

850 F.3d 1302
United States Court of Appeals,
Federal Circuit.

COMCAST IP HOLDINGS I LLC, Plaintiff-Appellee

v.

SPRINT COMMUNICATIONS COMPANY, L.P., Sprint
Spectrum LP, Nextel Operations, Inc., Defendants-Appellants

2015-1992

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Decided: March 7, 2017

Synopsis

Background: Patentee brought action against competitor, alleging infringement of **patents** generally directed to use of computer network technology to facilitate telephone call. Jury rendered verdict in favor of patentee. The United States District Court for the District of Delaware, No. 1:12-cv-00205-RGA, [Richard G. Andrews, J.](#), denied competitor's motion for judgment as matter of law (JMOL), or in alternative, for new trial, and added prejudgment interest to damages award. Competitor appealed.

Holdings: The Court of Appeals, [Chen](#), Circuit Judge, held that:

[1] competitor was not prejudiced by court not construing phrase, “switched telecommunication system,” to exclude any element of data-gram-based system;

[2] jury reasonably could have determined in its infringement finding that “a call destination” claim did not require destination to be final point on path of call, but could be more than one destination;

[3] jury reasonably could have determined in its infringement finding that phrase “identifier of a second party” did not require “unique identifier of a second party”;

[4] competitor waived any arguments for consideration on motion for judgment as a matter of law concerning how it was prejudiced by broader construction of “parsing”;

[5] patentee did not exclude processes such as “mapping,” “lookup,” and “translating” from “parsing”; and

[6] prejudgment interest ran from earliest date of infringement for any **patent** issued at time of hypothetical negotiation, and thus prejudgment interest did not have to be apportioned, although some **patents** had not issued at time of hypothetical negotiation.

Affirmed.

West Headnotes (23)

[1] Courts 🔑 Particular questions or subject matter

In a **patent** case, the law of the regional circuit controls the standard of review for the denial of a motion for judgment as a matter of law (JMOL).

[1 Cases that cite this headnote](#)

[2] Federal Courts 🔑 Taking case or question from jury;judgment as a matter of law

In the Third Circuit, review of a denial of a motion for judgment as a matter of law (JMOL) is without deference.

[1 Cases that cite this headnote](#)

[3] Federal Courts 🔑 Taking case or question from jury;judgment as a matter of law

On a motion for judgment as a matter of law (JMOL) in the Third Circuit, the record is reviewed in the light most favorable to the prevailing party unless the record is critically deficient of that minimum quantum of evidence from which a jury might reasonably afford relief.

[Cases that cite this headnote](#)

[4] Courts 🔑 Particular questions or subject matter

The proper construction of a **patent's** claims is an issue of Federal Circuit law.

[Cases that cite this headnote](#)

[5] Patents 🔑 Construction and Operation of **Patents**

Intrinsic evidence and the ultimate construction of **patent** claim terms are reviewed de novo, and underlying factual determinations concerning extrinsic evidence are reviewed for clear error.

[Cases that cite this headnote](#)

[6] Patents 🔑 Judgment as a matter of law**Patents** 🔑 New trial;amendment

Where a **patent** infringement verdict relies on incorrect construction of the disputed claim terms, a court may grant judgment as a matter of law (JMOL) or order a new trial to correct the error, depending on the degree of difference between the incorrect construction and the correct construction.

[Cases that cite this headnote](#)

[7] Patents 🔑 Remand;mandate

If no reasonable jury could have found **patent** infringement under the proper claim construction, the Court of Appeals may reverse a district court's denial of judgment as a matter of law (JMOL) without remand.

[1 Cases that cite this headnote](#)

[8] **Patents** 🔑 Questions of law or fact**Patents** 🔑 Infringement or noninfringement

Determination of **patent** infringement is a question of fact, which, in the context of a jury trial, is reviewed for substantial evidence.

[Cases that cite this headnote](#)

[9] **Patents** 🔑 Harmless and reversible error

Competitor was not prejudiced by court not construing phrase, “switched telecommunication system,” in **patent** generally directed to use of computer network technology to facilitate telephone call, to exclude any element of data-gram-based system, since accused Code Division Multiple Access (CDMA) Network was where call was initiated or set up and CDMA Network was switched telecommunication system having no datagram-based elements; competitor's construction also would not permit it to argue that **patent** required call to travel “exclusively” over switched telecommunication system because claims did not state that call had to travel exclusively on that system to particular destination after call was either initiated or set up through switched telecommunication system.

[Cases that cite this headnote](#)

[10] **Patents** 🔑 Infringement or noninfringement**Patents** 🔑 Harmless and reversible error

A jury's findings on infringement may be affirmed on appeal if substantial evidence appears in the record supporting the jury's verdict, and if correction of errors in claim construction would not have changed the verdict, given the evidence presented.

[Cases that cite this headnote](#)

[11] **Patents** 🔑 Harmless and reversible error

Prejudicial error in **patent** claim construction requires sufficient evidence to support a finding of non-infringement under a correct instruction.

