

**United States Court of Appeals
for the Federal Circuit**

CONTINENTAL CIRCUITS LLC,
Plaintiff-Appellant

v.

**INTEL CORPORATION, IBIDEN U.S.A.
CORPORATION, IBIDEN COMPANY LIMITED,**
Defendants-Appellees

2018-1076

Appeal from the United States District Court for the District of Arizona in No. 2:16-cv-02026-DGC, Judge David G. Campbell.

Decided: February 8, 2019

JEFFREY A. LAMKEN, MoloLamken LLP, Washington, DC, argued for plaintiff-appellant. Also represented by MICHAEL GREGORY PATTILLO, JR., BENJAMIN THOMAS SIROLLY; BRADLEY WAYNE CALDWELL, JASON DODD CASSADY, JOHN AUSTIN CURRY, WARREN JOSEPH MCCARTY, III, Caldwell Cassady & Curry, Dallas, TX.

JOSEPH J. MUELLER, Wilmer Cutler Pickering Hale and Dorr LLP, Boston, MA, argued for defendants-appellees. Also represented by KEVIN GOLDMAN, RICHARD WELLS O'NEILL, SARAH B. PETTY, KEVIN SCOTT PRUSSIA; NINA S.

TALLON, Washington, DC. Defendant-appellee Intel Corporation also represented by MATTHEW JOHN HULT, Intel Corporation, Santa Clara, CA.

Before LOURIE, LINN, and TARANTO, *Circuit Judges*.

LOURIE, *Circuit Judge*.

Continental Circuits LLC appeals from the judgment of the United States District Court for the District of Arizona of noninfringement of the asserted claims of U.S. Patents 7,501,582 (“the ’582 patent”); 8,278,560 (“the ’560 patent”); 8,581,105 (“the ’105 patent”); and 9,374,912 (“the ’912 patent”). See Final Judgment, *Cont’l Circuits LLC v. Intel Corp.*, No. 16-2026 (D. Ariz. Sept. 12, 2017), ECF No. 273. The parties stipulated to a judgment of noninfringement, see Stipulation & Joint Motion, *Cont’l Circuits LLC v. Intel Corp.*, No. 16-2026 (D. Ariz. Sept. 7, 2017), ECF No. 266, based on the district court’s claim construction of certain claim terms, see *Cont’l Circuits LLC v. Intel Corp.*, No. 16-2026, 2017 WL 3478659 (D. Ariz. Aug. 9, 2017) (“*Claim Construction Order*”). Because we conclude that the district court erred in its claim construction, we vacate the judgment of noninfringement and remand for further proceedings.

BACKGROUND

Continental owns the ’582, ’560, ’105, and ’912 patents, which are directed to a “multilayer electrical device . . . having a tooth structure” and methods for making the same. See, e.g., ’582 patent Abstract. The four patents at issue, which have since expired, are continuations of one another and thus share substantially the same

specification.¹ According to the patents, multilayer electric devices “suffer from delamination, blistering, and other reliability problems,” especially when “subjected to thermal stress.” *Id.* col. 1 ll. 30–32. The inventions of the patents purport to solve this problem by “forming a unique surface structure . . . comprised of teeth that are preferably angled or hooked like fangs or canine teeth to enable one layer to mechanically grip a second layer.” *Id.* col. 1 ll. 52–57. The specification further explains that the increased surface area of the teeth improves the adhesion of the layers to one another. *See id.* col 1 l. 58–col. 2 l. 6.

The patents additionally “theorize[] . . . that the best methods for producing the teeth [are] to use non-homogenous materials and/or techniques . . . such that slowed and/or repeated etching will form teeth instead of a uniform etch.” *Id.* col. 2 ll. 24–29. The specification then explains that “[o]ne technique for forming the teeth is . . . the swell and etch or desmear process, except that contrary to all known teachings in the prior art . . . a ‘double desmear process’ is utilized.” *Id.* col. 5 ll. 40–44. It continues by explaining that “the peel strength produced in accordance with the present invention is greater than the peel [sic] strength produced by the desmear process of the prior art, i.e., a single pass desmear process.” *Id.* col. 7 ll. 3–6. The specification then discloses that “[i]n stark contrast with the etch and swell process of the known prior art . . . a second pass through the process . . . is used” because it “make[s] use of [the] non-homogenaities [sic] in bringing about a formation of the teeth.” *Id.* col. 9 ll. 1–5.

