentee cited *Howmedica Osteonics Corp. v. Wright Medical Technology, Inc.*³⁷⁴ to indicate that patentees use open-ended language, such as “at least one,” to encompass multiple embodiments. *Howmedica* involved a patent for a

³⁶⁶533 F.3d 1362, 87 USPQ2d 1437 (Fed. Cir. 2008).

³⁶⁷*Id.* at 1365, 87 USPQ2d at 1439 (emphasis added by court).

³⁶⁸*Id.* at 1366, 87 USPQ2d at 1440.

³⁶⁹*Id.*

³⁷⁰*Board of Regents of Univ. of Tex. Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1372, 87 USPQ2d 1437, 1445 (Fed. Cir. 2008).

³⁷¹*Id.*

³⁷²*Id.*

³⁷³780 F. 3d 1149, 114 USPQ2d at 1055 (Fed. Cir. 2015).

³⁷⁴540 F.3d 1337 (Fed. Cir. 2008).

prosthetic knee with a tibular and femoral component.³⁷⁵ At issue was the correct construction of the claim phrase “the femoral component including at least one condylar element” conforming to the geometric limitations specified in the claim.³⁷⁶ There was no dispute as to whether the claim could cover a unicondylar prosthesis, but at issue was whether both condyles of a bicondylar prosthesis had to conform to the geometric limitations specified in the claim.³⁷⁷ In *Howmedica*, the court held that the phrase “at least one” in the claim language meant “one or more” condylar elements were required, but that the claim did not require both condylar elements of a bicondylar prosthesis to conform to the geometric limitations specified in the claim because the claim stated that “the condylar element” must have the specified geometry, instead of, for example, “both” or “each” condylar element.³⁷⁸

However, the court in *Enzo* found *Howmedica* to be inapposite. The court stated that *Howmedica* was not concerned with whether the femoral component could be comprised solely of a condylar element, but whether the femoral component could include one or more condylar elements, and whether each must conform to the specified geometry.³⁷⁹ Rather, at issue in *Enzo* was whether the “A” could comprise the entirety of “a signaling moiety,” despite claim language indicating that “A” is a “component of a signaling moiety.”³⁸⁰ The court held that the plain reading of the claim term, in light of the specification, required that the signaling moiety be a multi-part entity composed of “components,” of which at least one was “A.”³⁸¹ Thus, the generally open-ended claim term “at least one of” will not necessarily avoid a limiting claim construction.

§8.04 Specification Issues

As discussed above in Section 8.02.D.1, the importance of the specification the court had earlier articulated in *Vitronics* is clearly established in light of *Phillips*. However, understanding the various ways in which the specification can influence claim interpretation requires some elaboration.

A. Patentee as “Lexicographer”

The specification can allow the patentee to be his own “lexicographer,” imparting a special meaning to a term that deviates from that term’s ordinary

³⁷⁵*Id.* at 1340.

³⁷⁶*Id.* at 1344.

³⁷⁷*Id.*

³⁷⁸*Id.*

³⁷⁹780 F.3d at 1155, 114 USPQ2d at 1060.

³⁸⁰*Id.*

³⁸¹*Id.*

meaning. The court has stated that the specification acts as a dictionary when it expressly defines terms or when it defines them by implication.³⁸²

1. Definition by Implication

The *Vitronics* case itself provides a useful example of definition by implication. The claim in dispute called for heating a circuit board and solder to “a solder reflow temperature,” but maintaining the temperature of the board’s devices “below the solder reflow temperature.”³⁸³ The question was whether *solder reflow temperature* meant the *liquidus temperature* at which the solder first begins to melt or a higher temperature associated with a *peak reflow temperature*, which is somewhat below the temperature at which the circuit board would begin to degrade.³⁸⁴ The specification failed to expressly give the claim term *solder reflow temperature* a special meaning. Nevertheless, the court was compelled to find a meaning for the term. Arguably, the term *solder reflow temperature* was understood in the art to mean one *liquidus temperature*.³⁸⁵ However, an example in the specification used the term *peak reflow temperature* to describe the feature referred to as the *solder reflow temperature* in the claim. The court reasoned that in order to be consistent with the specification, the claim must be construed so that *solder reflow temperature* means *peak reflow temperature*.³⁸⁶

2. Definition by Varied Usage

In *Enercon GmbH v. International Trade Commission*,³⁸⁷ the patent in dispute claimed a method for converting wind-generated electricity into AC (alternating current) power. The patent addressed the problem of maintaining an in-phase relationship (i.e., matching peaks and valleys) between the AC power wave generated from the wind turbines and the AC power wave on the utility grid. The claimed steps included “forming a reference waveform; [and] *rotating* the reference waveform by a selected power factor angle to yield a template waveform.”³⁸⁸

The issue was whether the term *rotating* covered only the specific “rotational transformation” procedure of the disclosed preferred embodiment, or whether the term merely covered “the generic process of phase shifting a waveform.”³⁸⁹ The court held that the term *rotate* was not limited to the

³⁸²*Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576–77 (Fed. Cir. 1996).

³⁸³*Id.* at 1579, 39 USPQ2d at 1574.

³⁸⁴*Id.* at 1578–80, 39 USPQ2d at 1573–75.

³⁸⁵*Id.* at 1581, 39 USPQ2d at 1575.

³⁸⁶*Id.* at 1583–84, 39 USPQ2d at 1577–78.

³⁸⁷151 F.3d 1376, 47 USPQ2d 1725 (Fed. Cir. 1998).

³⁸⁸*Id.* at 1379, 47 USPQ2d at 1727 (emphasis added).

³⁸⁹*Id.* at 1384, 47 USPQ2d at 1731.

“rotational transformation” procedure of the preferred embodiment but rather meant “merely a phase shift in the desired waveform.”³⁹⁰

In according the term *rotate* the broader of two possible meanings, the court noted that “[o]nly in the preferred embodiment is the more specific ‘rotational transformation’ procedure described as a method to rotate the waveform.”³⁹¹ The court further noted and gave particular emphasis to the fact that “[t]he remainder of the specification uses the words ‘rotate’ and ‘shift’ interchangeably.”³⁹²

Thus *Enercon* illustrates how using claim terms in a varied manner throughout the specification can help promote a broader interpretation.

However, using claim terms in a varied way may not always provide support for a broader claim construction. In *Trustees of Columbia University v. Symantec Corp.*,³⁹³ the patents in dispute involved applying data analytics techniques to computer security to detect and block malware. The patents addressed the problems of detecting malicious e-mail attachments, detecting intrusions into the operation of a computer system, and detecting anomalous program executions.³⁹⁴ The claimed steps included extracting a “byte sequence feature” from an executable attachment in an e-mail by “creating a byte string representative of resources referenced” by the executable attachment.³⁹⁵ The claimed steps also included generating a “probabilistic model of normal computer system usage” based on features from “records and normal processes” that access an operating system registry to detect deviations from normal computer system usage and to determine whether an access to an operating system registry is an anomaly.³⁹⁶ At issue was whether the term *byte sequence feature* covered only the “machine code instructions” that instruct a computer’s processor to perform certain actions, or whether the term, in accordance with a single sentence of the specification, more broadly covered “resource information” which contains executable data, but that does not provide specific instructions.³⁹⁷ Also at issue was whether the *probabilistic model of normal computer system usage* must be built using only attack-free data, or whether attack data could also be used to build the model, in accordance with an academic paper referenced in the specification and written by one of the inventors.³⁹⁸ The court held that the term *byte sequence feature* was limited to the “machine code instructions,” and that the *probabilistic model of normal computer system usage* must be built using only attack-free data. In according both terms the narrower of two possible meanings, the court noted that a single contradictory statement or “fleeting references” in the specification could not overcome the “overwhelming evidence” in other parts of the specification and the prosecution history demonstrating an intended definition

³⁹⁰*Id.* at 1385, 47 USPQ2d at 1732.

³⁹¹*Id.* at 1384, 47 USPQ2d at 1731.

³⁹²*Id.* See also *id.* at 1385, 47 USPQ2d at 1732 (“As we have stated above, the specification clearly uses the terms ‘rotate’ and ‘shift’ interchangeably.”).

³⁹³811 F.3d 1359, 117 USPQ2d 1659 (Fed. Cir. 2016).

³⁹⁴*Id.* at 1362, 117 USPQ2d at 1661.

³⁹⁵*Id.* at 1365, 117 USPQ2d at 1664.

³⁹⁶*Id.* at 1367, 117 USPQ2d at 1666.

³⁹⁷*Id.* at 1364–65, 117 USPQ2d at 1664.

³⁹⁸*Id.* at 1367–68, 117 USPQ2d at 1666.

of a term.³⁹⁹ The court further noted that provisional applications, incorporated by reference in the respective specifications, used the terms in accordance with the predominant usage.⁴⁰⁰

Thus, *Columbia Univ.* illustrates that a patentee cannot necessarily rely on its own use of inconsistent language in the specification to support a broader interpretation which is found to be otherwise foreclosed.

3. Risk of Adding Additional Ambiguities

In defining a new meaning for a term, a patentee must take care lest the definition itself inject additional ambiguities into the meaning of a claim term. In *Hoechst Celanese Corp. v. BP Chemicals Ltd.*,⁴⁰¹ the dispute centered on the meaning of the term *stable* in a claim covering a method for removing iodide compounds from an organic medium by using a “cation exchange resin which is *stable* in the organic medium.”⁴⁰² The patentee had attempted to define the term *stable* in the specification as follows: “By the term ‘stable,’ it is meant that the resin will not chemically decompose, or change more than about 50 percent of its *dry physical dimension* upon being exposed to the organic medium containing the iodide compounds.”⁴⁰³

The patentee’s attempt to define the term *stable* had simply created a new interpretive question about the meaning of *dry physical dimension*. The specification did not explicitly clarify whether the term *dimension* referred to volume, or rather to a linear measure. However, because a reading of *dimension* to refer to volume would have meant that the claim failed to cover the disclosed preferred embodiment, the court interpreted the claim to refer to linear dimension and thus affirmed the district court’s judgment of infringement.⁴⁰⁴

B. Specification-Based Disclaimer

In the Federal Circuit’s earlier years, the concept of “disclaimer” was more typically associated with analysis of the prosecution history. However, the Federal Circuit now regularly references the concepts of “disclaimer” or “disavowal” in the context of the specification in the same way it has traditionally referenced these concepts in the context of the prosecution history.⁴⁰⁵ In sum, certain types of statements in the specification can have the effect of precluding

³⁹⁹*Trustees of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1368, 117 USPQ2d 1659, 1667 (Fed. Cir. 2016).

⁴⁰⁰*Id.*, 117 USPQ2d at 1666.

⁴⁰¹78 F.3d 1575, 38 USPQ2d 1126 (Fed. Cir. 1996), *cert. denied*, 519 U.S. 911 (1996).

⁴⁰²*Id.* at 1578, 38 USPQ2d at 1128 (emphasis added).

⁴⁰³*Id.* at 1578–79, 38 USPQ2d at 1129 (emphasis added).

⁴⁰⁴*Id.* at 1581.

⁴⁰⁵*See, e.g.*, *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309, 110 USPQ2d 1800, 1802

a claim term from having the scope its ordinary meaning would have otherwise provided.

1. Referencing “Invention” Versus “Embodiment”

Patent practitioners routinely present and describe in the specification one or more embodiments of the claimed invention. It is generally understood that the claims may cover subject matter broader in scope than the embodiments disclosed.⁴⁰⁶ In fact, the Federal Circuit recently reiterated that

[w]e do not import limitations into claims from examples or embodiments appearing only in a patent’s written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment, unless the specification makes clear that “the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.”⁴⁰⁷

A practitioner typically makes clear in the specification that the invention is limited only by the claims and not by the embodiments presented in the specification.

However, it is important that the practitioner not become careless and refer to “the invention” when reference could just as easily instead been made to a mere “embodiment.” The Federal Circuit views a specification’s careful distinction between references to “embodiments” and “the invention” as more than a mere formality.⁴⁰⁸ In *Karlin Technology, Inc. v. Surgical Dynamics*,⁴⁰⁹ the patent-in-suit referred to one of the drawings as depicting “the present invention.”⁴¹⁰ Although the court declined to limit the claim element in dispute to the disclosure of that particular drawing, it so declined only after noting that other drawings depicting identical images of the claimed element were referred to as illustrations of a “preferred embodiment.”⁴¹¹

*Watts v. XL Systems, Inc.*⁴¹² provides an example of the effect of specification-based disclaimer. The disputed claim recited a connection of pipe joints, each pipe joint having “tapered external threads *dimensioned such that* one such joint may be sealingly connected directly with another such joint.”⁴¹³ Although “*dimensioned such that*” appears on its face to encompass a variety structural dimensions meeting the recited “sealingly connected” requirement, the court

⁴⁰⁶*See, e.g.*, *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 USPQ2d 1498 (Fed. Cir. 1998) (“It is a truism that a claim need not be limited to a preferred embodiment.”).

⁴⁰⁷*JVW Enters. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335, 76 USPQ2d 1641, 1649 (Fed. Cir. 2005) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323, 75 USPQ2d 1321, 1334 (Fed. Cir. 2005) (en banc), *cert denied*, 546 U.S. 1170 (2006)).

⁴⁰⁸*See C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864, 73 USPQ2d 1011, 1016 (Fed. Cir. 2004) (“Statements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term.”).

⁴⁰⁹177 F.3d 968, 50 USPQ2d 1465 (Fed. Cir. 1999).

⁴¹⁰*Id.* at 972, 50 USPQ2d at 1468.

⁴¹¹*Id.* at 973, 50 USPQ2d at 1469 (noting that “[w]e therefore conclude that the written description uses the terms ‘present invention’ and ‘preferred embodiment’ interchangeably”).

⁴¹²232 F.3d 877, 56 USPQ2d 1836 (Fed. Cir. 2000).

⁴¹³*Id.* at 879, 56 USPQ2d at 1840.

held that the claim only covered “structures utilizing misaligned taper angles.”⁴¹⁴ For this interpretation, the court relied in significant part on a statement in the specification characterizing “the invention” (rather than just an “embodiment”) as including connections in which “the taper of the external thread is formed at a lesser angle than the taper of the internal thread.”⁴¹⁵

In *SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*,⁴¹⁶ the court again used the specification to narrow seemingly broad claim language. The disputed claim language recited both “a guide wire lumen” and “an inflation lumen” but did not define their relative positions except to recite that the two were “separate.”⁴¹⁷

Nevertheless, the court used the specification to limit the claim to lumens that were “coaxial” rather than “dual or side-by-side.”⁴¹⁸ The specification included statements characterizing the “invention” as including particular structures (in this case, coaxial lumens), which the specification distinguished from prior art “dual lumen” arrangements.⁴¹⁹ Among the specification statements that the court identified as limiting the disclosed invention, there was a particularly direct one indicating that a coaxial arrangement was “the basic sleeve structure for *all embodiments of the present invention contemplated and disclosed herein*.”⁴²⁰

The Federal Circuit has held patentees to their words in describing an “invention” in several recent cases. *Honeywell International, Inc. v. ITT Industries*⁴²¹ presents a paradigmatic example of the danger of referring to the “invention” rather than an “embodiment.” In this case, the specification stated (among other things) that “[a]ccording to the present invention, a *fuel filter* for a motor vehicle is made from a moldable material which may be safely used in vehicles equipped with electronic fuel injection system.”⁴²² The court noted that this language did not refer to a mere embodiment, and stated that “[t]he public is entitled to take the patentee at his word and the word was that the invention is a fuel filter.”⁴²³ Thus, the patent, which claimed “fuel system components,” would not be construed to cover other fuel system components besides fuel filters, even though they were made in a manner similar to the claimed fuel filters. (It also did not help that fuel filters were the *only* embodiment of a fuel system component that was disclosed in the specification, as discussed in Section 8.04.C below.)