[Cases that cite this headnote](#)

[12] **Patents** 🔑 Radio and telecommunications equipment

Jury reasonably could have determined in its infringement finding that “a call destination” claim in **patent** generally directed to use of computer network technology to facilitate telephone call did not require destination to be final point on path of call, but could be more than one destination, based on plain and ordinary meaning of words in that phrase and relying on expert's testimony that relevant accused call flows were routed to at least one call destination.

[Cases that cite this headnote](#)

[13] **Patents** 🔑 Plain, ordinary, or customary meaning in general

A jury is free to rely on the plain and ordinary meaning of a term in **patent** in the absence of a different construction.

[1 Cases that cite this headnote](#)

[14] **Patents** 🔑 [Radio and telecommunications equipment](#)

Jury reasonably could have determined in its infringement finding that phrase “identifier of a second party” in **patent** generally directed to use of computer network technology to facilitate telephone call did not require “unique identifier of a second party,” where expert testified that phrase meant “how you get to [a] second party” and that Domain Name System (DNS) signaling in Internet Protocol Multimedia Subsystem (IMS) core determined identifier of second party, which could include session border controller inside IMS core, and competitor otherwise did not seek more restrictive construction of that phrase previously.

[Cases that cite this headnote](#)

[15] **Patents** 🔑 [Judgment as a matter of law](#)

Competitor waived any arguments for consideration on motion for judgment as a matter of law (JMOL) concerning how it was prejudiced by broader construction of “parsing” in **patents** generally directed to use of computer network technology to facilitate telephone call, where competitor did not explain how relevant accused call flows did not practice asserted claims under its narrower claim construction.

[Cases that cite this headnote](#)

[16] **Patents** 🔑 [Reexamination and inter partes review proceedings](#)

Patentee did not exclude processes such as “mapping,” “lookup,” and “translating” from “parsing,” in **patents** generally directed to use of computer network technology to facilitate telephone call, by distinguishing “parsing” from “predetermined association” and those processes during reexaminations.

[Cases that cite this headnote](#)

[17] **Patents** 🔑 [Prosecution disclaimer](#)

For **patent** prosecution disclaimer to attach, the alleged disavowing actions or statements made during prosecution must be both clear and unmistakable.

[Cases that cite this headnote](#)

[18] **Patents** 🔑 [Prosecution disclaimer](#)

Where the prosecution history is ambiguous or susceptible to multiple reasonable interpretations as to any alleged disavowal, a court will decline to find **patent** prosecution disclaimer.

[Cases that cite this headnote](#)

[19] **Interest** 🔑 [Particular cases and issues](#)

Prejudgment interest should be awarded after a finding of **patent** infringement absent some justification for withholding such an award. 35 U.S.C.A. § 284.

[1 Cases that cite this headnote](#)

[20] Patents 🔑 Profits and damages

In a **patent** case, a district court's award of prejudgment interest is reviewed for an abuse of discretion. 35 U.S.C.A. § 284.

[Cases that cite this headnote](#)

[21] Interest 🔑 Particular cases and issues

Prejudgment interest ran from earliest date of infringement for any **patent** issued at time of hypothetical negotiation, and thus prejudgment interest did not have to be apportioned; although some **patents** had not issued at time of hypothetical negotiation, damage award took form of lump sum royalty payment and lump sum royalty payment ran from date of earliest relevant hypothetical negotiation. 35 U.S.C.A. § 284.

[2 Cases that cite this headnote](#)

[22] Interest 🔑 Particular cases and issues

Prejudgment interest runs from the earliest date of infringement for any **patent** issued at the time of the hypothetical negotiation. 35 U.S.C.A. § 284.

[2 Cases that cite this headnote](#)

[23] Patents 🔑 In general;utility

US **Patent** 7,012,916, US **Patent** 8,170,008, US **Patent** 8,204,046. Infringed.

[Cases that cite this headnote](#)

***1305** Appeal from the United States District Court for the District of Delaware in No. 1:12-cv-00205-RGA, Judge Richard G. Andrews.

Attorneys and Law Firms

MATTHEW B. LEHR, Davis Polk & Wardwell LLP, Menlo Park, CA, argued for plaintiff-appellee. Also represented by **ANTHONY I. FENWICK**, **GARETH DEWALT**, **DAVID LISSON**.

BRIAN CHARLES RIOPELLE, McGuire Woods LLP, Richmond, VA, argued for defendants-appellants. Also represented by **DAVID EVAN FINKELSON**, **BRIAN DAVID SCHMALZBACH**; **RACHELLE HARLEY THOMPSON**, Raleigh, NC.

Before **O'Malley**, **Reyna**, and **Chen**, Circuit Judges.

Opinion

Chen, Circuit Judge.