Continental sued Intel Corp.; its supplier, Ividen U.S.A. Corp.; and Ividen U.S.A. Corp.’s parent company, Ividen Co. Ltd. (collectively, “Intel”), for patent

¹ In this opinion, citations are only to the ’582 patent specification because the specifications of the four patents are substantially identical.

infringement in the District of Arizona. Continental asserted claims 85, 87, 89, 92, 94, 95, 100, 109, 114, and 122 of the '582 patent; claims 14 and 19 of the '560 patent; claims 13, 53, 71, 80, 82, 86, 88, 91, 95, 97, 101, and 103 of the '105 patent; and claims 2, 3, 18–20, and 26–28 of the '912 patent. All of the asserted claims include claim limitations regarding the “surface,” “removal,” or “etching” of “a dielectric material” or “epoxy,” which the district court construed together as the “Category 1 Terms,” and their construction depends on resolving whether they should be limited to a repeated desmear process. *See Claim Construction Order*, 2017 WL 3478659, at *2; *see also* J.A. 1879–89.²

Claim 100 of the '582 patent is illustrative of a claim that includes a “surface” claim term and reads as follows:

100. An electrical device including:

a conductive layer built up so as to fill undercuttings with respect to a *surface of a dielectric material* so as to form teeth in cavities, a plurality of the undercuttings being obtuse to the surface, wherein

² The Category 1 Terms include “surface,” “removal,” and “etching” related claim terms:

- The “surface” claim terms are “surface of a dielectric material,” “surface of a layer of a dielectric material,” and “a dielectric material comprising a surface.”
- The “removal” claim terms are “removal of a portion of the dielectric material,” and “removal of some of the dielectric material.”
- The “etching” claim terms are “etching [of] the epoxy” and “etching [of] the dielectric material.”

The district court construed all of these claim terms together.

the conductive layer is a portion of circuitry of an electrical device, and a plurality of the teeth are within the range of 1 tenth of a mil deep to 1.75 tenths of a mil deep, and

wherein at least one of the cavities includes an upgrade slope with respect to the *surface of the dielectric material*, and one of the teeth engages a portion of the dielectric material at the slope.

'582 patent col. 18 ll. 48–59 (emphases added).

Claim 114 of the '582 patent is representative of a claim that includes a “removal” claim term and reads as follows:

114. An electrical device including:

a dielectric material having a surface remaining from *removal of a portion of the dielectric material*; and

means for mechanically gripping a conductive layer to the surface of the dielectric material so that the conductive layer is burrowed in and under the top surface of the dielectric material, wherein the conductive layer forms a portion of circuitry of an electrical device, wherein the means for mechanically gripping is comprised of teeth, and a plurality of the teeth are within the range of 1 tenth of a mil deep to 1.75 tenths of a mil deep, and

wherein at least one of the cavities includes an upgrade slope with respect to the surface of the dielectric material, and one of the teeth engages a portion of the dielectric material at the slope.

Id. col. 20 ll. 30–44 (emphasis added).

Claim 14 of the '560 patent is representative of a claim that includes an “etching” claim term and reads as follows:

14. An article of manufacture, the article comprising:

an epoxy dielectric material delivered with solid content sufficient that *etching the epoxy* forms a non-uniformly roughened surface comprising cavities located in and underneath a surface of the dielectric material, and sufficient that the *etching of the epoxy* uses non-homogeneity with the solid content to bring about formation of the non-uniformly roughened surface with at least some of the cavities having a first cross-sectional distance proximate the initial surface and a substantially greater cross-sectional distance distant from the initial surface, and

a conductive material, whereby the *etching of the epoxy* forms the cavities, and a portion of the conductive material in the cavities thereby forming teeth in the cavities, wherein the etching of the non-homogeneous composition forms the cavities, and wherein the conductive material forms a portion of circuitry of an electrical device.

