

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

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**RUCKUS WIRELESS, INC., CISCO SYSTEMS, INC.,**  
*Plaintiffs-Appellees*

v.

**INNOVATIVE WIRELESS SOLUTIONS, LLC,**  
*Defendant-Appellant*

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2015-1425, 2015-1438

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Appeals from the United States District Court for the  
Western District of Texas in Nos. 1:13-cv-00492-LY, 1:13-  
cv-00504-LY, Judge Lee Yeakel.

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Decided: May 31, 2016

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Before PROST, *Chief Judge*, REYNA, *Circuit Judge*, and STARK, *Chief District Judge*.<sup>1</sup>

Opinion for the court filed by *Circuit Judge* REYNA.

Dissenting opinion filed by *Chief District Judge* STARK.

REYNA, *Circuit Judge*.

Innovative Wireless Solutions (“IWS”) appeals the final judgment of non-infringement of the district court in the Western District of Texas. IWS challenges the district court’s conclusion that the asserted patent claims are limited to wired rather than wireless communications. Because we find no error in the district court’s construction, we *affirm*.

#### BACKGROUND

IWS owns U.S. Patent Nos. 5,912,895; 6,327,264; and 6,587,473 (“Terry patents”). The patents are a line of continuations beginning with the ’895 patent. All share the ’895 specification.

In April 2013, IWS commenced a litigation campaign against several dozen hotels and coffee shops doing business in the Eastern District of Texas. IWS alleged that each defendant infringed the Terry patents by providing WiFi Internet access to its customers using off-the-shelf WiFi equipment sold by Ruckus and Cisco (“Ruckus”). Ruckus responded by filing for declaratory judgment of invalidity and non-infringement in the Western District of Texas. On the issue of non-infringement, Ruckus argued that its wireless equipment does not infringe the Terry patents because the Terry patents are limited to wired rather than wireless communications.

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<sup>1</sup> The Honorable Leonard P. Stark, Chief District Judge, United States District Court for the District of Delaware, sitting by designation.

The Terry patents concern techniques for providing access to a local area network (LAN) from a relatively distant computer. '895 patent col. 3 ll. 13–31. A LAN is a group of computers connected by a shared short-range transmission medium and configured to communicate using a given LAN protocol. *Id.* col. 1 ll. 13–31. When two computers on the LAN transmit onto the medium concurrently, they create interference known as a “collision,” and the concurrent communications may be lost. *Id.* col. 3 ll. 47–53. To deal with these collisions, a LAN protocol may define a contention scheme. *Id.* col. 8 ll. 4–25. For instance, in a “collision detection” scheme, a transmitting computer that detects a collision waits for a given period before reattempting the transmission. *Id.* col. 7 ll. 66–67, col. 8 ll. 1–18. “Carrier Sense Multiple Access with Collision Detection” (CSMA/CD) is an IEEE standard LAN protocol that uses collision detection. *Id.*; *id.* col. 1 ll. 25–33.

The further apart two devices are on a LAN, the longer it takes transmissions between those devices to traverse the transmission medium. *Id.* col. 1 ll. 61–67, col. 2 ll. 1–18. When the devices are sufficiently far apart, the long transmission delays may render collision detection ineffective. *Id.* col. 8 ll. 26–43. Consequently, it is not practical to use LAN protocols with collision detection over long distances, such as those spanned by telephone lines. *Id.*

The Terry patents describe an approach by which a computer may communicate with a LAN over the long distances covered by telephone lines. The inventors propose using a collision *avoidance* scheme rather than a collision *detection* scheme. *Id.* col. 9 ll. 32–51. Under the avoidance scheme, a “master” modem in the LAN dictates the timing of one-way communications between the master modem and a “slave” modem in the distant computer. *Id.* Although the patents only describe connecting the master and slave modems over physical wires, such as

a telephone line, the claims recite that the two modems are connected via a “communications path.” Claim 1 of the ’895 patent is representative:

1. A method of providing communications with a CSMA/CD (Carrier Sense Multiple Access with Collision Detection) network via a bidirectional communications path, comprising the steps of:

at a first end of the communications path, providing a CSMA/CD interface to the network, buffering information packets received from the network via the interface in a first buffer, supplying information packets from the first buffer to the communications path, and supplying control information to the communications path;

at a second end of the communications path, buffering information packets received via the communications path in a second buffer, receiving the control information from the communications path, buffering information packets to be supplied via the communications path to the network in a third buffer, and supplying information packets from the third buffer to the communications path in dependence upon the control information; and

at the first end of the communications path, supplying information packets received via the communications path to a fourth buffer, and supplying the information packets from the fourth buffer to the network via the interface;

wherein the control information and the dependence on the control information for supplying information packets from the third buffer to the communications path are arranged to avoid collisions on the communications path between in-

formation packets communicated from the first buffer to the second buffer and information packets communicated from the third buffer to the fourth buffer.