Comcast IP Holdings I LLC (Comcast) sued Sprint Communications Company LP, Sprint Spectrum L.P., and Nextel Operations, Inc. (collectively, Sprint) for infringement of, among other **patents**, U.S. **Patent** Nos. 8,170,008, 7,012,916, and 8,204,046 (collectively, **Low Patents**), which are generally directed to the use of computer network technology to facilitate a telephone call (phone call or call). After a jury trial, the jury found that Sprint's handling of certain phone

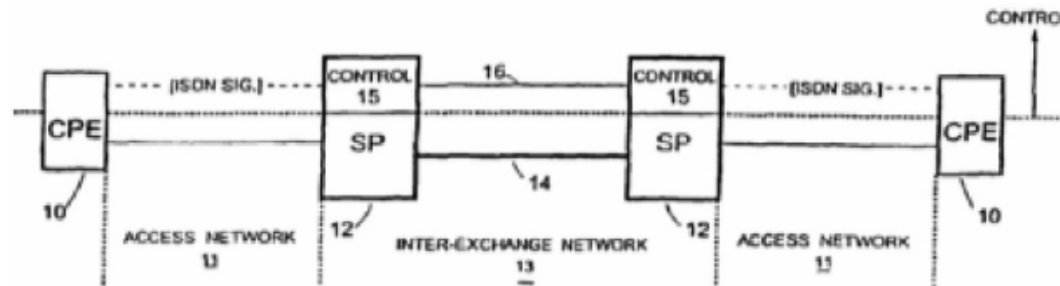
calls infringed claims 1, 13, and 27 of the '008 Patent, claim 45 of the '916 Patent, and claims 90 and 113 of the '046 Patent, and awarded Comcast a \$7.5 million damages award. The district court then denied Sprint's motion for judgment as a matter of law (JMOL), or in the alternative, for a new trial, and added prejudgment interest to the damages award. Sprint has appealed various rulings from the district court. Because we see no error in these rulings, we *affirm* the district court's entry of judgment against Sprint.

BACKGROUND

A. The Claimed Inventions

The Low Patents are in the same patent family¹ and are generally directed to methods of using Domain Name System (DNS) technology, such as the Internet, to *1306 initiate and route a phone call through a switched telecommunication system.

One example of a switched telecommunication system is a public switched telephone network (PSTN), which provides for a bearer channel (i.e., “interconnection”) between two telephones “according to a called-party telephone number input at the calling-party telephone.” '008 Patent col. 2 ll. 13–17; *see also id.* col. 1 ll. 31–41 (defining a switched telecommunication system as “a system comprising a bearer network with switches for setting up a bearer channel through the network”). A PSTN is shown in Figure 1.



Id. fig. 1. In Figure 1

customer premises equipment, CPE[] 10 (such as standard analogue telephones....) are connected through an access network 11 to switching points, SPs 12. The SPs 12 form nodes in an inter-exchange network 13 made up of interconnecting trunks 14 and SPs that are controlled by control entities 15 in the SPs. The control effected by the control entities 15 is determined by signalling inputs received from the CPEs and other SPs, and involves call setup, maintenance and clearance to provide the desired bearer channel between calling CPE and called CPE. Conceptually, the PSTN may be thought of as a bearer network and a control (signalling) network, the function of the latter being to effect call control through the bearer network, namely the control of setup, maintenance and take down of bearer channels through the bearer network; in practice, the bearer and signalling networks may use the same physical circuits and even the same logical channels.

Id. col. 2 ll. 19–35.

The Low Patents also explain that a “communication system” generally has “a broader meaning than switched telecommunication system” and “include[s] datagram-based communication systems where each data packet is independently routed through a bearer network without following a predetermined bearer channel.” *Id.* col. 1 ll. 50–55. One example of a datagram-based communication system is the Internet. *See, e.g.,* Appellant Br. at 40.

Asserted claim 1 is representative of the claimed invention in the '008 Patent:

1. A method, comprising:

receiving, over a switched telecommunication system, a request;

determining, responsive to the request, a call destination using domain name system signaling; and

initiating a call through the switched telecommunication system between a calling party and the call destination that was determined as a result of said domain name system signaling.

Id. col. 32 ll. 46–55.

Asserted claims 45 and claim 90 below are representative of the claimed inventions for the '916 Patent and the '046 Patent.

45. A method of accessing communications data for contacting a target entity, said method comprising:

*1307 forming, from a number string identifying the target entity, a domain name by a process including parsing at least a substantial portion of the number string into at least a part of said domain name;

supplying the domain name formed to a DNS-type database system and receiving back a resource record including an URI [uniform resource identifier] for locating communications data associated with the domain name; and

using the URI received back to access said communications data.

'916 Patent col. 36 ll. 56–67.

90. A method, comprising:

forming, by at least one computing device, from a number string identifying a target entity, a domain name by a process including parsing at least a portion of the number string into at least a part of said domain name; and

supplying, by the at least one computing device, the domain name to a database and receiving back from that database a resource record including a uniform resource identifier (URI) of the target entity.

'046 Patent col. 45 l. 65–col. 46 l. 6.

B. The Accused Methods

The six accused methods are ways in which Sprint connects a calling party with a called party (call flows), and there is no dispute as to how these accused call flows operate.