'560 patent col. 10 ll. 7–25 (emphases added).

Aside from the “device” and “article of manufacture” claims recited above, the asserted claims also include process and product-by-process claims. Claims 2 and 18 of the '912 patent are illustrative and read as follows:

2. A process of making an article of manufacture, the process comprising:

implementing a circuit design for an electrical device by coupling a dielectric material delivered with solid content, the dielectric material and the solid content being non-homogeneous materials, sufficient that etching the dielectric material forms a non-uniformly roughened surface comprising cavities located in, and underneath a surface of, the dielectric material, and sufficient that the etching of the dielectric material uses non-homogeneity with

the solid content in bringing about formation of the non-uniformly roughened surface with at least some of the cavities having a first cross-sectional distance proximate the surface and a greater cross-sectional distance distant from the surface, with

a conductive material, whereby the etching of the dielectric material forms the cavities, and a portion of the conductive material in the cavities thereby forming teeth in the cavities, wherein the etching of the non-homogeneous composition forms the cavities, in circuitry of the electrical device.

...

18. A product produced by the process of claim 2.

'912 patent col. 9 l. 58–col. 10 l. 11, col. 11 l. 14.

The district court construed the Category 1 Terms to require that the “surface,” “removal,” or “etching” of the dielectric material be “*produced by a repeated desmear process.*” See *Claim Construction Order*, 2017 WL 3478659, at *2–3 (emphasis added). The district court concluded that Intel had “met the exacting standard required” to read a limitation into the claims. *Id.* at *3. Specifically, the district court found that the specification not only “repeatedly distinguish[ed] the process covered by the patent from the prior art and its use of a ‘single desmear process,’” *id.* at *4, but also characterized “the present invention” as using a repeated desmear process, *see id.* at *5.

Additionally, the district court found that the prosecution history corroborated its construction. The examiner made indefiniteness and written description rejections during the prosecution of the '560 patent of the claim limitation “etching of the epoxy uses non-homogeneity with the solid content,” which is used to bring about formation of the non-uniformly roughened surface of the angular tooth-shaped cavities. See J.A. 2122–23. In response to the office action, Continental submitted an expert declaration

explaining that the “etching” process disclosed in the specification uses “this known Probelec XB[]7081 resin” and “two separate swell and etch steps” as “a technique which forms the teeth.” J.A. 2074; *see also* J.A. 2068–69. The district court found that the expert declaration “clearly describe[d] the patented method as involving two etching processes.” *Claim Construction Order*, 2017 WL 3478659, at *6. Moreover, the district court observed that extrinsic documents produced by the inventors state the use of a “two pass desmear cycle” and that “we use a double pass desmear to achieve the tooth structure.” *Id.* (quoting J.A. 3321, 3324). The court acknowledged that those statements were “not reliable enough to be dispositive,” but found they “provide[d] helpful corroboration.” *Id.*

Based on the court’s claim construction and the fact that all of the asserted claims involve the question whether they should be limited to a repeated desmear process, the parties stipulated to noninfringement and the court entered judgment accordingly. On appeal, Continental challenges only the district court’s claim construction. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

Claim construction is ultimately a question of law that we review *de novo*. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). Any subsidiary factual findings based on extrinsic evidence “must be reviewed for clear error on appeal.” *Id.* But “when the district court reviews only evidence intrinsic to the patent (the patent claims and specifications, along with the patent’s prosecution history), the judge’s determination will amount solely to a determination of law,” which we review *de novo*. *Id.*

Continental argues that the district court erred in construing the Category 1 Terms to require that the dielectric

material be “produced by a repeated desmear process.”³ *See Claim Construction Order*, 2017 WL 3478659, at *2–3. Continental contends that the plain language of the claims does not include a repeated desmear process. Also, according to Continental, the specification does not clearly and unmistakably limit the claims to require a repeated desmear process. Although Continental acknowledges that the preferred embodiment discusses using a repeated desmear process, Continental argues that it is not proper to limit the claims to the preferred embodiment. Continental next contends that the expert declaration cited by the district court, which applicants invoked to respond to indefiniteness and written description rejections by the examiner, does not include a clear and unmistakable disavowal for prosecution disclaimer to attach. Finally, Continental argues that the inventor documents cited by the district court merely reflect the inventors practicing the preferred embodiment and thus lend no support for the district court’s construction.