Similarly, *On Demand Machine Corp. v. Ingram Industries, Inc.*⁴²⁴ recounts that *Phillips* “stressed the dominance of the specification in understanding the

⁴¹⁴*Id.* at 882, 56 USPQ2d at 1840.

⁴¹⁵See U.S. Patent No. 4,813,717 col. 3, lines 3–14; *Watts*, 232 F.3d at 883 (citing that portion of the patent).

⁴¹⁶242 F.3d 1337, 58 USPQ2d 1059 (Fed. Cir. 2001).

⁴¹⁷*SciMed*, 242 F.3d at 1340, 58 USPQ2d at 1062.

⁴¹⁸*Id.*

⁴¹⁹*Id.* at 1342–43, 58 USPQ2d at 1064.

⁴²⁰*Id.* at 1344, 58 USPQ2d at 1065 (quoting the disputed patent’s specification) (emphasis added).

⁴²¹452 F.3d 1312, 79 USPQ2d 1294 (Fed. Cir. 2006) (quoting *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001)).

⁴²²*Id.* at 1318, 79 USPQ2d at 1299 (emphasis added).

⁴²³*Id.*

⁴²⁴442 F.3d 1331, 78 USPQ2d 1428 (Fed. Cir. 2006).

scope and defining the limits of the terms used in the claim.”⁴²⁵ Accordingly, “[i]n general, the scope and outer boundary of claims is set by the patentee’s description of his invention.”⁴²⁶ In this case, the “summary of the invention” described the claimed invention narrowly, noting that its “object” was basically to provide a book-manufacturing system that stored the contents of many books, as well as promotional materials that aid the consumer in choosing a book, to allow the consumer to choose a book and “facilitate the high speed manufacture of a single copy of a selected book on the immediate premises while the customer waits for a very short time.”⁴²⁷ This narrow context was materially dissimilar from the accused process by which defendant Amazon.com provided promotional materials and accepted Internet orders of books that were, in turn, filled by codefendant wholesale publishers.⁴²⁸ Had the specification instead characterized the retail setting as merely an embodiment, this result may well have been avoided (assuming that the narrow characterization was not made to avoid prior art in the first place).⁴²⁹

A 2006 nonprecedential opinion, *Wireless Agents LLC v. Sony Ericsson Mobile Communications AB*,⁴³⁰ held a patentee to express statements concerning the invention based, at least in part, on Rule 1.73 of Title 37 of the Code of Federal Regulations. This rule instructs patent prosecutors to include the summary of the invention section in patent applications, as follows:

§1.73 Summary of the invention.

A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description. Such summary should, when set forth, *be commensurate with the invention* as claimed and any object recited should be that of the invention as claimed.⁴³¹

The decision concludes that a detailed description of an invention set out in the “summary of the invention” section of the specification was not merely referring to a preferred embodiment, but must be considered “commensurate with the invention as claimed” in accordance with Rule 1.73. Notably, the patentee’s use of a boilerplate clause at the end of the specification that included statements such as “This description is not meant to be construed in a limiting sense” and “Modifications of the disclosed embodiments will become apparent to persons skilled in the art” did not require a different conclusion.⁴³² This suggests that, where possible, the court will look for actual embodiments, not mere speculation that some other undisclosed embodiments might be apparent to those of skill in the art.

⁴²⁵*Id.* at 1337–38, 78 USPQ2d at 1432.

⁴²⁶*Id.* at 1338, 78 USPQ2d at 1433.

⁴²⁷*Id.* at 1334, 78 USPQ2d at 1430.

⁴²⁸*Id.* at 1345, 78 USPQ2d at 1438.

⁴²⁹*See id.* (noting that printing “a single copy of a book, using computer technology and high-speed printing, was prior art”).

⁴³⁰No. 06-1054, 2006 U.S. App. LEXIS 18933, at *5 (Fed. Cir. July 26, 2006).

⁴³¹37 C.F.R. §1.73 (2006) (emphasis added).

⁴³²*Wireless Agents*, 2006 U.S. App. LEXIS 18933, at *6.

The court relied on the summary of the invention in *Silicon Graphics, Inc. v. ATI Technologies, Inc.*⁴³³ The invention at issue related to rasterization processes and circuits for representing three-dimensional graphics in two dimensions. Claim 1 recited “a rasterization circuit . . . that rasterizes the primitive according to a rasterization process which operates on a floating point format . . . wherein the rasterization circuit performs scan conversion on vertices having floating point color values.”⁴³⁴ The court addressed two issues regarding this language: (1) Did the claim require that the entire process of rasterizing primitives be done on a floating point basis? and (2) Did the claim require that the entire scan conversion process be done on a floating point basis? The accused infringer’s products did some but not all of the steps included in rasterizing primitives using floating point numbers⁴³⁵ and some but not all of the scan conversion process in floating point numbers.⁴³⁶ On both issues, the court looked to the invention summary. Regarding the first issue, the court noted that the summary states “[t]he present invention provides a display system and process whereby the geometry, rasterization, and frame buffer *predominately operate* on a floating point format” and that “*certain* rasterization processes are performed according to a floating point format.”⁴³⁷ Partly on the basis of the summary, the court held that the entire process of “rasterizing primitives” did not have to be done in floating point format. However, regarding the second issue, the court limited the claim to covering only structures for “scan conversion” processes that were done entirely in floating point. The court noted that the summary stated: “*Specifically, the scan conversion process is now handled entirely on a floating point basis.*”⁴³⁸ The court further noted that “[n]othing else in the specification indicates that the statement in the Summary of the Invention was merely an embodiment of the present invention.”⁴³⁹

Sometimes the court seems to stretch the meaning of terms beyond recognition in response to specification statements characterizing “the invention.” For example, as discussed above in Section 8.03.C, the court in *Netcraft* effectively interpreted the term “communications link” to mean “Internet” link based on repeated references in the specification linking “the invention” to the “Internet” context.

However, even when an applicant assigns a characteristic to “the invention” rather than to “an embodiment,” the court might not apply specification-based disclaimer to limit claim scope if it cannot find a textual basis in the claim for doing so. Although the *Netcraft* court could point to “communications link”

⁴³³607 F.3d 784, 95 USPQ2d 1417 (Fed. Cir. 2010).

⁴³⁴*Id.* at 788, 95 USPQ2d at 1421.

⁴³⁵*Id.* at 789–90, 95 USPQ2d at 1423.

⁴³⁶*Id.*

⁴³⁷*Id.* at 791, 95 USPQ2d at 1423 (emphasis added by court).

⁴³⁸*Id.* (emphasis added by court).

⁴³⁹*Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 791, 95 USPQ2d 1417, 1423 (Fed. Cir. 2010). *Retractable Techs., Inc. v. Becton Dickinson & Co.* provides another, more recent example of holding the inventor to statements of the “invention” even when claim differentiation would suggest a broader scope. 653 F.3d 1296, 99 USPQ2d 1233 (Fed. Cir. 2011). In *Retractable*, a claim to a retractable syringe including a hollow “body” required that the body be a unitary structure because such a structure had been characterized in the patent as part of the “invention.” *Id.* at 1305, 99 USPQ2d at 1241.

as a textual basis for bringing in the specification's linking of the invention to the "Internet," in *MBO Laboratories, Inc. v. Becton*⁴⁴⁰ the court found no such basis. Specifically, the court considered whether claims covering a mechanism for shielding a syringe needle required that such shielding occur "simultaneously" upon removal of the needle from the patient. The summary of the invention referenced "the present invention" and stated that "there is provided a new and improved system which . . . shields the blood-contaminated needle *simultaneously with its removal from the donor. . .*"⁴⁴¹ Three of the claims in dispute recited the word "immediately" in the preamble. With respect to those claims, the court used the statement from the specification's summary of the invention, along with similar statements from the prosecution history, to read "immediately" as requiring "simultaneous" shielding of the needle upon withdrawal.⁴⁴² However, with respect to two claims that did not recite "immediately," the court held that it was improper to read in language from the specification to require such simultaneous shielding.⁴⁴³

Some of the claims in *ICU Medical*, discussed above at Section 8.03.C, also lacked any textual basis for reading limitations suggested by the specification into the claims. As discussed above, the court found reason to construe medical valve claims referencing a "spike" to require a pointed tip. However, some of the valve claims lacked any reference to a spike whatsoever.⁴⁴⁴ Rather than interpret these claims to require that the valve include a portion with a pointed tip, the court affirmed a holding that these "spikeless" claims lacked sufficient written description support because the patent as filed only referenced valves with spikes.⁴⁴⁵

Similarly, in *SRAM Corp v. AD-II Engineering, Inc.*,⁴⁴⁶ the court declined to apply specification-based disclaimer to require that a particular feature be included in the claim. The referenced feature, "precision indexed downshifting," did not explicitly appear in the claim, and the court found no basis for reading it in, even though it had been referenced as an "important aspect of the present invention" and even though it had been used during prosecution as the basis for distinguishing a prior art reference.⁴⁴⁷

Although not discussed explicitly by the court, the claim at issue recited in detail the relevant shifting step, but none of the individual words in that step were particularly controversial or the subject of interpretation. Rather, the court was considering interpretation of the step as a whole and arguably did not have the textual "hook" that the court required be present in *MBO* in order to provide a basis for applying specification-based disclaimer to pull in statements from the specification. Of course, this case is difficult to reconcile with other cases in which statements about "the invention" have triggered application of

⁴⁴⁰474 F.3d 1323, 81 USPQ2d 1661 (Fed. Cir. 2007).

⁴⁴¹*Id.* at 1330, 81 USPQ2d at 1665.

⁴⁴²*Id.*

⁴⁴³*Id.* at 1331, 81 USPQ2d at 1666.

⁴⁴⁴558 F.3d 1368, 1377, 90 USPQ2d 1072 (Fed. Cir. 2009).

⁴⁴⁵*Id.* at 1378.

⁴⁴⁶465 F.3d 1551, 80 USPQ2d 1363 (Fed. Cir. 2006).

⁴⁴⁷*Id.* at 1359, 80 USPQ2d at 1365.

specification-based disclaimer without any clear textual basis in the claim for doing so.⁴⁴⁸

Note, however, that broad reference to “embodiments,” instead of the “invention,” in the specification will not necessarily broaden narrowly drafted claims. In *Schoenhaus v. Genesco, Inc.*,⁴⁴⁹ the patentee was limited by its narrow claims for an orthopedic shoe “insert” even though the specification defined “the invention” in broader terms as either an insert or an entire shoe. The Federal Circuit noted that it is the claim that must be construed, not the invention, and it found the specification described the claim terms more narrowly than the invention disclosed. The court further noted that there is a presumption that the same terms appearing in different portions of the claims should be given the same meaning unless the specification clearly indicates otherwise, and the broader reading covering a shoe instead of just an insert would render some of the claims nonsensical. Similarly, in *Terlep v. Brinkmann Corp.*,⁴⁵⁰ the Federal Circuit found that the claim term “clear” for the claimed plastic tubular light emitting diode (LED) lamp holders excluded “translucent” holders like those in the patent infringement defendant’s solar-powered pathway lamps. The text of claim 1 and the other claims provided little guidance on the meaning of the term “clear,” but the specification contained language implying a distinction between lenses or holders that diffuse or scatter light and those that transmitted light without obstruction. Although dictionaries cited “transparent” and “translucent” as synonyms, it distinguished the terms in a manner similar to the specification.

2. Statements of Advantage

A subtler form of what might also be called specification-based disclaimer can result from statements of advantage. In considering the dangers of emphasizing advantages of particular features, the drafter should also keep in mind that sometimes making clear the purpose of the invention, or of one aspect of the invention, can help promote a level of understanding on the part of the judge that supports, rather than undermines, a broad interpretation (see Section 8.04.D below discussing *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, and Section 8.04.E below discussing *Nellcor Puritan Bennett, Inc. v. Masimo Corp.*). That said, the drafter should always remember that a patent is a legal document, not a marketing one. Thus, any statement might be considered game for a later accused infringer to raise arguments that a claim’s scope should be limited.

The decision in *Laitram Corp. v. Morehouse Industries, Inc.*⁴⁵¹ illustrates the potential impact of statements of advantage. This case involved conveyer belt sections. The claimed conveyer belt sections had “sprocket recesses” that engaged “sprocket teeth” of a sprocket wheel that drove the conveyer belt.⁴⁵² Claim 1 called for the sprocket recesses to be defined by “at least two trans-

⁴⁴⁸See, e.g., *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 58 USPQ2d 1059 (Fed. Cir. 2001) (discussed above in this section).

⁴⁴⁹440 F.3d 1354, 1356–57, 78 USPQ2d 1252, 1254 (Fed. Cir. 2006).

⁴⁵⁰418 F.3d 1379, 76 USPQ2d 1053 (Fed. Cir. 2005).

⁴⁵¹143 F.3d 1456, 46 USPQ2d 1609 (Fed. Cir. 1998).

⁴⁵²*Id.* at 1458, 46 USPQ2d at 1611.

verse elements.”⁴⁵³ The two transverse elements were, in plain terms, two opposing walls that together formed the sprocket recess. The claims referred to the surface of each of these opposing walls as a “driving surface.”⁴⁵⁴ Claim 1 called for “at least a portion of each of said driving surfaces [to be] extending downwardly . . . and in the direction of intended travel.”⁴⁵⁵ The specification illustrated a sprocket recess that was trapezoidal in shape. In other words, the driving surfaces that formed the walls of the sprocket recess extended downward and away from each other, looking at a cross-section from top to bottom of the sprocket recess.⁴⁵⁶ The issue was whether the limitations that the driving surfaces extended “downwardly” and “in the direction of intended travel” meant that the driving surfaces had to be flat or whether the claim could cover a product in which the driving surfaces were curved.