*Id.* col. 21 ll. 5–37 (claim 1). The Terry patents make no mention of wireless communication.

The central dispute during claim construction was whether the recited “communications path” captures wireless communications or is limited to wired communication. The district court adopted the latter view by construing “communications path” to mean “communications path utilizing twisted-pair wiring that is too long to permit conventional 10BASE-T or similar LAN (Local Area Network) interconnections.” *Cisco Sys., Inc. v. Innovative Wireless Sols., LLC*, No. 1:13-CV-00492-LY, 2015 WL 128138, at \*8 (W.D. Tex. Jan. 8, 2015). The district court reasoned that the specification’s “repeated reference to two-wire lines and telephone lines emphasizes that the inventor was focused on this transmission medium as the core of the new technology,” and it therefore concluded that, in view of the entire specification, “the Terry Patents are solely focused on communicating information packets long distances over wired communication paths.” *Id.* at \*7. The district court found particularly persuasive a passage from the written description regarding the scope of alternative embodiments. That passage states that, “although as described here the line 12 is a telephone subscriber line, it can be appreciated that the same arrangement of master and slave modems operating in accordance with the new protocol can be used to communicate Ethernet frames via any twisted pair wiring which is too long to permit conventional 10BASE-T or similar LAN interconnections.” *Id.* The district court considered this passage evidence that the inventors contemplated different types of communication paths but chose to limit those types to “any twisted-pair wiring that

is too long to permit conventional LAN interconnections.” *Id.* at 8.

Based on the district court’s construction, the parties stipulated jointly to a final judgment of non-infringement. IWS appeals the construction limiting the term “communications path” to wired communication.

#### DISCUSSION

Where the district court’s claim construction relies only on intrinsic evidence, the construction is a legal determination reviewed *de novo*. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). Although the district court here heard a technology tutorial with expert testimony, it relied only on intrinsic evidence to construe the term “communications path.” We therefore review that construction *de novo*.

“[T]he words of a claim are generally given 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) (quoting *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The ordinary meaning may be determined by reviewing various sources, such as the claims themselves, the specification, the prosecution history, dictionaries, and any other relevant evidence. *See Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). Ultimately, “[t]he only meaning that matters in claim construction is the meaning in the context of the patent.” *Trs. of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1363 (Fed. Cir. 2016). Legal error arises when a court relies on extrinsic evidence that contradicts the intrinsic record. *See Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 790 F.3d 1329, 1338 (Fed. Cir. 2015); *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138–39 (Fed. Cir. 2004).

IWS argues that the district court erred by importing the wired limitation into the claims. IWS argues it is improper to read a limitation into the claims on the basis that every disclosed embodiment includes that limitation. Finally, it argues that because several dependent claims limit the communications path to “two-wire line” or “two-wire telephone line,” the unmodified “communications path” term must encompass more, including wireless communications.

Ruckus counters the term “communications path” does not have a plain and ordinary meaning to a person having ordinary skill in the art. Ruckus also argues that the wired limitation was proper because that limitation is a “core feature” of the invention, which is a solution to a problem arising in long-distance communication over wires. It echoes the district court’s reasoning that the specification limits the scope of the invention to “any twisted pair wiring which is too long to permit conventional . . . LAN interconnections.” It dismisses IWS’s claim differentiation arguments because “two-wire telephone line” is only one type of several wired lines disclosed in the specification, meaning that the term “communications path” need not cover wireless communications to be broader than “two-wire telephone line.”