Intel responds that it was proper for the district court to limit the claims to a repeated desmear process because the patentees repeatedly disparaged and disavowed the single-pass desmear process and expressly defined “the present invention” as requiring a repeated desmear

³ We note that the specification discusses use of a “*double* desmear process” while the district court construed the claims to require a “*repeated* desmear process.” *Compare generally* ’582 patent, *with Claim Construction Order*, 2017 WL 3478659, at *2–3 (emphasis added). The parties do not argue this difference is material, and because we ultimately do not agree with the district court that the claim limitation should have been read into the claims, the difference in wording does not impact the outcome. Thus, for purposes of this opinion, we assume the terms are interchangeable.

process. Intel also argues that the prosecution history further supports reading in this limitation because the expert declaration submitted during prosecution reiterated that “the claimed invention is directed to surface roughening performed by ‘two separate’ passes of a desmear process.” Appellee’s Br. 29. Furthermore, Intel contends that documents authored by the inventors demonstrate an inability to obtain the desired levels of roughening using a single-pass desmear process, which confirms that their alleged invention was limited to a repeated desmear process.

We agree with Continental that the district court erred in limiting the claims to require a repeated desmear process. In construing claims, district courts give claims their ordinary and customary meaning, which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). “[B]ecause patentees frequently use terms idiosyncratically, the court looks to” sources including “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.* at 1314 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

From this list of sources, “the claims themselves provide substantial guidance as to the meaning of particular claim terms.” *Id.* However, the claims “do not stand alone.” *Id.* at 1315. They are part of “‘a fully integrated written instrument,’ consisting principally of a specification that concludes with the claims,” and must therefore “be read in view of the specification.” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 978–79 (Fed. Cir. 1995)). Accordingly, the specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the

meaning of a disputed term.” *Id.* (quoting *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

“In addition to consulting the specification, we have held that a court ‘should also consider the patent’s prosecution history, if it is in evidence.’” *Id.* at 1317 (quoting *Markman*, 52 F.3d at 980). “Like the specification, the prosecution history provides evidence of how the [United States Patent and Trademark Office (“PTO”)] and the inventor understood the patent.” *Id.* We have cautioned, however, that “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.*

With these principles in mind, we turn to the construction of the Category 1 Terms. Beginning with the claim language, we first note that none of the asserted claims actually recite a “repeated desmear process.” *Accord Claim Construction Order*, 2017 WL 3478659, at *2. Thus, at least based on the plain language, the claims are not limited to a repeated desmear process.

We continue our analysis by reading the claims “in view of the specification, of which they are a part.” *Phillips*, 415 F.3d at 1315 (quoting *Markman*, 52 F.3d at 979). Our case law has recognized that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.” *Id.* at 1316. When the patentee acts as its own lexicographer, that definition governs. *See id.* “To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term’ other than its plain and ordinary meaning.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). We have also found instances where “the specification may reveal an intentional disclaimer, or

disavowal, of claim scope.” *Phillips*, 415 F.3d at 1316. In those situations, it is again the inventor’s disavowal that is dispositive of the claim construction. *See id.* “To disavow claim scope, the specification must contain ‘expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.’” *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1306 (Fed. Cir. 2011) (quoting *Epistar Corp. v. Int’l Trade Comm’n*, 566 F.3d 1321, 1335 (Fed. Cir. 2009)).

We acknowledge the difficulty in drawing the “fine line between construing the claims in light of the specification and improperly importing a limitation from the specification into the claims.” *Id.* at 1305. To avoid improperly importing limitations into the claims, “it is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so.” *Phillips*, 415 F.3d at 1323.

