

United States Court of Appeals for the Federal Circuit

03-1615

NTP, INC.,

Plaintiff-Appellee,

v.

RESEARCH IN MOTION, LTD.,

Defendant-Appellant.

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Appealed from: United States District Court for the Eastern District of Virginia

Judge James R. Spencer

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NTP, INC.,

Plaintiff-Appellee,

v.

RESEARCH IN MOTION, LTD.,

Defendant-Appellant.

DECIDED: December 14, 2004

Before MICHEL, SCHALL, and LINN, Circuit Judges.

LINN, Circuit Judge.

Research In Motion, Ltd. (“RIM”) appeals from a judgment of the U.S. District Court for the Eastern District of Virginia (“district court”) entered in favor of NTP, Inc. (“NTP”) following a jury verdict that RIM’s BlackBerry™ system infringed NTP’s U.S. Patents Nos. 5,436,960 (“the ’960 patent”); 5,625,670 (“the ’670 patent”); 5,819,172 (“the ’172 patent”); 6,067,451 (“the ’451 patent”); and 6,317,592 (“the ’592 patent”) (collectively, “the patents-in-suit”) and awarding damages to NTP in the amount of \$53,704,322.69. NTP, Inc. v. Research in Motion, Ltd., No. 3:01CV767 (E.D. Va. Aug. 5, 2003) (“Final Judgment”). The court, in a final order also appealed by RIM, permanently enjoined any further infringement by RIM, but stayed the injunction

pending this appeal. We conclude that the district court erred in construing the claim term “originating processor,” but did not err in construing any of the other claim terms on appeal. We also conclude that the district court correctly found infringement under 35 U.S.C. § 271(a), correctly denied RIM’s motion for judgment as a matter of law (“JMOL”), and did not abuse its discretion in denying evidentiary motions. Thus, we affirm-in-part, vacate-in-part, and remand for further proceedings.

I. BACKGROUND

The technology at issue relates to systems for integrating existing electronic mail systems (“wireline” systems) with radio frequency (“RF”) wireless communication networks, to enable a mobile user to receive email over a wireless network.

A. Overview of Electronic Mail Technology

Traditional email systems operate in the following manner: To send an email, a user begins by composing a message in his or her email client. An “email client” is a user interface, such as Microsoft Outlook™, Eudora™, or Hotmail™, that organizes and displays a user’s email messages and provides the user with a means of creating and sending email messages. The message begins with a specific destination address, i.e., `jdoe@***.com`, that corresponds to the recipient’s user identification, “jdoe,” and his or her internet service provider (“ISP” or “host”), “***.com.” See generally Andrew S. Tanenbaum, Computer Networks 592-611 (4th ed. 2003). When the message is sent, it is transferred first from the sender’s machine to his or her ISP. Id. at 607. The sender’s host then uses a domain name server to identify the recipient’s ISP mail server and its associated internet protocol (“IP”) address. Id. A connection is then established by the sender’s host with the recipient’s ISP mail server, facilitating transfer of the message.

Id. at 607-08. The message is next sorted by the recipient's ISP mail server into the recipient's particular "mailbox," where it is stored until the recipient initiates a connection with the server and downloads the message off the server onto his or her personal machine. This configuration is commonly referred to as a "pull" system because emails cannot be distributed to the user's machine without a connection being initiated by the user to "pull" the messages from the mail server.

B. Problems With the Prior Art Systems

As societal dependence on email and computers increased throughout the 1990s, so did the demand for mobile internet access. See generally Richard Duffy & Denis Gross, "World Without Wires," 22 Communications Int'l 72 (June 1995) (describing "user demand" as "one of the most important driving factors behind the mobile data market"). The increased portability of computers via laptop machines exacerbated this demand. See id.; '960 patent, col. 4, ll. 19-39. Available methods of remote internet access were cumbersome and inefficient for the traveling businessperson, however, as the patents-in-suit explain:

As personal computers are used more frequently by business travellers, the problem of electronic mail delivery becomes considerably more difficult. A business traveller carrying a portable PC has great difficulty in finding a telephone jack to connect the PC to fetch electronic mail from either a host computer or a gateway switch. Connections for a PC's modem are difficult to find in airports Hotels and motels often have internal PABX's that prevent calls from automatically being placed by the user's PC to electronic mail gateway switches to receive information. . . . The inability to find an appropriate connection to connect the PC modem when travelling has contributed to the degradation of electronic mail reception when the recipient is travelling.