The Federal Circuit affirmed the district court’s judgment of noninfringement and held that the claim language required that the driving surfaces be flat. The patentee had argued that the district court erred by reading a limitation from the specification into the claim.⁴⁵⁷ The Federal Circuit rejected this argument, stating:

While claims are not necessarily limited by the written description, it is relevant that nothing in the written description suggests that the driving surfaces can be anything but flat. Indeed, the benefits of having flat driving surfaces are stated in the “Summary of the Invention” portion of the written description.⁴⁵⁸

In a footnote, the court quoted passages from the specification discussing two advantages to having flat driving surfaces. One advantage was to “minimize chordal action and scrubbing” between the sprocket and the sprocket recess surfaces.⁴⁵⁹ The specification also stated that “[t]he angled surfaces . . . of the intermediate section also serve to present greater surface area to water and/or stream jets” for cleaning purposes.⁴⁶⁰ The court stated that the observations regarding these advantages of having flat surfaces “warrant a conclusion that the ‘driving surface’ limitation, ‘extending downwardly . . . and in the direction of intended travel,’ requires flat driving surfaces.”⁴⁶¹

The court also observed that “nothing in the written description suggests that the driving surfaces can be anything but flat.”⁴⁶² Thus, despite the stated advantages of flat surfaces, a broader interpretation might have been supported

⁴⁵³*Id.* at 1459, 46 USPQ2d at 1612.

⁴⁵⁴*Id.*

⁴⁵⁵*Id.*

⁴⁵⁶*Id.* at 1458, 46 USPQ2d at 1611.

⁴⁵⁷*Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1462, 46 USPQ2d 1609, 1613 (Fed. Cir. 1998).

⁴⁵⁸*Id.* at 1463, 46 USPQ2d at 1614.

⁴⁵⁹*Id.* at 1463, 46 USPQ2d at 1615 n.7.

⁴⁶⁰*Id.*

⁴⁶¹*Id.* Although the court’s claim construction in *Laitram* was ultimately dictated by limiting statements in the prosecution history, this portion of the opinion suggests that the court might have limited the claim’s scope based on review of the specification alone.

⁴⁶²*Id.* at 1463, 46 USPQ2d at 1614.

if the specification had at least mentioned the possibility of the surfaces not being flat.

In the more recent case of *Inpro II Licensing S.A.R.L. v. T-Mobile USA, Inc.*,⁴⁶³ the Federal Circuit again held a patent's statements of advantage against it. The case concerned interfacing technology for personal digital assistants (PDAs). The patentee argued that the district court improperly limited the claims to a preferred embodiment, direct parallel bus interfaces (DPBI), and thus the defendants, who used serial interfaces, did not infringe. Not only was DPBI the only host interface disclosed in the specification (indicating a lack of varied examples as discussed in Section 8.04.C below), but the Federal Circuit also based its opinion on the fact that the "Background of the Invention" section disparaged the use of serial interfaces and instead touted the advantages of DPBI.⁴⁶⁴

Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.⁴⁶⁵

Providing context for the description's embodiments can soften the potential effect of specification statements of advantage that, viewed in isolation, might otherwise be used to limit the claims. In *Schindler Elevator Corp. v. Otis Elevator Co.*,⁴⁶⁶ the court considered whether the term "information transmitter" and "recognition device" in the claims required a system that recognized the user and transmitted information to control an elevator without any personal action of the user other than walking into a monitored area.⁴⁶⁷ The specification stated:

The advantages achieved by the invention reside in the fact that the desired journey destination is communicated automatically to the elevator control by [(1)] the information transmitters carried by the elevator users or by [(2)] the recognition of features of the elevator users *without any personal action being required by the passenger*.⁴⁶⁸

The district court had used this statement to preclude the claimed device from covering an accused system in which the card-based transmitter had to be brought by the user to within a few inches of a card reader for information to be transmitted and for recognition to occur.⁴⁶⁹ The Federal Circuit held such an interpretation was overly narrow given the overall context provided by the claims and the examples in the specification. In particular, the court pointed out that in some embodiments, "recognition of features of the elevator users" included optical recognition of fingerprints requiring the user to put his or her finger onto

⁴⁶³450 F.3d 1350, 78 USPQ2d 1786 (Fed. Cir. 2006).

⁴⁶⁴*Id.* at 1354, 78 USPQ2d at 1788–89.

⁴⁶⁵*Id.* at 1354–55, 78 USPQ2d at 1789 (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001)).

⁴⁶⁶593 F.3d 1275, 93 USPQ2d 1262 (Fed. Cir. 2010).

⁴⁶⁷*Id.* at 1281, 93 USPQ2d at 1266.

⁴⁶⁸*Id.* at 1283, 93 USPQ2d at 1267 (emphasis added by court).

⁴⁶⁹*Id.* at 1280, 93 USPQ2d at 1280–81.

the optical scanner.⁴⁷⁰ The court considered this context in concluding that the claim in view of the specification did not preclude user “personal action” to bring a transmitter into range of a recognition device, rather, the phrase “without any personal action being required by the passenger” in the specification simply “describes how the information is communicated.”⁴⁷¹

In *Parallel Networks, LLC v. Abercrombie & Fitch Co.*,⁴⁷² the court considered interpretation of a claim reciting “an executable applet [that is] dynamically generated by the server in response to the [client] request.”⁴⁷³ The practical question in the context of applying the claim to particular accused products was whether the claim could cover a scenario in which, in response to the client request, only part of the necessary functionality was included in the applet transmitted from the server, and the remainder of the functionality could only be obtained after accessing an external link included in the applet transmission.⁴⁷⁴ One of the many parts of the specification looked to by the court was a statement of advantage near the end of the summary of the invention that, by using the invention’s techniques, “the client may be required to communicate over a low-speed communications link a greatly reduced number of times, or, in some cases, only once.”⁴⁷⁵ The court found that in the context of the patent specification, the claimed applet must “be executable or operable when it is generated and before it is first transmitted to the client, which means it must include both the particularized data and the functionality”⁴⁷⁶ (i.e., presumably it had to be self-sufficient as transmitted, without requiring reference to external functionality obtainable only through a link).

In *Openwave Systems, Inc. v. Apple, Inc.*,⁴⁷⁷ the question considered was whether the claims cover only mobile devices with small “microcontrollers,” which facilitate communications between the client device and the server; or also cover mobile devices that contain more robust “computer modules,” which serve to localize more of the computational processes onto the mobile device itself.⁴⁷⁸ At issue was whether the claims should be given their ordinary meaning or whether, through repeated statements in the specification, the patentee disclaimed mobile devices containing “computer modules.”⁴⁷⁹

The court affirmed the district court’s claim construction that a “mobile device” was “a portable wireless two-way communication device that does not contain a computer module” and that the construction did not “read out

⁴⁷⁰*Id.* at 1283, 93 USPQ2d at 1268.

⁴⁷¹*Id.* at 1284, 93 USPQ2d at 1268.

⁴⁷²704 F.3d 958, 105 USPQ2d 1625 (Fed. Cir. 2013).

⁴⁷³704 F.3d at 965.

⁴⁷⁴*See id.* at 967 (“What Figure 3 does not describe, however, is a scenario in which, in response to a request, only part of the applet is generated (with a placeholder for the rest) and is transmitted to the client, which then tries to execute it and, finding it non-executable and inoperable, follows a link back over the network to retrieve the additional data and/or functionality that is needed for the applet to run.”).

⁴⁷⁵U.S. Patent No. 6,446,111, col. 3, lines 13–17 (partly quoted by the court at 704 F.3d at 968).

⁴⁷⁶*Parallel Networks*, 704 F.3d at 968.

⁴⁷⁷808 F.3d 509, 117 USPQ2d 1189 (Fed. Cir. 2015).

⁴⁷⁸*Id.* at 512, 117 USPQ2d at 1191.

⁴⁷⁹*Id.* at 511–12, 117 USPQ2d at 1190.

embodiments including microcontrollers.”⁴⁸⁰ In particular, the court looked to statements in the “Background of the Invention” and “Summary of the Invention” sections of the specification that made clear that the patentee’s perceived problem with the prior art was the attempt to combine mobile devices with computer modules, and that the invention of the patents-in-suit was distinguishable from prior art devices that included computer modules.⁴⁸¹ Thus, *Openwave* highlights the need for caution when characterizing the prior art in any section of the specification.

C. Importance of Varied Examples

Although the requirement of enablement under 35 U.S.C. §112 is the clear statutory basis for including implementation examples in the specification, the practitioner should realize that both the quantity and quality of the examples included in the specification can have an impact on claim interpretation. Devoting energy to carefully describing a robust range of implementation examples provides the drafter with an opportunity to support a broader claim interpretation than otherwise might be obtained.

In *General Mills, Inc. v. Hunt-Wesson, Inc.*,⁴⁸² the patentee attempted to give broad meaning to the term *food item*, a concatenation of the common term *food* and the generalizing term *item*. The principal claim at issue was a combination claim that called for use of a wrapping “[i]n combination with a food item capable of having its color changed or being crispened by thermal energy[.]”⁴⁸³ The claim further called for the semiconducting coating to

resid[e] in a close proximal relation to a substantial surface portion of said food item, said thin semiconducting coating having the property of being able to convert a proportion of the microwave energy . . . into heat in the coating itself to thereby change the color or crispness of the surface of the food item⁴⁸⁴

The specification provided examples of several food items, but the examples did not suggest a variety in the relationship between the food item and the claimed coating of the wrapper. According to the court, the specification showed “food items, i.e., a fish stick, potatoes, and onion rings, wrapped in a manner such that the susceptor, which coats dielectric wrapping material, remains adjacent to the surface of the food item throughout the cooking process.”⁴⁸⁵ The court construed the claim to require the proximal relationship between food item and wrapping material to exist throughout the cooking process.⁴⁸⁶

⁴⁸⁰*Id.* at 517, 117 USPQ2d at 1195.

⁴⁸¹*Id.* at 515, 117 USPQ2d at 1193.

⁴⁸²103 F.3d 978, 41 USPQ2d 1440 (Fed. Cir. 1997).

⁴⁸³*Id.* at 979, 41 USPQ2d at 1440–41.

⁴⁸⁴*Id.*

⁴⁸⁵*Id.* at 983, 41 USPQ2d 1444.

⁴⁸⁶*Id.* at 983–84, 41 USPQ2d 1444–45.

The accused device was a bag of microwave popcorn, and the claim interpretation issue was whether the claim term *food item* encompassed popcorn.⁴⁸⁷ The court held that popcorn was not a food item encompassed by claims as a matter of law.⁴⁸⁸ The court also ruled that the limitation that the wrapping be “in a close proximal relation to a substantial surface portion of said food item” could not cover the accused bag of popcorn. The court concluded that the claim required the proximal relationship to exist throughout the cooking process.⁴⁸⁹ This conclusion bore significantly on the question of infringement since, in the context of the accused popcorn bag, the spatial relationship between susceptor and food item was more proximal before popping than it was during and after popping.⁴⁹⁰ Moreover, in the accused product, the semiconducting layer, or susceptor, resided only on one side of the bag. Furthermore, the court reasoned that even if one assumed that prior to popping the susceptor was “in close proximal relation to a substantial portion” of the popcorn, once the popping started and the bag expanded, many of the kernels moved away from the susceptor, and therefore the claim limitations were not met.⁴⁹¹ The court held that there was no infringement.⁴⁹²

Thus, *Hunt-Wesson* underscores the importance of imagining a wide range of potential applications when defining a special term in a claim and defining the metes and bounds of the term in the specification. Based on a limited set of examples in the specification, the court interpreted the term *food item* narrowly as requiring a particular physical relationship to a wrapping.

Two cases discussed in the previous section also illustrate the importance of varied examples. In *Honeywell International, Inc. v. ITT Industries*,⁴⁹³ the patentee’s failure to provide any reference in the specification to embodiments of any “fuel system component” other than fuel filters contributed to the Federal Circuit’s conclusion that the claimed component could be only fuel filters. Had the specification at least suggested embodiments in which other fuel system components were made, the case might have turned out differently. Similarly, in *Inpro II Licensing S.A.R.L. v. T-Mobile USA, Inc.*,⁴⁹⁴ the Federal Circuit, en route to a defense judgment, based its decision in part on the fact that direct parallel bus interfaces were the only interfacing means described in the specification. Thus, the patent would not be construed to cover devices using a serial interface. “Although claims need not be limited to the preferred embodiment when the invention is more broadly described, ‘neither do the claims enlarge what is patented beyond what the inventor has described as the invention.’”⁴⁹⁵

⁴⁸⁷*Id.* at 981, 41 USPQ2d 1441.

⁴⁸⁸*General Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 982, 41 USPQ2d 1440, 1442 (Fed. Cir. 1997).

⁴⁸⁹*Id.* at 983–84, 41 USPQ2d 1444–45.

⁴⁹⁰*Id.* at 984, 41 USPQ2d 1445.

⁴⁹¹*Id.*

⁴⁹²*Id.*

⁴⁹³452 F.3d 1312, 79 USPQ2d 1294, 1299 (Fed. Cir. 2006).

⁴⁹⁴450 F.3d 1350, 1454–55, 78 USPQ2d 1786, 1789.

⁴⁹⁵*Id.* at 1455, 78 USPQ2d at 1789 (quoting *Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352, 58 USPQ2d 1076 (Fed. Cir. 2001)).

In *Tap Pharmaceutical Products, Inc. v. Owl Pharmaceuticals, LLC*,⁴⁹⁶ the Federal Circuit and trial court reviewed all 31 examples listed in a specification, finding that they all described the use of a drug-retaining substance along with the claimed drug. It concluded that while nothing in the claim specifically referred to a “drug-retaining substance,” the specification made clear that the phrase “particles containing a water-soluble drug” must be interpreted as requiring both a drug and some substance in which to retain the drug.⁴⁹⁷ Thus, practitioners should be wary that repeated appearances of a limitation in the described embodiments may later be found to narrow the claims.

In *Tivo, Inc. v. EchoStar Communications Corp.*,⁴⁹⁸ the Federal Circuit considered a claim relating to digital video recorders that recited in relevant part: “wherein said Output Section assembles said video and audio components into an MPEG stream.”⁴⁹⁹ The parties disputed whether this language required assembly of the video and audio into a single stream or whether it could cover a system in which video components were assembled into one stream and audio into another. The court noted that generally “a” or “an” carry the meaning of “one or more,” but that the applicability of this interpretation “depends heavily on the context” surrounding their use.⁵⁰⁰ Here “the context clearly indicates that two separate components are assembled into a single stream.”⁵⁰¹ Furthermore, the court noted that the specification throughout referenced assembly or “reassembly” of video and audio components into a single MPEG stream and stated that the stream “has interleaved video . . . and audio . . . segments.”⁵⁰² Thus, the references in the specification to “an MPEG” stream containing both audio and video in a single stream effectively helped define the claim by implication. Had the specification provided varied examples in which audio and video were assembled into separate streams, the patentee might have had a stronger argument for the interpretive breadth it sought in litigation.⁵⁰³

D. Importance of Clear Examples

It is often said that a patent is written to one skilled in the art.⁵⁰⁴ However, the ultimate arbiter of a patent is not one skilled in the technical subject matter of the patent, but rather a judge and jury. Particularly in the case of highly technical subject matter, a clear description that allows the non-engineer jurist to

⁴⁹⁶419 F.3d 1346, 76 USPQ2d 1126 (Fed. Cir. 2005).