Comcast accused three call flows of infringing the '008 Patent. *See* Appellant Br. at 15. These calls generally begin on Sprint's wireless cellular network that uses a standard known as Code Division Multiple Access, or “CDMA” (CDMA Network). The calls then travel through an Internet Protocol Multimedia Subsystem network (IMS Network). “The IMS Network includes an IMS core, which is a collection of servers on a packet-based network used to route and process signaling traffic” for the calls. *Id.* at 16 n.7.

When a call enters the IMS core, it does so through a media gateway controller, or “MGC.” *Id.* at 18. Once the call enters the IMS core, “a network element named a call session control function (‘CSCF’) uses [DNS] signaling to determine an IP address used to route the call to a session border controller (‘SBC’).” *Id.* at 18–19. “The SBC is another server on the

IMS core.” *Id.* at 19. From there, the call is routed outside of the IMS core, and then back into the IMS core to another MGC. *Id.* “The MGC is not specific to any particular telephone number or service provider.” *Id.* From the MGC, the call is ultimately routed to the called party. *Id.*

Comcast accused another three call flows of infringing the '916 Patent and the '046 Patent. *Id.* at 15. Common to these call flows are their use of a process referred to as “ENUM” to route calls through the IMS core. “That method starts with a [called] telephone number, removes any special characters, reverses the numbers, places a dot between each number, and adds ‘e.164.arpa’ to the end” of the number.” *Id.* at 27.

C. Procedural Background

Comcast asserted claims 1, 13, and 27 of the '008 Patent, claim 45 of the '916 Patent, and claims 90 and 113 of the '046 Patent against Sprint in the District of Delaware.² The parties disputed the claim constructions for, among other terms, the term “switched telecommunication system” in the '008 Patent and the term *1308 “parsing” in the '916 Patent and the '046 Patent. For the term “switched telecommunication system,” the parties disagreed as to whether such a system could include elements of a datagram-based system. *J.A.* at 3. The district court concluded that “[a] system with elements of both switches and a ‘datagram-based system’ is not necessarily outside the scope of a ‘switched telecommunication system.’ ” *Id.* at 4. “A ‘communication system’ is still a broader concept than a ‘switched telecommunication system’ even where the ‘switched telecommunication system’ has elements of a ‘datagram-based system,’ because a ‘switched telecommunication system’ at a minimum must have switches and function on a bearer network.” *Id.*

As for the term “parsing,” the district court determined that “parsing” was an automated process because it necessarily required a computer. *See id.* at 39. And the parties agreed that the term must include “analyzing a string according to a set of rules of a grammar.” *Id.* at 40. But they differed on whether the relevant prosecution histories of the '916 Patent and the '046 Patent demonstrated disavowals of claim scope so as to limit the term “parsing.” *See id.* The district court saw no clear disavowals of claim scope in the prosecution histories. *Id.*

After a six-day jury trial, the jury found that all of the asserted claims of the Low Patents were infringed by their respective accused call flows and awarded Comcast a lump sum payment of \$7.5 million in damages. *Id.* at 49. Sprint then moved for JMOL, as well as for a new trial, on several bases. *See id.* at 48–69. For example, Sprint argued that there was insufficient evidence to support the jury's verdict as to the '008 Patent because Comcast's evidence, in the form of expert testimony from Dr. Eric Burger, only demonstrated that “any destination along the way in route of a call” could be a “call destination,” and wrongly suggested that there could be “multiple destinations” along a call flow. *Id.* at 53–54. Sprint insisted this understanding of “call destination” was flawed because the claim term can only refer to “the absolute final point in the call flow, or the receiving phone,” otherwise the term would be superfluous. *Id.* at 52, 54.

The district court disagreed with Sprint. The district court noted that the jury was instructed to apply the common meaning of “call destination” in rendering its verdict as neither party asked for a construction of the claim term. *Id.* at 53 & n.1. The district court explained that the jury could have reasonably concluded—based on Comcast's expert—that “there are intermediate ‘call destinations’ ” along the accused call flows. *Id.* at 54. It further explained that the jury could have “reasonably look[ed] at the claims and conclude[d] that the word ‘a’ before the first use of the term call destination implied that there could be more than one destination....” *Id.*

Sprint likewise contended that there was insufficient evidence to prove that Sprint's accused call flows infringed the asserted claims of the '916 Patent and the '046 Patent because Comcast did not demonstrate that the “parsing” limitation was met. *Id.* at 57–58. The court disagreed again, citing testimony from Dr. Burger. *See id.* at 59–60.

Moreover, Sprint took exception to the district court's decision to tack on prejudgment interest to the \$7.5 million damages award. *Id.* at 65. Sprint maintained that prejudgment interest should only be calculated from the time of first infringement of each **patent** until judgment, rather than from the time of the relevant hypothetical negotiation—here 2006—until judgment. *Id.* More specifically, Sprint insisted that *1309 prejudgment interest should not be applied to the damages relevant to the infringement of the '008 Patent and the '046 Patent because those **patents** had not yet been issued in 2006 (the time when the '916 Patent was issued)—they were only issued in 2012. *Id.* at 65–66.