IWS’s argument relies on the assumption that “communications path” has an ordinary meaning which encompasses both wired and wireless communications. But we see no intrinsic or extrinsic evidence to support IWS’s assumption that a person of ordinary skill at the time of invention would have understood the plain and ordinary meaning of “communications path” to include wireless communications. We see nothing in the intrinsic record that would have suggested to one of ordinary skill that “communications path” refers to wireless communications. To the contrary, the intrinsic record militates powerfully against that understanding. First, the title of the Terry patents indicates that they are directed to “Communi-

cating Information Packets *Via Telephone Lines.*” ’895 patent col. 1 ll. 1–4 (emphasis added).<sup>2</sup> Second, the specification describes “[t]his invention” as one “particularly concerned” with “two wire lines such as telephone subscriber lines.” *Id.* col. 1 ll. 6–10. Third, every embodiment described in the specification utilizes a telephone wire, and when the specification clarifies that the full breadth of the invention is not limited to the expressed embodiments, it declares only that the patents may also reach any *wired* connection. *Id.* col. 9 ll. 45–51. Though these statements do not expressly exclude wireless communications from the meaning of “communications path,” they do not include it, and they discourage that understanding. Further, IWS did not present—nor did the district court consult—any extrinsic evidence, such as dictionaries, trade literature, expert testimony, or any other evidence showing that “communications path” was a term of art or otherwise understood to include wireless communications at the time of invention.

Considering the claims as a whole provides no additional clue that “communications path” includes wireless communications. Though several dependent claims limit the communications path to a “two-wire telephone subscriber line” (’895 patent, claims 13, 21, 23, 25) or a “two-wire line” (’473 patent, claims 6, 21, 27, 28), we agree with Ruckus that these dependent claims could merely exclude other types of wired communications paths disclosed in the specification, such as coaxial cable. *See id.* at col. 3 ll. 13–23. The doctrine of claim differentiation—which encourages us to construe independent claims more

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<sup>2</sup> We have used the title of a patent to aid in claim construction. *See, e.g., Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1557 (Fed. Cir. 1995); *Titanium Metals Corp. of Am. v. Banner*, 778 F.2d 775, 780 (Fed. Cir. 1985).



broadly than their dependent claims—therefore does not necessarily suggest that the “communications path” recited in the independent claim encompasses wireless communications. We also have no evidence that the underlying purpose and disclosed solution of the Terry patents might evoke wireless communication in the mind of a skilled artisan. IWS presents no evidence that the inability to execute collision detection protocols over long distances was a problem in wireless communication or that collision detection was even used in that context. We therefore have no reason to believe that the purpose of the patents would have implicated wireless communications within the meaning of “communications path.”

The canons of claim construction provide additional reason to limit the scope of the claims to wired communication. If, after applying all other available tools of claim construction, a claim is ambiguous, it should be construed to preserve its validity. *Phillips*, 415 F.3d at 1327. Because the specification makes no mention of wireless communications, construing the instant claims to encompass that subject matter would likely render the claims invalid for lack of written description. *See Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1480 (Fed. Cir. 1998) (holding that a claim “may be no broader than the supporting disclosure”). The canon favoring constructions that preserve claim validity therefore counsels against construing “communications path” to include wireless communications.

We conclude that no intrinsic or extrinsic evidence suggests that “communications path” encompasses wireless communications. Accordingly, we affirm the district court’s claim constructions and final judgment of non-infringement based thereon.

**AFFIRMED**

COSTS

No costs.

**United States Court of Appeals  
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STARK, *Chief District Judge*, dissenting.\*

The dispositive issue in this case is whether a person of ordinary skill in the art at the time of the invention of the Terry patents would understand the “plain and ordinary” meaning of the disputed claim term, “communications path,” to include wireless communications. If wireless communications are not within the scope of the patent claims, then the judgment of non-infringement

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\* The Honorable Leonard P. Stark, Chief District Judge, United States District Court for the District of Delaware, sitting by designation.

must be affirmed. However, if the properly construed claims include wireless embodiments, then this case should proceed.

In affirming the district court’s conclusion that wireless communications are outside the scope of the claims, the majority emphasizes that there is no extrinsic evidence to support the “assumption” of the patentee, Innovative Wireless Solutions (“IWS”), that the plain and ordinary meaning of “communications path” to a person of skill in the art at the pertinent time included wireless communications. I agree that the record lacks this extrinsic evidence.

However, rather than supporting affirmance, I believe that the majority’s view requires this court to vacate the judgment of non-infringement, and the claim construction order on which it is based, and remand for the district court to decide whether to provide the parties an opportunity to present extrinsic evidence. Two factors persuade me that this is the proper approach.