⁴⁹⁷*Id.* at 1354, 76 USPQ2d at 1133.

⁴⁹⁸516 F.3d 1290, 85 USPQ2d 1801 (Fed. Cir. 2008), *cert. denied*, 129 S. Ct. 306 (2008).

⁴⁹⁹*Id.* at 1295, 85 USPQ2d at 1804.

⁵⁰⁰*Id.* at 1303, 85 USPQ2d at 1811.

⁵⁰¹*Id.*

⁵⁰²*Id.* at 1304, 85 USPQ2d at 1811.

⁵⁰³Of course, hindsight in these cases is 20/20. Moreover, in the context of the invention claimed and described, separate streams might not have made technical sense.

⁵⁰⁴*See, e.g., In re Ruschig*, 379 F.2d 990, 996, 154 USPQ 118, 123 (C.C.P.A. 1967) (“Does the specification convey clearly to *those skilled in the art, to whom it is addressed*, in any way the information that appellants invented that specific compound?”) (emphasis added).

understand the invention can sometimes help persuade the patent's true arbiter in favor of the patentee's desired claim interpretation.

In *Pitney Bowes, Inc. v. Hewlett-Packard Co.*,⁵⁰⁵ the issue before the court was whether “spots,” in the phrase “spots of different sizes,” referred to spots of light or instead referred to spots of discharged area on a photoreceptor.⁵⁰⁶ The court concluded that “spots” referenced the discharge area on the photoreceptor. It reached this conclusion, in significant part, because the specification made clear underlying principles of the invention and the problem it addressed.⁵⁰⁷ Analysis of the intrinsic evidence made clear that varying the size of discharge areas was the invention's solution to the problem of generating smooth shapes. With that technical understanding in mind, the court noted that the reference in the claim's preamble to a “generated shape” composed of “spots” signaled that “spots” in the claim body referred to the discharge area rather than transient light.⁵⁰⁸

Failure to provide clear examples also can contribute to a finding of indefiniteness under 35 U.S.C. §112, such as in *Datamize, LLC v. Plumtree Software, Inc.*,⁵⁰⁹ discussed in more detail in Section 8.04.H.2 below.

E. Making Invention's Purpose Clear

Although *Laitram* (discussed in Section 8.04.B.2 above) illustrates that statements of advantage can come back to haunt the patent holder, *Pitney Bowes* illustrates that making the invention's principles clear can sometimes help support a broader meaning favored by the patentee.

Similarly, *Nellcor Puritan Bennett, Inc. v. Masimo Corp.*⁵¹⁰ illustrates how statements of purpose in the specification can help rebut an accused infringer's attempt to narrow a claim's scope. The claim language at issue recited processing waveform so that aperiodic information was “attenuated and filtered.”⁵¹¹ The accused infringer succeeded in convincing the district court that this language required that aperiodic information be removed from the signal.⁵¹² The Federal Circuit disagreed, and focused on language from the specification describing

one of the objects of the invention as being to “provide enhanced periodic information from which the patient's blood constituent can be accurately determined” by “collecting successive portions of detected optical signals encompassing periodic information for more than one heartbeat and processing the collected portions to attenuate and filter therefrom aperiodic signal waveforms.”⁵¹³

⁵⁰⁵182 F.3d 1298, 51 USPQ2d 1161 (Fed. Cir. 1999).

⁵⁰⁶*Id.* at 1303–04, 51 USPQ2d at 1164.

⁵⁰⁷*Id.* at 1310, 51 USPQ2d at 1170.

⁵⁰⁸*Id.* at 1306, 51 USPQ2d at 1166.

⁵⁰⁹417 F.3d 1342, 75 USPQ2d 1801 (Fed. Cir. 2005).

⁵¹⁰402 F.3d 1364, 74 USPQ2d 1351 (Fed. Cir. 2005).

⁵¹¹*Id.* at 1366, 74 USPQ2d at 1353 (emphasis in the original).

⁵¹²*Id.*

⁵¹³*Id.* at 1367–68, 74 USPQ2d at 1354.

The court noted that the referenced technique, which relies on cumulatively building up periodic information to reduce the effect of aperiodic information, “indicates that the words attenuated and filtered are used to describe the relative reduction in the significance of aperiodic noise”⁵¹⁴ rather than “absolute removal of unwanted data.”⁵¹⁵

Thus, while the drafter must use care in characterizing the invention’s purpose and advantages, *Nelcor* suggests that the drafter should consider whether a clear statement of the invention’s purpose and operation might help support a broad interpretation in later disputes.

Clarity of purpose can also help support a flexible assessment of equivalents under Section 112(f). In *Uniloc USA, Inc. v. Microsoft Corp.*,⁵¹⁶ the parties disputed whether Microsoft’s products had a local and remote “licensee unique ID generating means.” The district court interpreted the language to cover structure that is “a summation algorithm or a summer and equivalents thereof.”⁵¹⁷ After a jury verdict of infringement, the district court entered judgment as a matter of law that no reasonable jury could have found infringement.⁵¹⁸

In reinstating the jury’s infringement verdict, the Federal Circuit quoted earlier case law providing that “when in a claimed ‘means’ limitation the disclosed physical structure is of little or no importance to the claimed invention, there may be a broader range of equivalent structures than if the physical characteristics of the structures are critical in performing the claimed function in the context of the claimed invention.”⁵¹⁹ Looking to the specification of the patent before it, the *Uniloc* court noted that

there is no indication that the summation structure was critical to the ’216 patent’s licensee unique ID generating means algorithm’s function of generating a licensee unique ID. In fact, the ’216 patent repeatedly refers to the licensee unique ID generating means by the generic phrase, “an algorithm,” . . . and makes clear that the importance of the algorithm is only that it be “adapted to generate a registration number which is unique to an intending licensee.”⁵²⁰

F. Making Invention’s “Way” Clear

Just as clearly explaining an embodiment’s purpose can help the literal scope of Section 112(6) equivalents, clearly explaining how embodiments achieve the desired result might help support a later argument under the doctrine of equivalents (DOE). In *Abraxis Bioscience, Inc. v. Mayne Pharma (USA), Inc.*,⁵²¹ the disputed patent covered use of an “edetate” in a composition for

⁵¹⁴*Id.*

⁵¹⁵*Id.* at 1368, 74 USPQ2d at 1355.

⁵¹⁶632 F.3d 1292, 1297, 98 USPQ2d 1203, 1210 (Fed. Cir. 2011).

⁵¹⁷*Id.*

⁵¹⁸*Id.* at 1301, 98 USPQ2d at 1212.

⁵¹⁹*Id.* at 1304, 98 USPQ2d at 1214 (quoting *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422 (Fed. Cir. 2000)).

⁵²⁰*Id.* at 1305, 98 USPQ2d at 1214 (citations omitted).

⁵²¹467 F.3d 1370, 80 USPQ2d 1705 (Fed. Cir. 2006).

preventing microbial activity associated with giving a particular anesthesia to patients through an intravenous kit. “Edetate” in the claims was interpreted on appeal to literally cover EDTA and EDTA salts.⁵²² The accused product included a substance that was a structural analog of EDTA but was not in fact chemically derived from EDTA. Based on the court’s narrower claim construction, it reversed the lower court’s holding that the accused product literally infringed.⁵²³

The court did, however, affirm a holding that the accused product infringed under the DOE. In analyzing the “way” in which the claimed invention and the accused product achieved desirable results, the court pointed to a passage in the specification that described edetates as “metal ion sequestering agent[s].”⁵²⁴ The court noted that the accused infringer had described the accused product in a similar manner before the U.S. Food and Drug Administration, and this, in part, supported the court’s decision to uphold the lower court’s finding of DOE infringement.

Of course, given different technical facts, a narrow or overly elaborate description of an invention’s “way” might also be used to argue nonequivalents. However, in this case, the court’s understanding of the way in which the claimed invention achieved its result facilitated favorable treatment for the patentee under the DOE.

G. Incorporation by Reference

Patent practitioners sometimes use incorporation by reference as a shortcut to ensure that material relevant to enablement is included in the specification. However, practitioners should also be aware that the Federal Circuit is willing to use statements from incorporated material as a basis for limiting claim scope. In *Cook Biotech, Inc. v. ACELL, Inc.*,⁵²⁵ the court considered a patent directed to a tissue composition prepared for use as scaffolding in tissue reconstruction. In construing the claims, the court needed to determine whether the phrase “luminal portion of the tunica mucosa” included an “epithelium layer” as well as the “tunica propria.”⁵²⁶ The court relied heavily on the fact that another patent that had been incorporated by reference into the specification made clear that the disputed tissue portion should include “epithelial layers.”⁵²⁷ The court made clear that incorporated material is treated “as if it were explicitly contained” in the incorporating patent.⁵²⁸

In *X2Y Attenuators, LLC v. International Trade Commission*,⁵²⁹ the Federal Circuit went so far as to treat statements in related parent specifications that

⁵²²*Id.* at 1378, 80 USPQ2d at 1708–09.

⁵²³*Id.* at 1378–79, 80 USPQ2d at 1709.

⁵²⁴*Id.* at 1380, 80 USPQ2d at 1712.

⁵²⁵460 F.3d 1365, 79 USPQ2d 1865 (Fed. Cir. 2006).

⁵²⁶*Id.* at 1375, 79 USPQ2d at 1871.

⁵²⁷*Id.* at 1376–78, 79 USPQ2d at 1871–72.

⁵²⁸*Id.* at 1376, 79 USPQ2d at 1872 (quoting *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000)).

⁵²⁹2014 U.S. App. LEXIS 12736 (Fed. Cir. 2014).

were incorporated by reference as “clear and unmistakable disavowal of claim scope.”⁵³⁰ The parent specifications referred to a particular element as “essential” and to a particular configuration including that element as “universal to all the embodiments.”⁵³¹ Even though at least some the asserted claims issued from an application that was a continuation-in-part and did not include such disclaiming statements,⁵³² the fact that the parent applications were incorporated by reference was sufficient for the court to use them to limit the claims.⁵³³

The lesson is that incorporation by reference should be used with caution. If it is used at all, the practitioner should review the incorporated reference to determine whether it may assign restrictive meanings to critical claim terms.

H. Section 112 Disclosure Doctrines and Claim Scope

In theory, analysis of validity under the enablement and written description requirements of 35 U.S.C. §112 is distinct from analysis of claim interpretation. However, in practice, these validity doctrines interact with claim interpretation by relating the specification’s disclosure to the permissible scope of a given claim may be accorded and still be considered to be a valid claim.

Moreover, the Federal Circuit in *Phillips* provided some theoretical basis for such a linkage by rooting the importance of the specification to claim interpretations in the requirements of Section 112. In particular, Judge Bryon wrote: “The close kinship between the written description and the claims is enforced by the statutory requirement that the specification describe the claimed invention in ‘full, clear, concise, and exact terms.’”⁵³⁴

In a published dissent from the denial of en banc review, Judge Rader noted that *Phillips* emphasized that claim language may exceed the scope of the specification’s preferred embodiments. This implicates the written description requirements of 35 U.S.C. §112, particularly given the uncertainties of written description analysis:

[T]he written description invalidity doctrine is really a claim construction invalidity doctrine. If the claims are construed as confined to the embodiments in the specification, written description invalidity does not come into play. If the claims, on the other hand, are construed to embrace more than the specification, this court (on only some occasions and without a clear standard to determine those occasions in advance) will invalidate.⁵³⁵

This relationship between Section 112 and claim interpretation has arisen both in the context of the enablement requirement and the written description requirement. These requirements, which draw on Section 112, first paragraph,

⁵³⁰*Id.* at *8.

⁵³¹*Id.* at *7–8.

⁵³²*See id.* at *10.

⁵³³*Id.* at *10–11.

⁵³⁴*Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1328 (Fed. Cir. 2005) (en banc), *cert denied*, 546 U.S. 1170 (2006).

⁵³⁵*LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 433 F.3d 1373, 1377 n.1, 77 USPQ2d 1391, 1397 n.1 (Fed. Cir. 2006) (Rader, J., dissenting from order denying en banc review).

have been viewed by the court through the prism of the public notice function of claims. Section 112, second paragraph serves that function by requiring that the specification conclude with claims “particularly pointing out and distinctly claiming” the invention. The following cases illustrate the interplay of these principles more fully.

1. Enablement and Claim Scope

The dispute in *Digital Biometrics, Inc. v. Identix, Inc.*⁵³⁶ centered in part on the meaning of the technical term *arrays*. The invention pertained to a system and method for capturing, storing, and displaying fingerprint images.⁵³⁷ According to the patent specification, an analog signal from a video camera was fed to a frame digitizer that converted the analog signal to a digital format. The digitizer produced a data structure in memory comprising two-dimensional “arrays” of digital pixel values.⁵³⁸ The arrays in memory constituted a physical structure.

The accused device generated an analog signal and converted that signal into a “stream of digital values,” each value corresponding to a single pixel location.⁵³⁹ The accused method stored only one pixel at a time in a register. At any moment in time the registers of the device used in the accused method contained values for only a single pixel.⁵⁴⁰ The district court concluded that the accused method did not infringe, because it never actually produced an array, but rather produced only a single pixel at a time.⁵⁴¹

On appeal, the court was confronted with a choice between a broader or a narrower interpretation of the term *arrays*. It concluded that the intrinsic evidence clearly supported a narrower construction of *arrays* to mean a data structure stored in memory that is representative of a two-dimensional image.⁵⁴² In selecting the narrower meaning, the court reasoned in part that, under *Athletic Alternatives, Inc. v. Prince Manufacturing, Inc.*, when choosing between two meanings, a narrower meaning that is supported by the specification is preferred to a broader one that is not. The court stated “we are not sure the resulting claim would be enabled” if the broader interpretation were adopted.⁵⁴³

The principle of *Athletic Alternatives* invoked by the court in *Digital Biometrics* draws on the interplay between the public notice function of claims, tied to the second paragraph of Section 112—which requires that the invention be claimed “distinctly”—and the enablement requirement of Section 112, first paragraph. In particular, in *Athletic Alternatives*, the court had stated:

Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least

⁵³⁶149 F.3d 1335, 47 USPQ2d 1418 (Fed. Cir. 1998).

⁵³⁷*Id.* at 1337, 47 USPQ2d at 1420.

⁵³⁸*Id.* at 1338, 47 USPQ2d at 1421.

⁵³⁹*Id.* at 1342, 47 USPQ2d at 1422–23.

⁵⁴⁰*Id.* at 1349, 47 USPQ2d at 1428.

⁵⁴¹*Id.* at 1343, 47 USPQ2d at 1423.

⁵⁴²*Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1346, 47 USPQ2d 1418, 1425–26 (Fed. Cir. 1998).