The district court rejected Sprint's argument, observing that “both sides' experts opined that the reasonable royalty should be a lump sum resulting from a single hypothetical negotiation that took place in 2006” if Sprint were found to infringe all three **patents**. *Id.* at 66 (citing trial transcript). Based on that agreement, the district court concluded that “[a] hypothetical negotiation in 2006 would include each of the asserted **patents**, even if they issued later, and the resulting negotiation would include the fact that two of the **patents** issued later.” *Id.* (citing *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 872 (Fed. Cir. 2010)). Moreover, because of the agreed-upon methodology of using a lump sum award for infringement of all of the **patents**, the district court noted the practical problem of assessing prejudgment interest on a per **patent** basis where the lump sum verdict did not apportion the damages for each **patent**. *See id.*

Sprint has filed a timely appeal. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (2012).

STANDARDS OF REVIEW

[1] [2] [3] The law of the regional circuit controls our standard of review for the denial of a motion for JMOL.³ *E.g.*, *MobileMedia Ideas LLC v. Apple Inc.*, 780 F.3d 1159, 1164 (Fed. Cir. 2015). In the Third Circuit, review of such a denial is without deference. *See, e.g., Rinehimer v. Cemcolift, Inc.*, 292 F.3d 375, 383 (3d Cir. 2002). We “review the record in the light most favorable to the prevailing party ‘unless the record is critically deficient of that minimum quantum of evidence from which a jury might reasonably afford relief.’ ” *Potence v. Hazleton Area Sch. Dist.*, 357 F.3d 366, 370 (3d Cir. 2004) (quoting *Rotondo v. Keene Corp.*, 956 F.2d 436, 438 (3d Cir. 1992)).

[4] [5] [6] [7] The proper construction of a **patent's** claims is an issue of Federal Circuit law, and we apply the framework set forth in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, — U.S. —, 135 S.Ct. 831, 840–42, — L.Ed.2d — (2015). *E.g.*, *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 843 F.3d 1315, 1326 (Fed. Cir. 2016). Under that framework, intrinsic evidence and the ultimate construction of claim terms are reviewed de novo, and underlying factual determinations concerning extrinsic evidence are reviewed for clear error. *See id.* “Where an infringement verdict relies on incorrect construction of the disputed claim terms, this court may grant JMOL or order a new trial to correct the error, depending on the degree of difference between the incorrect construction and the correct construction.” *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1333 (Fed. Cir. 2008). “If no reasonable jury could have found infringement under the proper claim construction, this court may reverse a district court's denial of JMOL without remand.” *Id.* (citing *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1255–57 (Fed. Cir. 2005)).

[8] Determination of infringement is a question of fact, which, in the context of a jury trial, we review for substantial evidence. *1310 *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 308 F.3d 1167, 1177 (Fed. Cir. 2002) (citing *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1423 (Fed. Cir. 1997)).

DISCUSSION

A. Construction of “Switched Telecommunication System” in the Asserted Claims of the '008 Patent

[9] Sprint contends that the proper construction of “switched telecommunication system” must be one that excludes any element of a datagram-based system, so as to render it consistent with the “fundamental requirement” of the '008 Patent, which is that a phone call must “travel[] over a predetermined bearer channel *all the way* from the caller to the call destination.” Appellant Br. at 32–33 (emphasis added). Sprint's insistence is not only unpersuasive, but also irrelevant because the infringement verdict would remain unaffected even under its narrower construction.

[10] [11] We may affirm the jury's findings on infringement if substantial evidence appears in the record supporting the jury's verdict, and if correction of errors in claim construction would not have changed the verdict, given the evidence presented. See *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed. Cir. 2002) (citing *Weinar v. Rollform Inc.*, 744 F.2d 797, 808 (Fed. Cir. 1984)). Prejudicial error here requires “sufficient evidence ... to support a finding of non-infringement under a correct instruction.” *CytoLogix Corp. v. Ventana Med. Sys., Inc.*, 424 F.3d 1168, 1174 (Fed. Cir. 2005) (alteration omitted) (quoting *Ecolab, Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1374 (Fed. Cir. 2002)).

Here, even if “switched telecommunication system” were construed so as to exclude any element of a data-gram-based system, Sprint has not demonstrated how the relevant accused call flows do not infringe the '008 Patent. In other words, Sprint has not shown prejudice. Sprint does not dispute that its CDMA Network is where a call is initiated or set up and that the CDMA Network is a switched telecommunication system having no datagram-based elements. See Appellant Br. at 39–40.

Moreover, adoption of Sprint's construction would not permit it to argue that the '008 Patent requires a call to travel “exclusively” over a switched telecommunication system. See *id.* at 16 (“None of the accused call flows travels exclusively over a switched network or predetermined bearer channels. Instead, each starts on Sprint's CDMA network, travels through Sprint's ... IMS ... network (a packet-based network), and eventually returns to the CDMA network or the CDMA air interface for routing to the called handset.” (footnotes omitted)). The claim language does not demand this. Claims 1 and 13 only require “*initiating* a call through the switched telecommunication system,” '008 Patent col. 32 ll. 46–55; *id.* col. 33 ll. 31–40 (emphasis added), and claim 27 only requires “*setting up* a call through the switched telecommunication system,” *id.* col. 34 ll. 39–47 (emphasis added). These claims do not state that after a call is either initiated or set up through a switched telecommunication system, the call must also travel exclusively on that system to a particular destination.