First, in the district court, there was no dispute as to the plain and ordinary meaning of “communications path.” Instead, the parties agreed that this meaning included wireless communications—but disagreed as to whether that undisputed meaning should be adopted as the claim construction. Even on appeal, the appellees, Ruckus Wireless, Inc. and Cisco Systems, Inc. (“Ruckus”), principally argue for a disclaimer of claim scope, and not that wireless communications are outside the plain and ordinary meaning of “communications path.” In these circumstances, we should not fault the patentee for failing to come forward with extrinsic evidence. Instead, we should give the patentee a chance to do so—particularly because the district court may have to make subsidiary findings of fact in order to construe the claims. For that to occur, remand is necessary.

Second, although I do not believe the parties' dispute should now be resolved on the intrinsic evidence alone, I disagree with the majority's assessment of that evidence. In the unusual circumstances here, it would be preferable to develop the record instead of making a decision solely on the basis of inconclusive intrinsic evidence.

For these reasons, which I explain more fully below, I respectfully dissent.

## I

The majority characterizes Ruckus's position as being that "the term 'communications path' does not have a plain and ordinary meaning to a person having ordinary skill in the art." Majority Op. at 7. The majority emphasizes that "IWS did not present—nor did the district court consult—any extrinsic evidence, such as dictionaries, trade literature, expert testimony, or any other evidence showing that 'communications path' was a term of art or otherwise understood to include wireless communications at the time of invention." *Id.* at 8. It further observes that "IWS's argument relies on the assumption that 'communications path' has an ordinary meaning which encompasses both wired and wireless communications" and faults IWS for not producing evidence to "support IWS's assumption that a person of ordinary skill at the time of the invention would have understood the plain and ordinary meaning of 'communications path' to include wireless communications." *Id.* at 7.

But the majority makes its own implicit assumption: that IWS's failure to present extrinsic evidence is a concession that such supportive evidence does not exist. In my view, it is far more probable that IWS chose not to present extrinsic evidence of the plain and ordinary meaning of the disputed term because Ruckus never challenged this meaning below.

## A

The reason there is no extrinsic evidence as to the plain and ordinary meaning of “communications path” to a person of ordinary skill in the art<sup>1</sup> at the time of the Terry patents’ invention is almost certainly that there was no dispute on this point in the district court. In the district court, IWS made clear that it believed the plain and ordinary meaning of “communications path” was broad enough to include wireless embodiments. Ruckus never disputed this. Instead, Ruckus argued that the specification required a narrower construction. That the parties’ dispute pertained to whether the term “communications path” should have its plain and ordinary meaning—as opposed to what that plain and ordinary meaning was—is evident from the parties’ briefing below, the transcript of the claim construction hearing, and the district court’s opinion.

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<sup>1</sup> The parties provided the district court with very little assistance in determining the qualifications or experience of the person of ordinary skill in the art. In their briefing, neither side offered a proposed identification of such a person. At the claim construction hearing, when the district court asked, “Who is the person ordinarily skilled in the art at the time of the invention?” counsel for IWS responded that this was “a factual issue” on which “neither side has presented a proposal.” *Cisco Sys., Inc. v. Innovative Wireless Sols., LLC*, No. 1:13-CV-00492-LY, D.I. 54 (“Tr.”) at 35, 37 (W.D. Tex. Jan. 8, 2015). Ruckus eventually provided its perspective on the qualifications of one of ordinary skill, but did not explain how those qualifications should inform the district court’s construction. *See id.* at 55-56. On remand, the district court could direct the parties to develop the record on this issue.

From at least the time the parties submitted their joint claim construction statement, IWS advocated that “communications path” be given its “plain and ordinary meaning in the field.” J.A. 625; *see also* J.A. 619-22, 626-27, 633, 655-58. Ruckus did not contend that the content of IWS’s proposed “plain and ordinary meaning” was in any way unclear or disputed. Instead, Ruckus proposed an *alternative* construction, to limit the claim scope to *wired* communications.<sup>2</sup>

In its opening claim construction brief, IWS further asserted that there was “no reasonable dispute that the plain and ordinary meaning of ‘communications path’ is not limited to a wired path.” J.A. 877. Ruckus, in its briefs, did not disagree.

Consistent with its briefing, Ruckus did not challenge IWS’s contention at the claim construction hearing. Rather, Ruckus characterized the dispute as being that IWS “say[s] plain and ordinary meaning, and we say ‘wired communication path,’” and argued that “the intrinsic record” consisted of “an unmistakable teaching that this patent is confined to a wired network.” Tr. at 7-9. When it was his turn,<sup>3</sup> counsel for IWS reaffirmed its view that:

[T]here’s no real dispute [about whether] the plain and ordinary meaning of the phrase “com-

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<sup>2</sup> Ruckus’s proposed construction of “communications path”—“a wired communications path for exchanging information between two endpoints,” J.A. 625—incorporates the disputed term itself, another indication that Ruckus agreed with IWS as to the plain and ordinary meaning of this term.