⁵⁴³*Id.*

entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning.⁵⁴⁴

Thus, the specification may control the meaning of a claim term, if not through an implicit or explicit definition of the term, then through the requirement that the claims demarcate the metes and bounds of the invention. In light of a claim's public notice function, a claim interpretation that is not clearly enabled by the specification may be rejected in favor of a narrower interpretation that is clearly enabled. In particular, with more complex technologies, a court may be less inclined to give a specialized technical term in a patent claim a broad interpretation unless the specification clearly supports such an interpretation.

2. *Written Description and Claim Scope*

The written description requirement, like the enablement requirement, has its basis in the first paragraph of 35 U.S.C. §112, which provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

An applicant generally satisfies the written description requirement by conveying in the specification with reasonable clarity that, as of the filing date, the applicant was in possession of the claimed invention.⁵⁴⁵ The written description requirement prevents an inventor from overreaching by requiring him to recount his invention with adequate detail to ensure that his future claims can be determined to be within the scope of his original creation.⁵⁴⁶

A paradigmatic example of failure to adequately describe an invention occurred in *Datamize, LLC v. Plumtree Software, Inc.*,⁵⁴⁷ which included a claim limitation involving the customization of a computerized kiosk to achieve an “aesthetically pleasing” user interface. Aesthetics was deemed an inherently subjective measure, and no objective definition of the term was suggested by the specification. Because “aesthetically pleasing” could not be evaluated by objective means, the claim was found invalid for indefiniteness. “The scope of claim language cannot depend solely on the unrestrained, subjective opinion of a particular individual purportedly practicing the invention.”⁵⁴⁸ In contrast, *CollegeNet, Inc. v. ApplyYourself, Inc.*⁵⁴⁹ involved a claim limitation that provided for the delivery of college-application data from an applicant to a college

⁵⁴⁴*Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581, 37 USPQ2d 1365, 1572 (Fed. Cir. 1996).

⁵⁴⁵*See Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991).

⁵⁴⁶*Id.* at 1561, 19 USPQ2d at 1115 (citing *Rengo Co. v. Molins Mach. Co.*, 657 F.2d 535, 551, 211 USPQ 303, 321 (3d Cir. 1981)).

⁵⁴⁷417 F.3d 1342, 75 USPQ2d 1801 (Fed. Cir. 2005).

⁵⁴⁸*Id.* at 1350, 75 USPQ2d at 1807.

⁵⁴⁹418 F.3d 1225, 75 USPQ2d 1733 (Fed. Cir. 2005).

“in a format specified by the institution.”⁵⁵⁰ The court rejected arguments that the format-specified-by-the-institution limitation was so broad and vague as to require delivery of data in an unlimited variety of formats. Rather, the phrase merely means that the invention must offer one or more different formats, including those suggested by the specification, from which an educational institution may choose to receive the data.

a. Written Description Is Distinct From Enablement

Written description is distinct from enablement, although the two requirements are intertwined. Enablement requires simply that the technical aspects of the disclosure are sufficient enough that one skilled in the art could make the invention claimed. The written description requirement, however, goes beyond requiring a certain level of technical disclosure:

A description which renders obvious the invention for which an earlier filing date is sought is not sufficient. It is not sufficient for [the] purpose[] of the written description requirement . . . that [a] disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose.⁵⁵¹

In other words, while the enablement requirement takes into account the state of the art, and thus only requires that sufficient detail be disclosed so that one skilled in the art could make the invention “without undue experimentation,”⁵⁵² the written description requirement requires the inventor to make clear what he or she has invented.

b. Written Description and New Matter

The written description requirement most often arises when a patent applicant has added new claims to an application that were not present in the application as originally filed. An applicant may seek the benefit of the filing date of an earlier-filed foreign or U.S. patent application under 35 U.S.C. §119 or 35 U.S.C. §120, respectively, for claims of a later filed application. In an interference context, an applicant or patentee may also need to support an interference count drafted after the original filing date. In these situations, or when a claim is otherwise added by amendment after the original filing date, the written description question is analyzed in terms of “new matter” under 35 U.S.C. §132. In these cases, the issue is whether the specification provides adequate support for a claim added (or interference count) after the original filing date.

*Gentry Gallery, Inc. v. Berklene Corp.*⁵⁵³ is a paradigmatic new matter case. In *Gentry*, the claim at issue was directed to a “sectional sofa” including “a pair of reclining seats” and “a fixed console disposed in the double reclining seat

⁵⁵⁰*Id.* at 1227, 75 USPQ2d at 1734.

⁵⁵¹*Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

⁵⁵²*In re Wright*, 999 F.2d 1557, 1560, 27 USPQ2d 1510, 1512 (Fed. Cir. 1993).

⁵⁵³134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998).

sofa section between the pair of reclining seats.”⁵⁵⁴ Of particular importance to the written description issue, the claim recited “control means” that were “mounted on the double reclining seat sofa section.”⁵⁵⁵ This language clearly did not limit the location of the controls to the console, but rather implied that the controls could be anywhere “on the double reclining seat sofa section.” This claim was added after the original filing.⁵⁵⁶ The court held the claim invalid for lack of support because “the original disclosure clearly identifies the console as the only possible location for the controls.”⁵⁵⁷

Although not directly determining interpretation of the claim in dispute, the written description in *Gentry* illustrates how the manner in which an invention’s embodiments are presented can ultimately limit the scope of the subject matter to which the claims may be directed. The court noted that the specification had “provide[d] for only the most minor variation in the location of the controls.”⁵⁵⁸ The specification stated that the controls “may be mounted on top or side surfaces of the console rather than on the front wall . . . without departing from this invention.”⁵⁵⁹ The court also noted that the specification stated that one of the “object[s] of the present invention is to provide . . . a console positioned between [the reclining seats] that accommodates the controls for both of the reclining seats.”⁵⁶⁰ The court concluded that “locating the controls anywhere but on the console is outside the stated purpose of the invention.”⁵⁶¹ The court held the claim at issue invalid under Section 112(1), stating that the patentee’s “disclosure unambiguously limited the location of the controls to the console” and that “claims may be no broader than the supporting disclosure, and therefore that a narrow disclosure will limit claim breadth.”⁵⁶²

In *Gentry*, the drafter had attempted to point out locations for the controls other than the front console wall location depicted in the drawings. However, the alternative locations themselves suggested the outer limits of the invention. The suggested alternatives were all clearly limited to other areas on the console. Just as nothing in the patent at issue in *Laitram* had suggested “that the driving surfaces could be anything but flat,”⁵⁶³ nothing in the *Gentry* patent suggested that the controls could be anywhere but on the console. This narrow view of the invention was reinforced by the fact that one of the stated objects of the invention was to provide a console for housing the controls. Thus *Gentry*, like *Laitram*, reinforces the view that, to the extent resources permit, the specification should include as many varied examples as possible. Such varied examples

⁵⁵⁴*Id.* at 1475, 45 USPQ2d at 1499.

⁵⁵⁵*Id.*

⁵⁵⁶*Id.* at 1479, 45 USPQ2d at 1503 (characterizing the claim at issue as broader than the “broadest original claim”).

⁵⁵⁷*Id.* at 1479, 45 USPQ2d at 1503–04.

⁵⁵⁸*Id.*

⁵⁵⁹*Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 USPQ2d 1498, 1503–04 (Fed. Cir. 1998).

⁵⁶⁰*Id.*

⁵⁶¹*Id.*

⁵⁶²*Id.* at 1480, 45 USPQ2d at 1503–04.

⁵⁶³*Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1463, 46 USPQ2d 1609, 1614 (Fed. Cir. 1998); see the discussion of *Laitram* at §8.04.B.2 above.

can help support later arguments either that a debatable term be given broad meaning (*Lairtram*), or that a clearly broad claim survive validity scrutiny under the written description requirement (*Gentry*).

It is perhaps a fine line between deciding, as in *Gentry*, to invalidate a claim for lack of written description and deciding to instead to maintain the claim but simply use the specification to narrow the claim's interpretation, effectively reading the claim in a way that the specification necessarily provides support. In *Netcraft*, discussed earlier,⁵⁶⁴ for example, the court was willing to narrow the term "communications link" to require that the link be an "Internet" link, and one wonders what might have happened if the question of whether the relevant claim lacked written description support had been before the court. On the surface, it certainly appears that, just as the disputed patent in *Gentry* had not described embodiments where the controls were not on the console, the disputed patent in *Netcraft* lacked any description of a "communications link" other than the "Internet." Yet in *Netcraft* the court narrowed the claim to fit the specification, whereas in *Gentry* the court read the claim broadly and therefore found the relevant claim invalid for lack of written description. In fairness to the court, however, the two results are not inconsistent when one accounts for the procedural postures, as one always should when analyzing the legal implications of a particular case. Because the written description issue was not before the court in *Netcraft*, one cannot directly compare the case to *Gentry*.

The Federal Circuit has made clear that the holding in *Gentry* does not apply to claims submitted with the originally filed specification. In *Scriptpro, LLC v. Innovation Associates, Inc.*,⁵⁶⁵ the claims in dispute did not recite any sensors.⁵⁶⁶ Nevertheless, the specification stated that the "collating unit of the present invention broadly includes" various components, including "a plurality of sensors,"⁵⁶⁷ and the district court held that the claims that did not recite such sensors therefore lacked written adequate description.⁵⁶⁸ In reversing the district court, the Federal Circuit noted that the patent application as originally filed "had claims that did not include a requirement of sensors."⁵⁶⁹ The court further explained that "[w]hen a specification is ambiguous about which of several features are stand-alone inventions, the original claims can help resolve the ambiguity."⁵⁷⁰

c. Written Description and Indefiniteness Under §112(f)

In the context of means-plus-function claims, written description often transforms to a question of indefiniteness. The similar distinction from enablement in this context was highlighted in *Biomedino, LLC v. Waters Technologies*

⁵⁶⁴*Netcraft Corp. v. eBay, Inc.*, 549 F.3d 1394, 89 USPQ2d 1234 (Fed. Cir. 2008); see §§8.03.C and 8.04.B above.

⁵⁶⁵762 F.3d 1355, 111 USPQ2d 1917 (Fed. Cir. 2014).

⁵⁶⁶*Id.* at 1357, 111 USPQ2d at 1918.

⁵⁶⁷*Id.*

⁵⁶⁸*Id.* at 1356, 111 USPQ2d at 1917.

⁵⁶⁹*Id.* at 1361, 111 USPQ2d at 1921.

⁵⁷⁰*Id.*

*Corp.*⁵⁷¹ The Federal Circuit considered whether a claim reciting a “control means,” in the context of a claim to a dialysis device, was indefinite for lack of a corresponding structure in the specification. The specification’s relevant drawing of the device included a block labeled “control,” and the description merely stated that the process “may be controlled automatically by known differential pressure, valving and control equipment.”⁵⁷² The court stated that the question before it was whether “sufficient corresponding structure [is] disclosed when the specification simply recites that a claimed function can be performed by known methods or using known equipment where the prior art of record and the testimony of experts suggest that known methods and equipment exist[.]”⁵⁷³ In holding that it was not sufficient, the court made clear the distinction from enablement: “The inquiry is whether one of skill in the art would understand the specification itself to disclose a structure, not simply whether that person would be capable of implementing a structure.”⁵⁷⁴

The particular specification requirements for means-plus-function software claims were highlighted in *Aristocrat Technologies Australia Pty Ltd. v. International Game Technology*.⁵⁷⁵ The patent-in-suit related to a game of chance. The relevant claim recited in part a “*game control means* being arranged to pay a prize when a predetermined combination of symbols is displayed in a predetermined arrangement of symbol positions selected by a player, playing a game, including one and only one symbol position in each column of the array.”⁵⁷⁶

The Federal Circuit considered whether the specification included sufficient structure to render this claim definite. The specification included working examples showing sample game-selection matrices filled out by a player along with sample “winning combinations” of symbols for the filled-out matrices.⁵⁷⁷ The claim itself also had an equation for determining the total number of possible winning combinations.⁵⁷⁸ The court noted that the specification linked the claimed function to structure only by stating that one skilled in the art had the ability “to introduce the methodology on any standard microprocessor base [sic]

⁵⁷¹490 F.3d 946, 83 USPQ2d 1118 (Fed. Cir. 2007).

⁵⁷²490 F.3d at 949, 83 USPQ2d at 1120.

⁵⁷³*Id.* at 951, 83 USPQ2d at 1121.

⁵⁷⁴*Id.* at 953, 83 USPQ2d at 1123. Lest electronics practitioners fret over the result in *Biomedino*, the court’s discussion of other cases seemed to make clear that the bar was not particularly high as long as some structure was disclosed. In discussing a prior case in which it had held a claim reciting a “converting means” invalid, the court suggested that, had the specification merely provided some link indicating that software was the structure that did the converting, it might have been sufficient to salvage the claim. *See id.* at 8 (citing and discussing *Medical Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205 (Fed. Cir. 2003)). The court also noted another case in which that patent had recited an article title that referenced “On-Chip High Voltage Generation in NMOS Integrated Circuits.” *Id.* at 8 (discussing *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374 (Fed. Cir. 1999)). There, the court had found that, although the contents of the article could not supply the necessary structure to support a claim’s recitation of “high voltage generating means,” the article title itself might be found to sufficiently describe the structure the patent holder was linking to the claimed function. *Id.* at 8–9.

⁵⁷⁵521 F.3d 1328, 86 USPQ2d 1235 (Fed. Cir. 2008), *cert. denied*, 129 S. Ct. 754 (2008).

⁵⁷⁶*Id.* at 1331, 86 USPQ2d at 1237 (emphasis added).

⁵⁷⁷*Id.* at 1330–31, 1334–35, 86 USPQ2d at 1237–38, 1240–41.

⁵⁷⁸*Id.* at 1331, 86 USPQ2d at 1238.

gaming machine by means of appropriate programming.”⁵⁷⁹ The court held that the working examples in the specification were insufficient because they did not describe a particular way the computer structure should be programmed to carry out the claimed function: “[T]he description of the embodiments is simply a description of the outcome of the claimed functions, not a description of the structure, i.e., the computer programmed to execute a particular algorithm.”⁵⁸⁰

The court pointed out the distinction from enablement analysis in this context: “Although the examples given in the ’102 patent might enable one of ordinary skill to make and use the invention, they do not recite the particular structure that performs the function and to which the means-plus-function claim is necessarily limited.”⁵⁸¹ In holding that the claim was indefinite, the court made clear the problem was not the level of detail of a disclosed algorithm, but the lack of any algorithm at all.⁵⁸²

One might wonder what level of detail is required to render a means-plus-function computer claim sufficiently definite. *Aristocrat* shows that, at minimum, some sort of algorithm for performing the claim function must be included in the specification. One suspects that a simple flowchart likely would have sufficed. In finding the claim indefinite, the district court had cited that specification’s lack of a “step-by-step process for performing the claimed functions.”⁵⁸³

The Federal Circuit clarified and limited *Aristocrat* in *In Re Katz Interactive Call Processing Patent Litigation*⁵⁸⁴ and held that an algorithm does not necessarily have to be disclosed when the recited functions are basic to any general purpose computer. Specifically, in *Katz*, the Federal Circuit held that a means-plus-function claim can recite general functions such as “processing,” “receiving,” and “storing” without necessarily disclosing an algorithm (e.g., in the form of a flowchart) because these terms “are coextensive with the structure disclosed, i.e., a general purpose processor.”⁵⁸⁵ The court distinguished *Net MoneyIN, Inc. v. VeriSign, Inc.*, in which a claim “recited a particular function not disclosed simply by a reference to a general purpose computer.”⁵⁸⁶ The *Net MoneyIN* claim “involved a credit card authorization system with a ‘means for generating an authorization indicia in response to queries containing a customer account number and amount.’”⁵⁸⁷ However, even if functional claim terms appear on their face to be basic to any general purpose computer, whether an algorithm is required still turns on how those terms are interpreted in view of the intrinsic (and potentially extrinsic) evidence. Thus, in *Katz*, the Federal Circuit remanded for the lower court to interpret the language and, based on that interpretation, to “determine whether the functions recited in those seven contested claims can be performed by a general purpose processor or, instead, constitute

⁵⁷⁹*Id.* at 1334, 86 USPQ2d at 1235–36.