The specification also does not support the construction that Sprint desires. It reveals that the '008 Patent is not directed to methods of transmitting an entire call from a calling party's phone to the called party's phone; rather, it is directed to methods, consistent with the claim language, for initiating or setting up a call intended for transmission to a called party. *1311 See *id.* col. 1 ll. 27–30 (“The present invention relates to a method of accessing service resource items that are *intended to be used in setting up* bearer channels through a switched telecommunications system.” (emphasis added)). And figure 15 in the specification expressly contemplates a call that does not travel exclusively on a switched telecommunication system. See *id.* fig. 15; see also *id.* col. 27 ll. 10–14.

To support its theory that the '008 Patent requires a call to travel exclusively on a switched telecommunication system, Sprint relies on the specification's explanation that datagram-based elements are “logically distinct” from the switched telecommunication system. See Appellant Br. at 35–36 (citing '008 Patent col. 11 l. 65–col. 12 l. 2). The specification explains that “[t]he intention of requiring the computer network to be logically distinct from the [switched] telecommunication[] system is to exclude computer networks that are dedicated to the management or monitoring of the bearer network and effectively form part of the [switched] telecommunication[] system itself.” '008 Patent col. 11 ll. 50–55. This explanation, however, does not suggest that a call either initiated or set up on a switched telecommunication system cannot traverse any datagram-based elements once it leaves the system.

Accordingly, we sustain the jury's verdict of infringement of claims 1, 13, and 27 of the '008 Patent because there is substantial evidence that the relevant accused call flows were either initiated or set up on a switched telecommunication system.

B. Sufficiency of Evidence for “Call Destination” Limitation in Asserted Claims 1 and 13 and “Identifier of a Second Party” Limitation in Asserted Claim 27 of the '008 Patent

[12] Sprint next complains that there was insufficient evidence for the jury to find that the “call destination” limitation of claims 1 and 13 of the '008 Patent—which the jury was instructed to apply its plain and ordinary meaning because neither party asked for a construction—was met by the relevant accused call flows. *See* Appellant Br. at 41–50. According to Sprint, Comcast only presented evidence that a call destination was *any point* on a call flow, but a call destination must be the “final point on the path of a call.” *Id.* at 43. We disagree with Sprint as there is substantial evidence to support the jury's finding that the relevant accused call flows met the “call destination” limitation.

[13] Sprint “is essentially [proffering] a claim construction argument regarding the meaning of the term [‘call destination’] ... in the guise of a challenge to the sufficiency of the evidence of infringement.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 520 (Fed. Cir. 2012). Sprint invites the court to construe the meaning of a call destination as the final point on the path of a call. But if Sprint “desired such a narrow definition, it could (and should) have sought a construction to that effect.” *ePlus*, 700 F.3d at 520; *see also Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1321 (Fed. Cir. 2003) (“[W]here the parties and the district court elect to provide the jury only with the claim language itself, and do not provide an interpretation of the language in the light of the specification and the prosecution history, it is too late at the JMOL stage to argue for or adopt a new and more detailed interpretation of the claim language and test the jury verdict by that new and more detailed interpretation. The verdict must be tested by the charge actually given and by giving the ordinary meaning of the language of the jury instruction.”). “In the absence of such a construction, however, the jury was free to rely on the plain and ordinary meaning of *1312 the term....” *ePlus*, 700 F.3d at 520. And Sprint “has not met its burden of showing that it has the only reasonable view of the claim [limitation]....” *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1048 (Fed. Cir. 2016). As the district court correctly explained, the jury could have “reasonably look[ed] at the claims and conclude[d] that the word ‘a’ before the first use of the term call destination implied that there could be more than one destination” rather than exclusively referring to the call's final destination. J.A. at 54.

In light of this, the jury reasonably relied on Dr. Burger's testimony that the relevant accused call flows were routed to at least one call destination. Dr. Burger testified that the various servers inside the IMS core, such as the MGC and the SBC, were call destinations because the CSCF routed calls to those servers. *Id.* at 4439, 4541–42. This testimony from Dr. Burger did not, as Sprint suggests, invite the jury to find that *any point* along the accused call flows was a “call destination.” These were specific servers in the IMS core.

[14] Sprint's complaints regarding the “identifier of a second party” limitation in claim 27 of the '008 Patent⁴ are similar to those that it lodges against the “call destination” limitation in claims 1 and 13. *See* Appellant Br. at 45. But for the reasons we reject that a “call destination” must be the final point on a path of a call, we also reject that an “identifier of a second party” must be a “unique identifier of a second party.” First, if Sprint wanted this restrictive construction of the term, it should have sought one. But it never did and now is too late. *See ePlus*, 700 F.3d at 520; *see also Hewlett-Packard*, 340 F.3d at 1321. Second, the jury reasonably relied on Dr. Burger's testimony that the term means “how you get to [a] second party” and that DNS signaling in the IMS core determined an identifier of a second party, which could include the SBC inside the IMS core. *See* J.A. at 4539–41.