<sup>3</sup> At the claim construction hearing, Ruckus presented its position on this dispute before IWS. Ruckus did not have a rebuttal.

munications path” is limited to “wired.” There’s no requirement in the word “communication” or “path” or “communications path” that’s limited to “wired.” There’s been no suggestion or evidence that generally in the field of network, if you say the phrase “communications path,” that you mean “wired.”

*Id.* at 15.<sup>4</sup>

Reflecting what the parties did and did not argue, the district court’s opinion notes no dispute as to whether the plain and ordinary meaning of “communications path” includes wireless communications. In describing the parties’ dispute, the court explained that Ruckus relied on the specification as “clearly demonstrat[ing]” that the invention’s “sole purpose” related to wired paths. J.A. 19. The court also noted Ruckus argued that “the patents-in-suit disclaim” certain embodiments, that “a wired communication path is the defining characteristic of all variations of the disclosed embodiments,” and that there was a “purposeful intent to limit the invention’s scope to a wired communication path.” *Id.* The district court summarized IWS’s position as being that “the term should be given its broadest ordinary meaning consistent with the written description,” which IWS contended includes wireless embodiments. *Id.*

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<sup>4</sup> As the majority states, the district court heard a tutorial just before the claim construction hearing, at which Ruckus presented expert testimony. Majority Op. at 6; *see also* Appellees’ Br. 9, 11; J.A. 807; J.A. 1365 at Dkt. 49; J.A. 1372 at Dkt. 51. Although the parties have not provided us with a transcript of the tutorial, there is no basis to believe it addressed the plain and ordinary meaning of “communications path” to a person of ordinary skill in the art.



When it turned to resolving the dispute before it, the district court stated that it could “depart from the plain and ordinary meaning of a claim term in only two instances: lexicography and disavowal.” J.A. 20. As neither side argued that the patentee here was its own lexicographer, “to conclude that the term requires construction beyond its plain and ordinary meaning, the court would need to find ‘that the specification [or prosecution history] make[] clear that the invention does not include a particular feature, or is clearly limited to a particular form of the invention.’” *Id.* (quoting *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014)). Based on the specification, the court concluded that the Terry patents “are solely focused on communicating information packets long distances over wired communication paths” and, accordingly, construed the claims as being limited to wired communications. J.A. 20-22.

At no point in its analysis did the district court mention any dispute as to whether the plain and ordinary meaning of “communications path,” to a person of ordinary skill in the art reading the Terry patents at the pertinent time, included wireless communications. There simply was no dispute on this point.<sup>5</sup> Hence, IWS’s decision not to present extrinsic evidence as to the plain and ordinary meaning of “communications path” is entirely understandable.

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<sup>5</sup> Counsel for IWS confirmed this at oral argument before this court, repeatedly stating it was uncontested below that the ordinary meaning of “communications path” included wireless communications. Oral Argument at 12:00, *available* at <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2015-1425.mp3>; *see also id.* at 00:40; 01:25. Ruckus expressed no disagreement with these representations.

## B

In this appeal, as below, Ruckus’s principal argument remains that the intrinsic evidence demonstrates that the patentee implicitly disclaimed wireless communications. Ruckus argues that the claims are limited to wired communications because a wired path “is an important core feature of the invention,” and it is proper to “limit[] claims to the scope consistently prescribed by the patentee in the intrinsic record.” Appellees’ Br. 10.

Ruckus has, however, raised a new argument in this appeal. Ruckus now faults IWS for “suggest[ing],” without proving, that there is a plain and ordinary meaning of the disputed claim term “that would be understood by one of ordinary skill in the art as broad enough to encompass a wireless path.” Appellees’ Br. 16-17; *see also id.* at 17 (“IWS, however, did not identify any support that shows these phrases have a plain and ordinary meaning readily understood by one of ordinary skill in the art without the benefit of the context provided by the intrinsic record.”). Ruckus argues that these evidentiary deficiencies compel affirmance of a construction excluding wireless embodiments. The majority agrees with Ruckus.