Based on our review of the specification, none of the statements relied upon by the district court rises to the level of “a clear and unmistakable disclaimer.” *Thorner*, 669 F.3d at 1367. The specification begins by explaining that the invention is an “electrical device” with teeth. *See* ’582 patent col. 1 ll. 13–15, col. 1 l. 50–col. 2 l. 6. The specification then explains that “[o]ne technique for forming the teeth,” which is “contrary to all known teachings in the prior art” is the double desmear process. *See id.* col. 5 ll. 40–44 (emphasis added). Additionally, the disclosures provide that “the present invention *can be carried out* by a new use” of a dielectric material called Probelec XB 7081. *See id.* col. 6 ll. 41–48 (emphasis added). And within this context, “[f]or example, the present invention differs from the common desmear process in that sub-steps in the desmear process are repeated as *a way* of forming the teeth.” *Id.* col. 8 ll. 49–52 (emphases added). This, the patent explains, is “[i]n stark contrast with the etch and swell process of the known prior art.” *Id.* col. 9 ll. 1–2. The specification also

notes that the peel strength produced by the new use of Probelec XB 7081 is greater than that of “the prior art, i.e., a single pass desmear process.” *See id.* col. 7 ll. 3–9.

Overall, those statements simply describe how to make the claimed invention using the preferred Probelec XB 7081 in a “new” way that is different from the prior art process and are not statements clearly limiting the claimed “electrical device” to require a repeated desmear process. Heeding the warning in *Phillips* to keep in mind that a goal of the specification is to provide a best mode to make and use an invention, phrases such as “one technique,” “can be carried out,” and “a way” indicate that using Probelec XB 7081 is only one method for making the invention and does not automatically lead to finding a clear disavowal of claim scope. *See Phillips*, 415 F.3d at 1323. We have also “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Id.*; *see also Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (“Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using ‘words or expressions of manifest exclusion or restriction.’” (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002))). Therefore, we conclude that disclosing only the Probelec XB 7081 embodiment, without more, does not result in a clear disavowal of claim scope.

Additionally, distinguishing the double desmear process as “contrary to” or “in stark contrast” with the single desmear process, which again appears within the context of disclosures of the preferred embodiment, are not clear and unmistakable limiting statements. We have held that “[m]ere criticism of a particular embodiment . . . is not sufficient to rise to the level of clear disavowal.” *Thorner*, 669 F.3d at 1366. Thus, comparing and contrasting the present

technique to that of the prior art does not “rise to the level of [a] clear disavowal” of claim scope. *Id.*

Similarly, the descriptions of “the present invention,” which also appear within the discussion of the preferred embodiment, are not limiting here. While descriptions “of the ‘present invention’ as a whole” could limit the scope of the invention, *see Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007), “use of the phrase ‘present invention’ or ‘this invention’ is not always so limiting, such as where the references . . . are not uniform, or where other portions of the intrinsic evidence do not support applying the limitation to the entire patent,” *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1136–37 (Fed. Cir. 2011). In this case, the statements that “*the present invention* can be carried out by a new use” of a dielectric material called Probelec XB 7081, *see* ’582 patent col. 6 ll. 41–48 (emphasis added), and “*the present invention* differs from the common desmear process in that sub-steps in the desmear process are repeated as *a way* of forming the teeth,” *id.* col. 8 ll. 49–52 (emphases added), do not characterize the present invention “as a whole,” *Verizon*, 503 F.3d at 1308. Instead, they disclose one way to carry out the present invention using Probelec XB 7081, and references to “the present invention” occur within this context.

Moreover, the use of “the present invention” throughout the specification does not uniformly require use of a repeated desmear process. *See Absolute Software*, 659 F.3d at 1136–37. In certain portions of the specification, such as the summary, the invention is described with respect to its “unique surface structure,” ’582 patent col. 1 l. 52, without any requirement that the invention must encompass the repeated desmear process. In fact, “desmear” does not appear in the summary of the invention section at all. *See id.* col. 1 l. 48–col. 2 l. 29. In light of this, it is difficult to say that the present invention “as a whole,” *Verizon*, 503 F.3d at 1308, necessarily includes the repeated desmear

process. Thus, absent “clear and unmistakable” language suggesting otherwise, we conclude that the aforementioned statements do not meet the “exacting” standard required to limit the scope of the claims to a repeated desmear process. See *Thorner*, 669 F.3d at 1366–67.