⁵⁸⁰*Id.* at 1334–35, 86 USPQ2d at 1240.

⁵⁸¹*Aristocrat Techs. Austl. Pty. Ltd. v. International Game Tech.*, 521 F.3d 1328, 1336, 86 USPQ2d 1235, 1242 (Fed. Cir. 2008), *cert. denied*, 129 S. Ct. 754 (2008).

⁵⁸²*Id.* at 1337, 86 USPQ2d at 1242–43.

⁵⁸³*Id.* at 1332, 86 USPQ2d at 1238.

⁵⁸⁴639 F.3d 1303, 97 USPQ2d 1737 (Fed. Cir. 2011).

⁵⁸⁵*Id.* at 1316, 97 USPQ2d at 1747.

⁵⁸⁶*Id.*

⁵⁸⁷*Id.*

specific computer-implemented functions as to which corresponding algorithms must be disclosed.”⁵⁸⁸

What functions can escape the algorithm requirement was further refined and limited in *Ergo Licensing, LLC v. Carefusion 303, Inc.*⁵⁸⁹ Although “processing,” “receiving,” and “storing” were held to be basic enough to a general purpose computer in *In re Katz*,⁵⁹⁰ the court in *Ergo Licensing* found that claiming a “control means” “for controlling said adjusting means” required an algorithm.⁵⁹¹ The court distinguished *Katz*, stating: “It is only in the rare circumstances where any general-purpose computer without any special programming can perform the function that an algorithm need not be disclosed.”⁵⁹² In the case before it, the court found that at least some “special programming” would be required to carry out the control function within the context of the claimed infusion system.⁵⁹³ The court imposed this requirement even though the claim element itself did specify at least some structure for the control means. In particular, the claim recited the control means as “having data fields describing metering properties of individual fluid flows.”⁵⁹⁴ One skilled in the art presumably would have been able to fill in the gaps and understand that the control means simply provided the specified values in the data fields to the “adjusting means.” However, because the court apparently found that there was still some “special purpose” programming logic required to carry that minimal step, the court required an explicit algorithm.

Similarly, in *Function Media LLC v. Google, Inc.*,⁵⁹⁵ the Federal Circuit held that even a function as basic to a computer as “transmitting” could not escape the algorithm requirement. The relevant claim recited a “transmitting means” along with a function of “transmitting said presentations to a selected media venue.”⁵⁹⁶ The patent holder pointed to passages in the specification indicating that the relevant software component “automatically transmits.”⁵⁹⁷ However, the court found the disclosure lacking because the cited passages “contain no explanation of how the PGP software performs the transmission function.”⁵⁹⁸

Function Media does not appear to be consistent with *Katz*. The court in *Katz* listed “receiving” as one of the basic functions of a general purpose processor and therefore the additional structure of an algorithm did not need to be disclosed.⁵⁹⁹ If “receiving” is basic to a general purpose processor, then it is hard to imagine why “transmitting” would not also be basic enough to a computer to

⁵⁸⁸*Id.* at 1317, 97 USPQ2d at 1748.

⁵⁸⁹673 F.3d 1361, 102 USPQ2d 1122 (Fed. Cir. 2012).

⁵⁹⁰*In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 97 USPQ2d 1737 (Fed. Cir. 2011).

⁵⁹¹673 F.3d at 1365, 102 USPQ2d at 1124.

⁵⁹²*Id.*, 102 USPQ2d at 1125.

⁵⁹³*Id.*

⁵⁹⁴*Id.*

⁵⁹⁵708 F.3d 1310, 105 USPQ2d 1754 (Fed. Cir. 2013).

⁵⁹⁶708 F.3d at 1317.

⁵⁹⁷*Id.* at 1318.

⁵⁹⁸*Id.*

⁵⁹⁹*See In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316, 97 USPQ2d 1737, 1747 (Fed. Cir. 2011) (stating “processing,” “receiving,” and “storing” were “coextensive” with the disclosed structure of a general purpose processor).

avoid requiring an explicit algorithm. Moreover, one wonders what kind of disclosure would have satisfied the court. From the perspective of the relevant art, it would seem unnecessary and unreasonable to require disclosure of details in a flowchart of, for example, sending data to a TCP/IP layer or some other such standard step in transmitting data. However, one point of distinction may allow at least partial reconciliation of the cases. In *Katz*, the court looked to a general purpose processor disclosed in the specification as being the corresponding structure for performing the recited function.⁶⁰⁰ However, in *Function Media*, the parties agreed that the specification linked a particular software component to the transmitting function.⁶⁰¹ In the court's mind, this apparently put the facts within prior court statements that "[s]imply disclosing software, however, 'without providing some detail about the means to accomplish the function[,] is not enough.'"⁶⁰²

Once a court has determined that an algorithm is required, it is not necessarily a straightforward matter to determine whether the specification in fact includes a sufficient algorithm. Also, depending on the claim language, questions may arise regarding which recited functions require the algorithm. In *Noah Systems, Inc. v. Intuit, Inc.*,⁶⁰³ the court considered a claim to a financial accounting system reciting in part:

means for providing access to said file of said financial accounting computer for said first entity and/or agents of said first entity so that said first entity and/or said agent can perform one or more activities selected from the group consisting of entering, deleting, reviewing, adjusting and processing said data inputs.⁶⁰⁴

The court parsed the functional language of this element into two functions: "(1) providing access to the file; and (2) once access is provided, enabling the performance of delineated operations."⁶⁰⁵ The court found that the specification contained a sufficient algorithm to support the first function. Arguably, the flowchart shown in the patent's figures did not itself disclose the relevant algorithm.⁶⁰⁶ However, the court looked to the flowchart in combination with text in the description and found that the specification made clear "that agents cannot enter, delete, review, adjust or process data inputs within the master ledger unless the passcode is verified," and therefore an algorithm was disclosed for carrying out the first function ("providing access to the file").⁶⁰⁷

However, the court went on to require that the specification also show an algorithm for the function of enabling "the first entity and/or the agent [to]

⁶⁰⁰*Id.*

⁶⁰¹708 F.3d at 1317 ("FM agrees that the recited function here is "transmitting said presentations to a selected media venue of the media venues, [citations omitted], and that the 'means for transmitting' is the PGP, a piece of software.").

⁶⁰²*Id.* at 1318 (citing *Noah Sys., Inc. v. Intuit, Inc.*, 675 F.3d 1302, 102 USPQ2d 1410 (Fed. Cir. 2012)).

⁶⁰³675 F.3d 1302, 102 USPQ2d 1410 (Fed. Cir. 2012).

⁶⁰⁴*Id.* at 1307, 102 USPQ2d at 1412.

⁶⁰⁵*Id.* at 1314, 102 USPQ2d at 1417.

⁶⁰⁶*See id.* at 1305, 102 USPQ2d at 1412 (showing patent's flowchart, which shows issuing passcodes but does not itself clearly show logical steps for using those passcodes to determine access).

⁶⁰⁷*See id.* at 1314, 102 USPQ2d at 1418 (holding that district court erred in finding no algorithm for that function).

perform one or more of the activities selected from the group consisting of entering, deleting, reviewing, adjusting, and processing the data inputs.”⁶⁰⁸ The court held that the specification lacked an algorithm for carrying out this function.⁶⁰⁹ The court went on to further hold that “where a disclosed algorithm supports some, but not all, of the functions associated with a means-plus-function limitation, we treat the specification as if no algorithm has been disclosed at all,”⁶¹⁰ and therefore the court upheld the district court’s summary judgment of invalidity.⁶¹¹

Looking at the claim language in question, one might wonder why the court required that functions associated with the “access means” included both providing access to a file and “enabling the performance” of the various activities including “entering, deleting, revising, adjusting and processing said data inputs.”⁶¹² The claim itself did not recite that the accessing means was “for enabling the performance” of the listed activities. Rather, the claim recited that the “access means” was “for providing access to said file . . . so that” the listed activities could be performed. However, lest one read too much into the court’s holding, it appears that the parties themselves both conceded (or at least did not clearly dispute) what functions were claimed for the “access means.”⁶¹³ One cannot necessarily conclude that the court ruling would have been the same had one of the parties argued that the “access means” function was simply limited to providing access to a file.

Nevertheless, *Noah Systems* does suggest that practitioners should be cautious in reciting too many limitations within a particular “means” element of a claim, lest they all be considered linked functions requiring an algorithm. For example, had the recited activities (“entering, deleting, revising, adjusting and processing said data inputs”) been moved to a separate “wherein clause,” perhaps they could have been effectively de-linked from the pure “access” function of the “access means.”

In light of *Williamson v. Citrix Online, LLC*,⁶¹⁴ claims will likely more readily be found to invoke Section 112(f) even without use of the word “means.” As discussed earlier,⁶¹⁵ that case reduced the presumption against applying Section 112(f) even if the word “means” is absent from the claim. Thus, practitioners need to be even more mindful when claiming software-related inventions that Section 112(f) may apply whether the practitioner intends it to or not. And, if Section 112(f) does apply, the specification will be scrutinized to determine whether sufficient structure is disclosed, e.g., in the form of an algorithm, and, if not, a court may find the claim to be indefinite. In *Williamson*, the “learning control module” claim element recited a function of “coordinating

⁶⁰⁸675 F.3d 1302, 1314, 102 USPQ2d 1410, 1471 (Fed. Cir. 2012).

⁶⁰⁹*Id.* at 1317, 102 USPQ2d at 1419.

⁶¹⁰*Id.* at 1318, 102 USPQ2d at 1421.

⁶¹¹*Id.* at 1319, 102 USPQ2d at 1421.

⁶¹²*See id.* at 1315, 102 USPQ2d at 1418.

⁶¹³*See* 675 F.3d 1302, 1319, 102 USPQ2d 1410, 1421 (Fed. Cir. 2012) (“We are faced with an identifiable function, which all parties concede is claimed, but as to which there is a total absence of structure.”).

⁶¹⁴115 USPQ2d 1105, 1111 (Fed. Cir. 2015).

⁶¹⁵*See* §8.03.A.1.

the operation of the streaming data module.”⁶¹⁶ The court was not willing to rely for the necessary structure on disclosure that arguably implied, but did not explicitly disclose, an algorithm. Specifically, the court found that user interface drawings, including one that showed data feed sources and selection was “not a disclosure of an algorithm corresponding to the claimed functions.”⁶¹⁷

§8.05 Prosecution History

The prosecution history is the record of communications between the patentee and the USPTO during the prosecution of a patent application.⁶¹⁸ There are myriad ways in which the prosecution history can influence the interpretation of the claims. For instance, the cited prior art, and how it is distinguished during the prosecution, may affect claim construction. The reason for amendment of the claims may influence claim interpretation. In fact, any statement made to the USPTO during patent prosecution may affect the interpretation of the claims, even if the Examiner does not rely on the statement. Thus, the patentee must exercise extreme care in creating the record of formal discourse with the USPTO.

A. Prosecution Disclaimer

“Prosecution history estoppel” is a well-known doctrine that provides a limitation on the availability of the doctrine of equivalents. “Prosecution disclaimer” is a similar doctrine, but is distinct in that it applies to interpreting the literal scope of the claim, rather than the scope that might be available under the doctrine of equivalents.

The Federal Circuit has articulated the principle of prosecution disclaimer in several cases, but did so with particular clarity in *Omega Engineering, Inc. v. Raytek Corp.*,⁶¹⁹ stating that where the patentee “has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches, and narrows the ordinary meaning of the claim congruent with the scope of surrender.”⁶²⁰ However, the court emphasized that “for prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.”⁶²¹

Perhaps the most cited case regarding prosecution disclaimer is *Southwall Technologies, Inc. v. Cardinal IG Co.*⁶²² With *Southwall*, the Federal Circuit

⁶¹⁶115 USPQ2d at 1109.

⁶¹⁷*Id.* at 1114–15.

⁶¹⁸The cases herein relate to prosecution history only as it relates to claim interpretation for literal infringement purposes and do not address prosecution history estoppel for doctrine of equivalents purposes.

⁶¹⁹334 F.3d 1314, 1324, 67 USPQ2d 1321, 1326–27 (Fed. Cir. 2003).

⁶²⁰*Id.* at 1325, 67 USPQ2d at 1328.

⁶²¹*Id.* at 1325–26, 47 USPQ2d at 1329.

⁶²²54 F.3d 1570, 34 USPQ2d 1673 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 987 (1995).

reestablished a principle of claim interpretation already implicitly present in prior case law, namely, that amendments and statements made during prosecution can trigger a narrower legal interpretation of a claim term that differs from that term's ordinary meaning. The case is instructive because, although *Omega* articulates that the disclaimer must be "clear and unmistakable," the doctrine can be triggered even if it appears the prosecutor tried to carefully avoid creating a more limiting record than necessary to obtain allowance.

In *Southwall*, the Examiner had rejected the claim in question based on a prior art reference that disclosed a dielectric layer in which "the metal oxide layer is sputter-deposited as a metal and then oxidized[.]"⁶²³ The Examiner had stated "[i]t is unclear whether the 'metal oxide is sputter-deposited' limitation is meant to encompass the situation where the metal oxide is sputter-deposited as a metal and later oxidized."⁶²⁴

In response to the Examiner's rejection, *Southwall* had amended the claim to refer to a "sputter-deposited inorganic metal oxide, compound or salt."⁶²⁵ *Southwall* had made the following comments along with the amendment:

It is believed that the claims as last presented distinguished patentably [over the prior art references cited] but to provide yet additional clear bases for distinction the claims have been amended to specify that the dielectric layer is laid down as a sputter-deposited inorganic metal oxide, compound or salt[.] As pointed out in the specification such layers can be laid down directly by reactive sputtering processes in which the metal is sputtered off of a metal target and directly converted to the oxide, compound or salt by the presence of a suitable gaseous reactant.⁶²⁶

The language of the amendment itself was not narrowing. It merely repeated the originally used phrase *sputter-deposited*. The specification did not clearly limit the term *sputter-deposited* to one-step processes. It referred to "reactive sputtering" as a one-step process, but did not state that *all* sputter deposition was "reactive."⁶²⁷ Moreover, the prior art on which the Examiner had relied had apparently used the term *sputter-deposited* to refer to a two-step process,⁶²⁸ suggesting that the term had an ordinary meaning consistent with *Southwall*'s proposed broader interpretation (covering layers formed by either one-step or two-step processes). However, in its remarks, *Southwall* had focused on the phrase *sputter-deposited* and had characterized use of a one-step process as a feature that distinguished the invention from the prior art. Thus, the court reasonably limited the literal interpretation of the claim phrase *sputter-deposited* to a one-step process.