Because substantial evidence demonstrates that the “call destination” limitation in claims 1 and 13 and the “identifier of a second party” limitation in claim 27 were met, we sustain the jury's verdict that Sprint infringed these claims of the '008 Patent.

C. Construction of “Parsing” in Asserted Claims of the '916 Patent and the '046 Patent

[15] Sprint also attacks the district court's claim construction of the term “parsing” in the asserted claims of the '916 Patent and the '046 Patent. See Appellant Br. at 50–57. Specifically, Sprint faults the district court for refusing to find disclaimers in the prosecution histories and imposing limitations on the scope of “parsing.” *Id.* at 50. But Sprint fails to identify any prejudice associated with the district court's claim construction as it never explains in its opening brief how its purportedly correct and narrower claim construction would have affected the infringement verdict. See *CytoLogix*, 424 F.3d at 1174.

Sprint notes that page fifty of its opening brief explained how it was prejudiced. Reply Br. at 21 n.7 (citing Appellant Br. at 50). We disagree. For example, Sprint does not explain how the relevant accused call flows do not practice the asserted *1313 claims under its narrower claim construction. Sprint has thus waived any arguments concerning how it was prejudiced by a broader construction of “parsing.” See *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319 (Fed. Cir. 2006) (“Our law is well established that arguments not raised in the opening brief are waived.” (citation omitted)); see also *Fresenius USA, Inc. v. Baxter Int'l, Inc.*, 582 F.3d 1288, 1304 (Fed. Cir. 2009) (“[The appellant] failed to clearly explain what result would occur if this court adopted [the appellant's] proposed claim constructions. [The appellant] gave this court little guidance and cited no record support regarding why a modified claim construction would affect the infringement judgment, the validity judgment, or both. For that reason alone, we may decline to consider [the appellant's] claim construction arguments.”). Consequently, we sustain the jury's verdict that Sprint infringed the asserted claims of the '916 Patent and the '046 Patent.

[16] [17] [18] Even without the waiver, we agree with the district court's construction of “parsing,” and its rejection of Sprint's prosecution disclaimer arguments concerning this term. “[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.” *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed. Cir. 2003). Where the prosecution history is ambiguous or susceptible to “multiple reasonable interpretations” as to any alleged disavowal, we decline to find prosecution disclaimer. *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1359 (Fed. Cir. 2003); *Omega Eng'g*, 334 F.3d at 1325.

The district court construed “parsing” as “[a]n automated process of analyzing a string according to a set of rules of a grammar.” J.A. at 40. But Sprint seeks a narrower construction, contending that during the reexaminations of the '916 Patent and the '046 Patent, “Comcast distinguished ‘parsing’ from ‘predetermined association’ and other processes such as ‘mapping,’ ‘lookup,’ and ‘translating’ ” to avoid having the asserted claims rejected. Appellant Br. at 52. While Comcast did make statements indicating that such processes are not the same as “parsing,” when read in context, we do not read those statements as necessarily excluding any form of these processes from “parsing.” See, e.g., *Lucent Techs., Inc. v. Gateway, Inc.*, 525 F.3d 1200, 1211–12 (Fed. Cir. 2008) (“[T]he arguments made by the applicants during prosecution clearly distinguish the claimed method from that of [the prior art], but do not constrain the definition of [the disputed claim term] as urged by the defendants.”). Accordingly, we see no reason to disturb the district court's claim construction or the jury verdict.

D. Prejudgment Interest

[19] [20] After an infringement finding, “the court shall award ... damages adequate to compensate for the infringement ... together with interest and costs...” 35 U.S.C. § 284 (2012). “[P]rejudgment interest should be awarded under § 284 absent some justification for withholding such an award.” *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 657, 103 S.Ct. 2058, 76 L.Ed.2d 211 (1983); see also *Energy Transp. Grp., Inc. v. William Demant Holding A/S*, 697 F.3d

1342, 1358 (Fed. Cir. 2012). We review the district court's award of prejudgment interest for an abuse of discretion. *Gen. Motors Corp.*, 461 U.S. at 657, 103 S.Ct. 2058; *see also Energy Transp. Grp.*, 697 F.3d at 1358.

[21] Sprint contends that the district court erroneously charged Comcast prejudgment interest from 2006 forward even *1314 though neither the '008 Patent nor the '046 Patent had issued at that point. Appellant Br. at 57–64. Specifically, because neither of those two patents had issued yet, there could be no infringement as a matter of law for them in 2006. In Sprint's view, accordingly, the district court's award of prejudgment interest was an abuse of discretion because the court should have calculated prejudgment interest from the time of first infringement of each of the three infringed patents until judgment. In other words, Sprint contends the district court should have apportioned the prejudgment interest calculations based on the royalty periods covered by the individual patents. *See id.* While in other contexts Sprint's contentions might be well taken, they are not here.