The district court also found that the prosecution history further supported its claim construction. Similar to disclaimers in the specification, “[t]o operate as a disclaimer, the statement in the prosecution history must be clear and unambiguous, and constitute a clear disavowal of scope.” *Verizon*, 503 F.3d at 1306. We do not agree that such a clear disavowal exists in this prosecution history. The expert declaration cited by the district court, which the applicants relied on to respond to both the indefiniteness and the written description rejections, explained that the written description disclosed “a technique which forms the teeth” by “performing two separate swell and etch steps.” J.A. 2074 ¶ 7 (citing ’582 patent col. 9 ll. 1–9) (emphasis added). The district court found this statement “clearly describe[d] the patented method as involving two etching processes.” See *Claim Construction Order*, 2017 WL 3478659, at *6. But clearly describing a particular claim term to overcome an indefiniteness or written description rejection is not the same as clearly disavowing claim scope. Moreover, the statements in the expert declaration merely explain one technique for forming teeth and do not amount to clear statements of disavowal. We therefore conclude that the cited statements in the prosecution history do not clearly and unmistakably disavow any claim scope.

Before we conclude our analysis of the intrinsic evidence, we note that in order to read a process limitation into a product claim, it must meet one more criterion. Generally, “[a] novel product that meets the criteria of patentability is not limited to the process by which it was made.” *Vanguard Prods. Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372–73 (Fed. Cir. 2000). “However, process steps can be treated as part of a product claim if the patentee has

made clear that the process steps are an essential part of the claimed invention.” *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1375 (Fed. Cir. 2007). For the same reasons that the statements relied upon by the district court do not show that the patentee clearly and unmistakably disavowed claim scope, they also do not make clear that the repeated desmear process is “an essential part” of the claimed electrical device having a tooth structure. *Id.* Far from being essential, the statements from the intrinsic evidence merely indicate a preference for using Probelec XB 7081 and include comparisons with the prior art techniques. Because the patentee has not “made clear” that the repeated desmear process is “an essential part of the claimed invention,” *id.*, it was improper for the district court to read this process limitation into the product claims for this additional reason.

Finally, secondary to the intrinsic evidence, “we have also authorized district courts to rely on extrinsic evidence, which ‘consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.’” *Phillips*, 415 F.3d at 1317 (quoting *Markman*, 52 F.3d at 980). But “while extrinsic evidence ‘can shed useful light on the relevant art,’” *id.* (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)), it is “less significant than the intrinsic record in determining the ‘legally operative meaning of disputed claim language,’” *C.R. Bard*, 388 F.3d at 862 (quoting *Vanderlande Indus. Nederland BV v. Int’l Trade Comm’n*, 366 F.3d 1311, 1318 (Fed. Cir. 2004)); *see also Phillips*, 415 F.3d at 1317. Generally, we have viewed extrinsic evidence as “less reliable” than intrinsic evidence. *Phillips*, 415 F.3d at 1318.

Here, the district court acknowledged that the extrinsic evidence, which consisted of documents authored by the inventors, was “not reliable enough to be dispositive,” but “provide[d] helpful corroboration.” *See Claim Construction Order*, 2017 WL 3478659, at * 6. The inventor documents

state that the inventors used “two passes through desmear,” J.A. 3321, and a “double pass desmear” J.A. 3324, to achieve the tooth structure. However, similar to the intrinsic evidence, those statements reflect use of the preferred embodiment but give the public no indication that they have any limiting effect. Because we have already determined that the intrinsic evidence does not support reading a repeated desmear process into the claims, the “less reliable” extrinsic evidence, *Phillips*, 415 F.3d at 1318, which even the district court acknowledged was “not reliable enough to be dispositive,” see *Claim Construction Order*, 2017 WL 3478659, at * 6, does not counsel otherwise. Accordingly, we conclude that the Category 1 Terms should not be limited to requiring a repeated desmear process and should be given their plain and ordinary meaning.

CONCLUSION

For the foregoing reasons, we conclude that the district court erred in reading a “repeated desmear process” limitation into the Category 1 Terms. Because the parties stipulated to noninfringement based on the court’s erroneous construction, we vacate the judgment of noninfringement and remand for further proceedings.

VACATED AND REMANDED