The Federal Circuit, in *North American Container, Inc. v. Plastipak Packaging, Inc.*,⁶²⁹ confirmed that even preferred embodiments can be disavowed during prosecution. Prosecution disclaimer applied in that case because

⁶²³ 54 F.3d at 1576, 34 USPQ2d at 1677.

⁶²⁴ *Id.*

⁶²⁵ *Id.*

⁶²⁶ *Id.*

⁶²⁷ See U.S. Patent No. 4,799,745 col. 5, lines 31–35.

⁶²⁸ See 54 F.3d at 1576, 34 USPQ2d at 1677 (referring to prior art describing a two-step process).

⁶²⁹ 415 F.3d 1335, 1346, 75 USPQ2d 1545, 1554 (Fed. Cir. 2005). See also *Revolution Eyewear, Inc. v.*

the applicant, to overcome an obviousness rejection, distinguished his invention from prior art that disclosed wall surfaces that were “slightly concave.” The “inescapable consequence” was that the claims could not be construed to cover wall surfaces that were slightly concave.⁶³⁰

On the other hand, in *Sandisk Corp. v. Memorex Products*,⁶³¹ the Federal Circuit reemphasized the role of prosecution disclaimer in promoting the public-notice function of the intrinsic evidence by protecting the public’s reliance on definitive statements made during prosecution.⁶³² Ambiguous disclaimers do not advance the patent’s notice function or justify public reliance, so the court will not use such disclaimers to limit a claim term.⁶³³ Similarly, where disavowals do not directly concern claimed elements, claim scope may be unaffected. Thus, in *Purdue Pharma LP v. Endo Pharmaceuticals, Inc.*,⁶³⁴ the Federal Circuit reversed the trial court’s finding that the doctrine of prosecution disclaimer limited the at-issue drug claims to controlled-release formulations that acceptably controlled pain in 90 percent of patients over a four-fold dosage range. The four-fold dosage range limitation did not appear in the claims. During prosecution, the applicant relied on its “discovery” of the four-fold dosage range to distinguish its claimed formulations from other prior art compounds, and the trial court used this reliance to import the dosage limitation into its claim construction order. The Federal Circuit found that these statements did not amount to a clear disavowal of claim scope, because the range was described as a property or result of administering the claimed invention rather than a necessary feature of the invention itself.⁶³⁵ Likewise, in *Aquatex Industries, Inc. v. Techniche Solutions*,⁶³⁶ the court found that argument-based estoppel does not apply to narrow claims to the composition of claimed material where the subject matter surrendered by the narrowing amendment bore no relation to the claimed element disputed between the parties.

When prosecuting a chain of applications, it is possible in descendant applications to reclaim scope for particular terms restricted in prosecution of the parent. However, to do this, the prior disclaimer must be explicitly disavowed in the later prosecution. In *Hakim v. Cannon Avent Group, PLC*,⁶³⁷ the court construed the word “opening” in a patent for a leak-resistant drinking cup. The patentee had filed claims containing the word “slit” and ultimately made arguments distinguishing certain prior art references in part based on the “slit” of the invention as claimed.⁶³⁸ However, after obtaining a notice of allowance for claims reciting the word “slit,” that applicant then filed a continuation in which

⁶³⁰415 F.3d at 1345, 75 USPQ2d at 1553. See also the cases discussed at §8.02.D.1.b above.

⁶³¹415 F.3d 1278, 75 USPQ2d 1475 (Fed. Cir.), *cert. denied*, 126 S. Ct. 829 (2005).

⁶³²*Id.* at 1287, 75 USPQ2d at 1482.

⁶³³*Id.*

⁶³⁴438 F.3d 1123, 1136, 77 USPQ2d 1767, 1777 (Fed. Cir. 2006).

⁶³⁵*Id.* See also *Research Plastics, Inc. v. Federal Packaging Corp.*, 421 F.3d 1290, 1297, 76 USPQ2d 1133, 1138 (Fed. Cir. 2005) (noting that prosecution narrowed claim scope to avoid prior art).

⁶³⁶419 F.3d 1374, 1382–83, 76 USPQ2d 1213, 1219 (Fed. Cir. 2005). See also *Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1353, 76 USPQ2d 1432, 1439 (Fed. Cir. 2005) (similar).

⁶³⁷479 F.3d 1313, 81 USPQ2d 1900 (Fed. Cir. 2007).

⁶³⁸*Id.* at 1315–16, 81 USPQ2d at 1902.

it replaced the word “slit” with the word “opening.”⁶³⁹ When filing the continuation, the attorney noted that the claims were being broadened.⁶⁴⁰ However, the court held that this was insufficient to remove the effect of the prior prosecution history. The court stated that, “[a]lthough 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.”⁶⁴¹

B. Importance of Carefully Limited Statements Distinguishing Prior Art

The interpretation of the claim in *Cybor Corp. v. FAS Technologies, Inc.*⁶⁴² depended in part on the prior art and the arguments employed to distinguish that art during the prosecution of the patent application. The claim at issue called for a device for filtering and dispensing fluid comprising “[a] first pumping means; [a] second pumping means in fluid communication with said first pumping means; and [a] filtering means.”⁶⁴³

During prosecution of the patent application, the patentee had distinguished a prior art patent on the grounds that it disclosed a separate container for collecting permeate.⁶⁴⁴ The patentee also had argued that the prior art patent failed to disclose or make obvious the precise flexible control provided by the second pump means of the claim.⁶⁴⁵

The accused infringer argued that its device did not infringe because it employed a separate reservoir between its first pump and its second pump.⁶⁴⁶ The court disagreed. It pointed out that the prior art reservoir had the separate capability of venting or discharging excessive liquid, whereas the specification of the patent in suit disclosed a reservoir internal to the second pump that only collected fluid to be dispensed by the second pump.⁶⁴⁷ The court ruled that the patentee, by its statements, had disclaimed only a device with a physically unattached reservoir with independent functionality. Thus, the court narrowly read the patentee’s disclaimer during prosecution as only disclaiming a device with both the asserted structural and functional characteristics of the cited prior art patent. Therefore, by narrowly tailoring the prosecution argument to distinguish particular features of the cited prior art and not others, the patentee preserved the claim’s ultimate breadth for later application to an accused device.

In *Cioffi v. Google, Inc.*,⁶⁴⁸ the interpretation of the claim term “web browser process” also depended in part on the prior art and the arguments employed to

⁶³⁹*Id.* at 1316, 81 USPQ2d at 1902.

⁶⁴⁰*Id.*

⁶⁴¹*Id.* at 1318, 81 USPQ2d at 1904.

⁶⁴²138 F.3d 1448, 46 USPQ2d 1169 (Fed. Cir. 1998).

⁶⁴³*Id.* at 1451, 46 USPQ2d at 1171.

⁶⁴⁴*Id.* at 1457, 46 USPQ2d at 1177.

⁶⁴⁵*Id.*

⁶⁴⁶*Id.*

⁶⁴⁷*Id.* at 1458, 6 USPQ2d at 1178.

⁶⁴⁸632 F. App’x 1013 (Fed. Cir. 2015) (nonprecedential).

distinguish that art during the prosecution of the patent application. The claim at issue called for an intelligent cellular telephone capability with a secure Web browser including a “first web browser process . . . capable of accessing data of a website via the network.”⁶⁴⁹ During prosecution, the patentee had distinguished a prior art patent on the grounds that it did not allow a browser program to be a part of the secure application.⁶⁵⁰ The patentee also had amended the claim term “browser process” to “web browser process” and argued that the prior art patent failed to disclose a “first web browser process capable of accessing data of a website via a network of one or more computers (e.g., the internet).”⁶⁵¹

After a *Markman* hearing, the district court adopted a preliminary construction of “web browser process” as a “process that can access data on websites.”⁶⁵² Then, addressing a statement made by the accused infringer that their understanding of the court’s preliminary construction was that the claim term requires “direct” access to website data, the district court stated that a Web browser process “must be capable of accessing a website without using another web browser process.”⁶⁵³

The Federal Circuit disagreed. While the accused infringer argued that the patentee would not have been able to distinguish its claims from the prior art if its “web browser process” was permitted to indirectly access data on websites through another browser process and pointed to passages from the prosecution history to support their view that the patentee had disclaimed “indirect” access to website data, the patentee offered the alternative view that the key to overcoming the prior art was not that the first “web browser process” could “directly” access website data, but rather that the first “web browser process” could access website data *at all*.⁶⁵⁴ The court ruled that the patentee’s statements made to overcome the prior art did not constitute a clear and unmistakable disavowal of “indirect” access.⁶⁵⁵ Further, the court found that the patentee had offered a reasonable alternative interpretation—that it differentiated the prior art by explaining that its first Web browser process, unlike the prior art’s “secure” process, had access to website data, and nothing in the prosecution history was sufficient to overcome the presumption that the Web browser process alone does not have a “direct” access capability requirement.⁶⁵⁶ Therefore, the lack of a clear and unmistakable disavowal of subject matter in the prosecution argument to distinguish the cited prior art, and a reasonable alternative interpretation of statements made during prosecution, was enough to preserve the patentee’s proffered meaning of the disputed claim term.

⁶⁴⁹*Id.* at 1018.

⁶⁵⁰*Id.* at 1015.

⁶⁵¹*Id.* at 1016.

⁶⁵²*Id.*

⁶⁵³*Id.* at 1017.

⁶⁵⁴*Cioffi v. Google, Inc.*, 632 F. App’x 1013, 1020 (Fed. Cir. 2015) (nonprecedential).

⁶⁵⁵*Id.* at 1021.

⁶⁵⁶*Id.* at 1021–22.

C. Importance of Precision in Amendments to Avoid Prior Art

Although statements in the prosecution history may be used to limit claim breadth, a clarifying amendment may actually help preserve claim breadth that might otherwise be lost. In *Bell & Howell Document Management Products Co. v. Altek Systems*,⁶⁵⁷ the claimed invention was a jacket for holding microfiche strips. The jacket included multiple channels for holding multiple microfiche strips. The channels were formed by joining a series of “*in situ* ribs” to a plastic panel.⁶⁵⁸

Claim 1 called for the *in situ* ribs to be “*integrally bonded* [to the panels] to form a unitary structure *free of adhesive*.”⁶⁵⁹ The issue was whether the term *integrally bonded* required that the molecules of the *in situ* ribs and the panels be intermingled or whether it was sufficient that the two simply be joined without an adhesive, that is, either melted together or simply attached in such a manner that “the rib material itself serves as the adhesive.”⁶⁶⁰

After hearing testimony from expert witnesses, the district court concluded that the term *integrally bonded* required “that the two surfaces unite by an exchange of molecules.”⁶⁶¹ The district court relied on experts who had testified that this was the definition chemists ascribe to *integrally bonded*, and the court further noted that the term could not simply mean free of adhesive “because this would render the claim language ‘free of adhesive’ superfluous.”⁶⁶² Because the district court found that the accused product did not use molecular bonding, it denied the patent holder’s motion for a preliminary injunction.

The Federal Circuit reversed, holding that the district court “erred in relying on expert testimony to construe the expression ‘integrally bonded . . . free of adhesive’ because the intrinsic evidence is clear and unambiguous.”⁶⁶³ The court first looked to the specification and pointed out a passage in which the inventor had described creating a fusion bond rather than a molecular bond; that is, the bond described was created by melting the material of the ribs and allowing it to fuse with the panels.⁶⁶⁴

The court also looked at the prosecution history, noting that the history indicated that the patentee had used the term *integrally bonded* to distinguish its claim over references using paper strips attached to the panels by means of an adhesive layer.⁶⁶⁵ When the Examiner had pointed out to the patentee that the term *integrally bonded* might also include use of an adhesive layer, the patentee had then added the words *free of adhesive*.⁶⁶⁶ The court concluded from

⁶⁵⁷132 F.3d 701, 45 USPQ2d 1034 (Fed. Cir. 1997).

⁶⁵⁸*Id.* at 702–703, 45 USPQ2d at 1035.

⁶⁵⁹*Id.* at 703 n.1, 45 USPQ2d at 1035 (emphasis added by court).

⁶⁶⁰*Id.* at 704, 45 USPQ2d at 1036.

⁶⁶¹*Id.*

⁶⁶²*Id.*

⁶⁶³*Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701, 705, 45 USPQ2d 1034, 1037 (Fed. Cir. 1997).

⁶⁶⁴*Id.* at 706–707, 45 USPQ2d at 1038.

⁶⁶⁵*Id.* at 707, 45 USPQ2d at 1038.

⁶⁶⁶*Id.*

this history that “the expression ‘integrally bonded . . . free of adhesive’ operates as a single limitation. Therefore, the district court’s conclusion that [the patentee’s] proffered claim construction would render the word ‘integrally’ superfluous because being ‘free of adhesive’ is already recited in the claims is not sustainable.”⁶⁶⁷

According to the court, “being ‘integrally bonded’ and ‘free of adhesive’ are mutually reinforcing definitions rather than being superfluous.”⁶⁶⁸ The court concluded that because the specification and prosecution history made the meaning of *integrally bonded* clear, it was error to look to extrinsic evidence, and the district court’s claim interpretation was thus legal error that led to an abuse of discretion in denying the preliminary injunction.

D. Patentee’s Statements Affect Interpretation Even if the Examiner Does Not Rely on Them

A patentee’s statement about a patent claim during prosecution of a patent application may affect the interpretation of the patent claim even if the Patent Examiner clearly did not rely on the statement in allowing the claim to pass to issuance in a patent.

In general, during prosecution the less said about the “invention” the better since the *Omega* threshold for “clear and unmistakable” disclaimer of claim scope can be surprisingly low. In responding to an Examiner’s office action, the applicant for the patent disputed in *Microsoft Corp. v. Multi-Tech Sys., Inc.*⁶⁶⁹ had, before presenting arguments specifically addressing the rejection, offered a summary of the invention. In these preliminary summarizing remarks, the applicant commented that the disclosed communication system “operates over standard telephone line.”⁶⁷⁰ Even though this statement does not appear on its face to exclude the use of a standard telephone line in combination with other networks, the court ruled that this assertion was a definitive statement that the claimed system did not operate over the Internet and ruled that the applicant had disclaimed Internet coverage.⁶⁷¹

The lesson of *Multi-Tech* is that whether or not statements are directly in response to an Examiner’s rejection, anything said during prosecution can potentially be seized on in later litigation as a disclaimer. Therefore, statements should be carefully tailored to the task of responding to the Examiner’s arguments. The less said, the better.