The parties' experts agreed that any damage award should take the form of a lump sum royalty payment. And, the jury was told that the lump sum royalty payment should run from the date of the earliest relevant hypothetical negotiation. Specifically, Comcast's damages expert, Ms. Carla Mulhern, explained to the jury how it was to calculate damages as follows:

Q. So when would this hypothetical negotiation have taken place had it actually taken place?

A. The hypothetical negotiation is set at the time of first infringement. So, in this case, it's a little complicated because we have multiple patents.

So if the '916 Patent is found to be infringed by Sprint, the hypothetical negotiation would have occurred at the time of first infringement of the '916 Patent, which is in late 2006....

If Sprint is not found to have infringed the '916 Patent, but only either the '046 or '008 patents, which issued much later, then the hypothetical negotiation would occur in 2012 at the time of first infringement of those patents.

J.A. at 4593–94. Sprint's damages expert Dr. Debra Aron agreed with Ms. Mulhern's statements on the timing of the hypothetical negotiation:

Q. You agree with Ms. Mulhern that if the '916 Patent or any combination of patents that includes the '916 Patent is found to be infringed, then the appropriate date for the hypothetical negotiation for all infringed patents in this case is late 2006; correct?

A. Yes, that's right.

Q. And the analysis that both you and Ms. Mulhern have done, you understand is directed to a lump sum royalty through the time of trial; correct?

A. That's what it should be, yes.

Q. And you and she agree on that point; correct?

A. I think we agree on that point.

Id. at 4974–75. The jury was also told that the hypothetical negotiators would have employed the “book of wisdom,” looking forward in time from the date of the first hypothetical negotiation to account for “all information that would have been relevant to the parties in coming to and arriving at a deal.” *Id.* at 66; *id.* at 4594–95. Both experts agreed that this information would have included the issuance of any later patent relating to the same technology. *Id.* at 4593–95; *id.* at 5002–03.

As the verdict form reflects, the jury found that claims in all three of the Low **patents** were infringed. *Id.* at 46–47. And as it was invited to do, the jury then awarded Comcast a lump sum royalty in the amount of \$7.5 million. *Id.* at 47. That award necessarily was predicated on a hypothetical negotiation occurring in 2006. Because the jury found the '916 **Patent** infringed and the hypothetical negotiation to have occurred in 2006 there was only one damage award for the district court to consider when assessing the dollar figure against which prejudgment interest should *1315 be measured and the date from which it was to run. There was, accordingly, neither a basis for the district court to apportion prejudgment interest nor a need for the district court to undertake such apportionment.⁵

[22] Prejudgment interest runs from the earliest date of infringement for any **patent** issued at the time of the hypothetical negotiation; here, the '916 **Patent** indisputably had been issued by 2006. We see no abuse of discretion in the district court's assessment of prejudgment interest against Sprint based on the entire royalty award. See *Bio-Rad Labs., Inc. v. Nicolet Instrument Corp.*, 807 F.2d 964, 969 (Fed. Cir. 1986) (“[T]he purpose of prejudgment interest ... is ‘to ensure that the **patent** owner is placed in as good a position as he would have been had the infringer entered into a reasonable royalty agreement.’” (quoting *Gen. Motors Corp.*, 461 U.S. at 655, 103 S.Ct. 2058)); cf. *Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1561 n.8 (Fed. Cir. 1983) (“Since the parties treated the mechanical and process **patents** as a unitary licensing property, we need not consider damages for infringement of each **patent** individually. Under other circumstances it may well be necessary to determine damages separately for each such **patent** since a **patent** owner has every right to demand royalties for each **patent** he holds.”).

CONCLUSION

For the preceding reasons, we **AFFIRM** the judgment entered by the district court.

All Citations

850 F.3d 1302, 121 U.S.P.Q.2d 1906

Footnotes

- 1 The Low **Patents** share the same specification so we cite to the '008 **Patent** for convenience.
- 2 Other **patents** from the Low family were also asserted against Sprint, but they are irrelevant to this appeal as they were not part of the trial.
- 3 In moving for a new trial before the district court, Sprint merely rehashed its arguments for why it deserved judgment as a matter of law. Because we assess those arguments in the context of its JMOL motion, we need not address them again in the context of its motion for a new trial.
- 4 Claim 27 reads:
A method, comprising:
receiving a request from a first party;
determining by a computer, responsive to the request, an identifier of a second party using domain name system signaling;
setting up a call through the switched telecommunication system between the first party and the second party that was determined as a result of said domain name system signaling.
- 5 The district court properly rejected Sprint's suggestion that it could have determined what portion of the jury's award was attributable to each **patent**, based on the damages methodology employed by Ms. Mulhern. See J.A. at 66. The jury's award was less than half of what Ms. Mulhern proposed, thereby indicating that the jury did not actually follow her proposal. See Appellee Br. at 60 (citing J.A. at 47, 4635).