In my view, the state of the record instead warrants a remand. As the majority writes, “[T]he words of a claim are generally given 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.’” Majority Op. at 6 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc)). If there is a lack of proof as to that meaning, it is due to the lack of dispute on this issue below. Hence, we should remand. *See generally Metro. Life Ins. Co. v. Bancorp Servs., LLC*, 527 F.3d 1330, 1336 (Fed. Cir. 2008) (declining to consider claim construction issue that district court did not “expressly” address and remanding to district court for further proceedings).

## C

Remand is particularly appropriate in this case because, if the issue in dispute is whether the disputed term does or does not have a plain and ordinary meaning, subsidiary factfinding may be necessary to construe the claim. Although factfinding is often unnecessary in claim construction, the Supreme Court in its recent decision in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, explained that sometimes a district court may

need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science *or the meaning of a term in the relevant art during the relevant time period*. In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the “evidentiary underpinnings” of claim construction that we discussed in *Markman* . . . .

135 S. Ct. 831, 841 (2015) (emphasis added) (citation omitted). Thus, if the claim construction in this case turns on the previously-unaddressed question of the plain and ordinary meaning of the disputed term in the relevant art during the relevant time period, then it is quite possible that extrinsic evidence will be necessary to resolve the question.

Notably, the entirety of the claim construction proceedings below occurred before the Supreme Court decided *Teva*. Remand would allow the district court to consider these issues in light of the guidance in that case.

## II

In the absence of extrinsic evidence, the majority resolves this case based solely on the intrinsic evidence. I believe this is premature. The intrinsic evidence can only be fully evaluated after determining what, if anything, is the plain and ordinary meaning of “communications path” to one of skill in the art. *See Teva*, 135 S. Ct. at 841 (explaining that court must resolve disagreements about knowledge, experiences, and understandings possessed by person of ordinary skill in the art before proceeding to “legal analysis [of] whether a skilled artisan would ascribe that same meaning to that term in the context of the specific patent claim under review”); *Phillips v. AWH Corp.*, 415 F.3d at 1313 (stating that claim construction “begins” with perspective of person of ordinary skill in the art).

But even if this term has no plain and ordinary meaning outside of the context provided by the intrinsic record, I do not agree with the majority’s conclusion that the intrinsic record “militates powerfully against” a construction that encompasses wireless communications. Majority Op. at 7. As the majority recognizes, the intrinsic evidence “do[es] not expressly exclude wireless communications from the meaning of ‘communications path.’” *Id.* at 8. Yet, applying “[t]he canons of claim construction,”<sup>6</sup> the majority finds in the intrinsic evidence sufficient basis “to

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<sup>6</sup> The majority opinion does not mention disclaimer, although this was the principal basis on which the district court arrived at the construction which the majority affirms. Like the majority, I do not decide whether the record here meets the “exacting” standards for finding a disclaimer. *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012). Because of the need for further proceedings, the decision as to whether there is a disclaimer should wait.

limit the scope of the claims to wired communication.” *Id.* at 9. I disagree.

The majority cites as evidence of the claims’ scope the patents’ title: “Communicating Information Packets *Via Telephone Lines.*” *Id.* at 7-8. But even the majority concedes that the claim scope extends beyond telephone lines to other “twisted pair wirings.” Furthermore, patent titles are accorded no more weight in claim construction than other portions of the specification. *See Moore U.S.A., Inc. v. Standard Register Co.*, 229 F.3d 1091, 1111 (Fed. Cir. 2000) (“[T]he bar on importing limitations from the written description into the claims applies no less forcefully to a title.”); *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1312 (Fed. Cir. 1999) (patent title is “near irrelevancy” in claim construction).

Next the majority observes that the specification describes “[t]he invention” as “particularly concerned” with “two wire lines such as telephone subscriber lines.” Majority Op. at 8 (citing ’895 patent col. 1 ll. 6-10). But this court does not usually limit claim scope to preferred embodiments, lest it commit the “cardinal sin” of importing limitations from the specification into the claims. *See, e.g., Hill-Rom*, 755 F.3d at 1371 (“[W]e do not read limitations from the embodiments in the specification into the claims.”); *Thorner*, 669 F.3d at 1366 (“We do not read limitations from the specification into claims . . . .”); *Phillips*, 415 F.3d at 1320 (describing “reading a limitation from the written description into the claims” as “one of the cardinal sins of patent law”) (internal quotation marks omitted).