⁶⁶⁷*Id.*

⁶⁶⁸*Id.*

⁶⁶⁹357 F.3d 1340, 69 USPQ2d 1815 (Fed. Cir. 2004), *cert denied*, 543 U.S. 821 (2004).

⁶⁷⁰*Id.* at 1350–51, 69 USPQ2d at 1823.

⁶⁷¹*Id.*

E. Statements in an Information Disclosure Statement

In *Gentry Gallery v. Berklinc Corp.*,⁶⁷² a statement in an information disclosure statement submitted with a set of prior art references served to limit the claim interpretation. The relevant portion of claim 1 provided for “a fixed console disposed in the double reclining seat sofa section between the pair of reclining seats and with the console and reclining seats together comprising a unitary structure.”⁶⁷³

One of the issues was whether the term *console* could include a center seat with a fold-down table top. In the accused device, the pair of recliners were joined by a center seat that could fold down to form a table top that resembled the patentee’s console. However, in a petition to make special, the patentee had made the following comments regarding “Brennan,” a prior art reference disclosing an arrangement of three airplane seats in which the middle seat had a fold-down tray:

The tray units of Brennan ... while disposed between tandem reclining vehicle seats, are freestanding retractable structures that are not, per se, consoles nor do they join the pair of reclining seats as taught by Applicant. Rather Brennan shows a complete center seat with a tray unit in its back.⁶⁷⁴

The court held that this statement precluded a judgment of infringement, stating that “[t]he relevant feature of Berklinc’s sofas, viz., a center seat back that may be folded down to provide a table top between the adjacent recliners, is indistinguishable from the comparable feature in Brennan, a fold-down tray table.”⁶⁷⁵

F. Examiner Statements in the Reasons of Allowance

Although it is generally true that the less said during prosecution the better, the practitioner must also keep in mind that the Examiner’s statements in the prosecution history form part of the intrinsic record. Of particular importance are the Examiner’s stated “Reasons of Allowance.” If these Examiner statements reflect an improper or unduly narrow interpretation of a claim term’s scope, the practitioner might consider responding on the record. At the same time, however, the law on this point, although not entirely settled, seems to presently weigh somewhat in favor of not binding a patentee who is silent in the face of a particular Examiner statement.

In a close case, the Federal Circuit held in *Salazar v. Procter & Gamble Co.*⁶⁷⁶ that the patentee had not disclaimed nylon material as being “elastic”

⁶⁷²134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998).

⁶⁷³*Id.* at 1475, 45 USPQ2d at 1499.

⁶⁷⁴*Id.* at 1477, 45 USPQ2d at 1501.

⁶⁷⁵*Id.*

⁶⁷⁶414 F.3d 1342, 75 USPQ2d 1369 (Fed. Cir. 2005).

even though the Examiner's Reasons of Allowance had referred to a prior art element as using "nylon, which is not considered 'elastic.'"⁶⁷⁷

Note that the *Salazar* opinion did reference an earlier Federal Circuit opinion (*Inverness Medical Switzerland GmbH v. Princeton Biomeditech Corp.*⁶⁷⁸), suggesting that silence in the face of an Examiner's interpretation could be a disclaimer; however, the *Salazar* court dismissed that earlier suggestion as "merely dicta."⁶⁷⁹ Nevertheless, *Salazar* triggered a strong dissent from Judge Bryson in which he argued that although silence should generally not bind the applicant, it should in the present case, where the Examiner's statement "related directly to the ground on which the patent was issued."⁶⁸⁰ Although *Salazar* suggests that silence in the face of clear Examiner statements is not binding, this may be an issue that the Federal Circuit will revisit in the future.

This problem can also arise with Examiners' amendments. In *Schoenhaus v. Genesco, Inc.*, the Federal Circuit found that the patentee surrendered claim scope during prosecution by failing to appeal an Examiner's amendment that included the word "rigid" to avoid prior art.⁶⁸¹

§8.06 Claim Interpretation in *Inter Partes* Review and other Post-Grant Proceedings

In *Cuozzo Speed Techs., LLC v. Lee*, the Supreme Court upheld the USPTO's regulation that the "broadest reasonable interpretation" standard applies to claims considered during *inter partes* review (IPR).⁶⁸² Specifically, the Court held that, in the Leahy-Smith America Invents Act, Congress had left a "gap" regarding the appropriate claim interpretation standard for IPR and had therefore delegated rulemaking authority on that point to the USPTO.⁶⁸³ The Court then held that the USPTO's implementation of the broadest reasonable interpretation standard was a reasonable exercise of that rule making authority.⁶⁸⁴

The USPTO's implementation of broadest reasonable interpretation in IPR, now blessed by the Supreme Court, creates the awkward, if not absurd, result that the same two parties can fight a dispute over the same claim language, but that claim language will be interpreted differently depending on whether the parties' arguments regarding the claim are being considered by the Patent Trial and Appeal Board or by a district court. Moreover, because IPR before the Board has for now, as a practical matter, replaced proceedings in district court for litigating patent validity, claims are now effectively interpreted differently for validity purposes than for infringement purposes.

⁶⁷⁷*Id.* at 1343, 75UPSQ2d at 1370.

⁶⁷⁸309 F.3d 1365, 1372 (Fed. Cir. 2002).

⁶⁷⁹*Id.* at 1346, 75 UPSQ2d at 1372; *see also* *Inverness*, 309 F.3d at 1373.

⁶⁸⁰*Id.* at 1348, 75 UPSQ2d at 1374 (Bryson, J., dissenting).

⁶⁸¹440 F.3d 1354, 1358–59, 78 USPQ2d 1252, 1255–56 (Fed. Cir. 2006).

⁶⁸²136 S. Ct. 2131, 119 USPQ2d 1065 (2016).

⁶⁸³136 S. Ct. at 2144.

⁶⁸⁴*Id.*

The Federal Circuit has made clear that the different standards are meaningful and will, in particular cases, lead to different results. In *PPC Broadband, Inc. v. Corning Optical Communications RF, LLC*⁶⁸⁵ (*PPC I*), the court considered the Board's interpretation of the claim term "continuity" in the context of a coaxial cable connector claim reciting a "continuity member . . . contacting the post and the nut so that the continue member extends electrical grounding continuity through the post and the nut. . . ."⁶⁸⁶ The court noted that, in the case before it, the choice of claim construction standards was "outcome determinative."⁶⁸⁷ The court stated that, if the *Phillips* ordinary meaning standard applied, the claimed "continuity member" would require "consistent or continuous contact with the coupler/nut and the post to establish an electrical connection."⁶⁸⁸ The court noted that several places in the specification supported this interpretation.⁶⁸⁹ However, the court also noted that it is possible for the word "continuity" or "continuous" to refer to something that is uninterrupted in space rather than in time.⁶⁹⁰ And the court observed that at least one passage in the description seemed to be referring to spatial continuity, describing that that the "continuity" member "extends electrical grounding continuity through the post and the nut."⁶⁹¹ Thus, the court held that, under broadest reasonable interpretation, the claim language did not necessarily require continuity in time.⁶⁹² The court seemed to reach this result reluctantly and it pointedly observed that it upheld the Board's construction despite the fact that it was "not the correct construction under *Phillips*."⁶⁹³ Nevertheless, based on its application of the broadest reasonable interpretation standard, the court upheld the Board's invalidity findings with respect to the relevant claim.⁶⁹⁴

PPC I highlights that the broadest reasonable interpretation standard can result in claim scope that seems clearly broader than the patentee intended based on the language of the claims read in view of the specification. The result in *PPC I*, while not clearly wrong as a legal matter, seems particularly egregious because the patented invention aimed to solve the very problem that was present in the allegedly invalidating prior art, i.e., a lack of continuous grounding in coaxial cables.⁶⁹⁵

However, in other cases, the Federal Circuit has emphasized the "reasonable" in broadest reasonable interpretation and limited overreaching by a Board

⁶⁸⁵815 F.3d 734, 118 USPQ2d 1062 (Fed. Cir. 2016).

⁶⁸⁶*Id.* at 739, 188 USPQ2d at 1064.

⁶⁸⁷*Id.* at 741, 188 USPQ2d at 1066.

⁶⁸⁸*Id.* at 742, 188 USPQ2d at 1067.

⁶⁸⁹*See id.* at 741, 188 USPQ2d at 1066 ("Furthermore, the specification discloses in multiple places that the continuity member should maintain a consistent and continuous connection.")

⁶⁹⁰*PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC (PPC I)*, 815 F.3d 734, 742, 118 USPQ2d 1062, 1067 (Fed. Cir. 2016).

⁶⁹¹*Id.*

⁶⁹²*Id.* at 743, 188 UPSQ2d at 1067.

⁶⁹³*Id.*

⁶⁹⁴*Id.* at 747, 188 USPQ2d at 1070.

⁶⁹⁵U.S. Patent No. 8,287,320 col. 1, lines 44–46, 51 ("Moreover, typical component elements and structures of common connectors may permit loss of ground and discontinuity of the electromagnetic shielding. . . . Hence a need exists for an improved connector having structural component elements including for ensuring ground continuity. . . .")

that has, to date, zealously invalidated patent claims in IPR proceedings. In fact, the very same panel that ruled in *PPC I* found, in a sister case between the same parties (*PPC II*), that the Board's construction of the phrase "reside around" was unreasonable.⁶⁹⁶ The relevant claim recited "a continuity member . . . positioned to reside around an external portion of the [coaxial cable] connector body."⁶⁹⁷ The Board had interpreted "reside around" to mean simply "in the immediate vicinity of; near" rather than limiting it to "encircle or surround" as proposed by the patent owner.⁶⁹⁸ The Federal Circuit commented that "[t]he Board seems to have arrived at its construction by referencing the dictionaries cited by the parties and simply selecting the broadest definition therein."⁶⁹⁹ The court found this approach to be flawed because it "fails to account for how the claims themselves and the specification inform the ordinarily skilled artisan as to precisely which ordinary definition the patentee was using."⁷⁰⁰ The court noted that "[t]he fact that 'around' has multiple dictionary meanings does not mean that all of these meanings are reasonable interpretations in light of this specification." Given the context of the technology, coaxial cables, which involves components that have "a geometry that is symmetrical around the inner electrical conductor," the court found it odd to construe "reside around" in a manner that ignored that context.⁷⁰¹ Moreover, the court found that the specification strongly supported that the phrase meant "encircle or surround," noting that every one of the seven occurrences of "around" in the specification described "encircling or surrounding."⁷⁰²

The Federal Circuit has also emphasized "reasonable" to set the outer bounds of the "broadest reasonable interpretation" standard in the context of appeals from Board rulings in *ex parte* reexamination proceedings. In *In re Man Machine Interface Technologies LLC*,⁷⁰³ the court reviewed the Board's construction of "adapted to be held by the human hand" in a claim to a remote control device.⁷⁰⁴ The Board had upheld the Examiner's rejections based in part on a claim construction that construed "adapted to be held by the human hand" to not preclude "a deskbound mouse."⁷⁰⁵ The court rejected "the Board's unreasonably broad construction" and concluded that the desk-bound mouse of the prior art could not meet the claim's limitations.⁷⁰⁶ Among other things, the court noted that the specification, including the Summary of the Invention, specifically distinguished its remote control device from a desk-bound mouse, whose position is limited by being placed on the desk.⁷⁰⁷

⁶⁹⁶*PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC (PPC II)*, 815 F.3d 747, 756, 118 USPQ2d 1056, 1061 (Fed. Cir. 2016).

⁶⁹⁷*Id.* at 751, 118 USPQ2d at 1058.

⁶⁹⁸*Id.* at 751–52, 118 USPQ2d at 1058.

⁶⁹⁹*Id.* at 752, 118 USPQ2d at 1058.

⁷⁰⁰*Id.*

⁷⁰¹*Id.* at 752, 118 USPQ2d at 1059.

⁷⁰²*PPC II*, 815 F.3d at 753, 118 USPQ2d at 1059.

⁷⁰³822 F.3d 1282, 118 USPQ2d 1615 (Fed. Cir. 2016).

⁷⁰⁴822 F.3d at 1284, 118 USPQ2d at 1617.

⁷⁰⁵822 F.3d at 1285, 118 USPQ2d at 1617.

⁷⁰⁶822 F.3d at 1286, 118 USPQ2d at 1619.

⁷⁰⁷822 F.3d at 1286, 118 USPQ2d at 1618.

With IPR proceedings as the new default procedure for challenging validity based on prior art, patent practitioners face an especially daunting challenge in crafting the claims and the specification. Infringement will be judged in district court, which applies an “ordinary meaning” standard in view of the specification and prosecution history. The claims, background, summary, detailed description, and prosecution history will be scrutinized by accused infringers and district courts for any statements which might narrow the claims in a manner that avoids infringement. At the same time, for invalidity purposes, the Board in an IPR will read claims broadly and err on the side of reading them on the prior art if such a reading is at all “reasonable.” Therefore, the practitioner must craft the patent application to support both the breadth needed to capture infringing devices within the legitimate scope of the claims, and the narrowness needed to avoid the prior art.

§8.07 Conclusion

As stated at the outset, the strength of a patent is ultimately measured by a court during litigation. Although negotiating an application through the USPTO is the practitioner’s first and most immediate challenge, the practitioner must draft the application so that the issued patent will retain breadth sufficient to give the inventor rights commensurate with the invention’s true scope.

Because the potentially infringing products with which the patent might ultimately do battle are generally unknown to the practitioner at the time of drafting, the practitioner must rely on a refined and thorough sense of imagination. The practitioner should consider the potential judicial interpretations of each claim term. Even seemingly innocent claim words such as *when*, *to*, or *at* may become the focus of a litigation dispute.

The court will always consider the specification when interpreting the claim. Thus, the practitioner must do more than simply write the specification to serve the narrow purposes of enablement and best mode. The practitioner must use the specification to imbue the claim terms with breadth consistent with the scope of the invention. The practitioner must not rely only on boilerplate statements that disclaim any intent to limit the invention to the disclosed embodiments. Rather, the practitioner must endeavor to suggest the intended breadth of the invention throughout the written description. With the advent of IPR, and the Board’s current mission to read claims broadly for purposes of invalidity analysis, practitioners must balance the need to achieve broad claims for infringement purposes with the need to provide a basis for limiting a claim’s broadest reasonable interpretation so as to survive post-grant prior art challenges in the USPTO.

The claims, written description, and prosecution history must be viewed as intimately interrelated. Each must be crafted to support claim interpretations that give the patentee’s invention the scope of protection it deserves.