Finally, the majority emphasizes that “every embodiment described in the specification utilizes a telephone wire.” Majority Op. at 8. However, again, claims are not typically limited to the embodiments disclosed in the specification, even when just one such embodiment (or type of embodiment) is disclosed. *See Hill-Rom*, 755 F.3d

at 1373 (“The absence of an embodiment teaching a wireless receiver does not prevent the claimed datalink from being given its plain and ordinary meaning at the relevant time.”); *see also generally Ormco Corp. v. Align Tech., Inc.*, 498 F.3d 1307, 1322 (Fed. Cir. 2007) (“This court . . . has rejected a claim construction process based on the ‘essence’ of an invention.”); *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1345 (Fed. Cir. 2002) (“It is well settled that there is no legally recognizable or protected essential element, gist or heart of the invention in a combination patent.” (internal quotation marks omitted)).

Moreover, there is intrinsic evidence that supports IWS’s position. As is undisputed, wireless technology was known at the time the Terry patents were invented. *See, e.g.*, J.A. 19 (“[Ruckus] argues that wireless communication paths were well-known at the time.”); J.A. 1022. At least one of the Terry patents, the ’473 patent, includes an examiner citation to a prior art reference relating to a wireless local area network (“LAN”) system. *See* J.A. 86. In the absence of any express disclaimer, or even disparagement of wireless embodiments, this fact supports finding wireless communications to be within the scope of the claims. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 909 (Fed. Cir. 2004) (“[A]bsent a clear disclaimer of particular subject matter, the fact that the inventor may have anticipated that the invention would be used in a particular way does not mean that the scope of the invention is limited to that context.”) (internal quotation marks omitted).

The doctrine of claim differentiation also favors remand. Certain dependent claims—for example, claim 6 of

the '473 patent<sup>7</sup>—differ from the claims from which they depend solely by substituting “two-wire line” for “communications path.” This suggests that the lower court’s “two-wire” construction is overly narrow. *See Phillips*, 415 F.3d at 1315 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”).

Lastly, I disagree that the claims’ validity is a relevant consideration at this stage of this case. *See* Majority Op. at 9. Whether the Terry patents’ written description is adequate presents a factual question. *GlaxoSmithKline LLC v. Banner Pharmacaps, Inc.*, 744 F.3d 725, 729 (Fed. Cir. 2014). The record at present is devoid of clear and convincing evidence that construing the claims to include wireless communications would render them invalid for lack of written description.<sup>8</sup>

As importantly, while this court has “acknowledged the maxim that claims should be construed to preserve their validity,” it has “certainly not endorsed a regime in which validity analysis is a regular component of claim construction.” *Phillips*, 415 F.3d at 1327. “Instead, we have limited the maxim to cases in which the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.” *Id.*

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<sup>7</sup> *See* '473 patent col. 20 ll. 12-13 (“6. A method as claimed in claim 1, wherein the bidirectional communications path comprises a two-wire line.”).

<sup>8</sup> On remand, if the district court shares the concern as to the adequacy of the Terry patents’ written description, it might efficiently resolve that question by staying all discovery and motions practice other than that relating to the construction of “communications path” and the written description defense.

The majority does not show that the claims here are ambiguous. To the contrary, the majority appears to find the intrinsic evidence to be unambiguous. Hence, the maxim does not apply.

### III

I fear that the majority's decision today deprives a patentee of the full scope of its patent claims based on the patentee's failure to present extrinsic evidence on an issue that was never in dispute in the district court. On the current record, it appears that IWS had an entirely reasonable basis to believe it did not need to present extrinsic evidence.<sup>9</sup> In the proceedings below, nobody—not IWS, not Ruckus, nor the district court—expressed any doubt that the plain and ordinary meaning of “communications path” included wireless communications.

Accordingly, I believe the most appropriate course of action is to vacate the district court's judgment of non-infringement and its construction of “communications path” and remand for the district court to provide the parties an opportunity to present extrinsic evidence before again construing “communications path.” Thus, I respectfully dissent.

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<sup>9</sup> It may be that there were facts or circumstances, not evident from the record before us, that made IWS's approach to claim construction unreasonable. It may be, then, that on remand the district court would find IWS waived its opportunity to present extrinsic evidence. Alternatively, the district court might find that Ruckus effectively stipulated to what IWS has always contended is the plain and ordinary meaning, avoiding the necessity of considering extrinsic evidence even on remand. I would leave these decisions to the district court, which is in the best position to make them.