'960 patent, col. 3, l. 60 – col. 4, l. 12. RIM's technical documentation for its BlackBerry products echoes the undesirability of these constraints:

Typically, mobile professionals use a laptop when traveling and dial-in to the corporate email server from a hotel room to manage an inbox full of email. The more adventurous use special software to send email notification to a pager or cell phone so they know what is in their inbox before spending the time and effort to dial-in. Focus groups and market research on mobile email revealed common complaints with dialing-in – the inconvenience of lugging a laptop around just for email; the trouble of finding a connection and dialing-out of the hotel; the difficulty of negotiating corporate dial-in security; and the cost of phone charges when dialing-in to the corporate server.

Research in Motion Ltd., Technical White Paper BlackBerry Enterprise Edition™ 3 (2001) ("White Paper").

C. The Patents-in-Suit

Inventors Thomas J. Campana, Jr.; Michael P. Ponschke; and Gary F. Thelen (collectively "Campana") developed an electronic mail system that was claimed in the '960, '670, '172, '451, and '592 patents. The '960 patent, filed on May 20, 1991, is the parent of a string of continuation applications. The most recent patent, the '592 patent, filed December 6, 1999, is a continuation of the '451 patent, filed September 28, 1998. The '451 patent, in turn, is a continuation of the '172 patent, which itself originates from the '670 patent, a direct continuation of the parent '960 patent. As continuations of that single parent application, these patents contain the same written descriptions as the '960 patent. NTP now owns these five patents-in-suit.

Campana's particular innovation was to integrate existing electronic mail systems with RF wireless communications networks. See '960 patent, col. 18, ll. 32-39. In simplified terms, the Campana invention operates in the following manner: A message

originating in an electronic mail system may be transmitted not only by wireline but also via RF, in which case it is received by the user and stored on his or her mobile RF receiver. The user can view the message on the RF receiver and, at some later point, connect the RF receiver to a fixed destination processor, i.e., his or her personal desktop computer, and transfer the stored message. Id. at col. 18, ll. 39-66. Intermediate transmission to the RF receiver is advantageous because it “eliminat[es] the requirement that the destination processor [be] turned on and carried with the user” to receive messages. Id. at col. 18, ll. 44-46. Instead, a user can access his or her email stored on the RF receiver and “review . . . its content without interaction with the destination processor,” id. at col. 18, l. 67 – col. 19, l. 1, while reserving the ability to transfer the stored messages automatically to the destination processor, id. at col. 19, ll. 1-2. The patents-in-suit do not disclose a method for composing and sending messages from the RF receiver.

D. The Accused System

RIM is a Canadian corporation with its principal place of business in Waterloo, Ontario. RIM sells the accused BlackBerry system, which allows out-of-office users to continue to receive and send electronic mail, or “email” communications, using a small wireless device. The system utilizes the following components: (1) the BlackBerry handheld unit (also referred to as the “BlackBerry Pager”); (2) email redirector software (such as the BlackBerry Enterprise Server (“BES”), the Desktop Redirector, or the Internet Redirector); and (3) access to a nationwide wireless network (such as Mobitex, DataTAC, or GPRS).

The BlackBerry system uses “push” email technology to route messages to the user’s handheld device without a user-initiated connection. There are multiple BlackBerry email “solutions” that interface with different levels of the user’s email system. In the Desktop solution, the BlackBerry email redirector software, the Desktop Redirector, is installed on the user’s personal computer. In the Corporate solution, different BlackBerry email redirector software, the BES program, is installed on the organizational user’s mail server, where it can function for the benefit of the multiple users of that server. Also at issue in this case is RIM’s Internet solution of the BlackBerry system. The Internet solution operates in a manner similar to the Corporate solution, but it executes a different email redirector software, Internet Redirector. In either version, the BlackBerry email redirector software merges seamlessly with the user’s existing email system. The operation of the email redirector software is transparent to the user’s desktop email client and the organizational user’s mail server. That is, the user’s email system does not recognize or incorporate the BlackBerry wireless system into its operation. No modification of the underlying email system is required to run RIM’s wireless email extension. When new mail is detected in the Desktop solution, the Desktop Redirector is notified and retrieves the message from the mail server. It then copies, encrypts, and routes the message to the BlackBerry “Relay” component of RIM’s wireless network, which is located in Canada. In the Corporate solution, the BES software performs this same function but intercepts the email before the message reaches the individual user’s personal computer. The individual user’s personal computer need not be turned on for the BES software to properly redirect the user’s emails. However, the user retains some control over message forwarding by

using the BlackBerry “Desktop Manager.” This additional software permits the user to specify his or her email redirection preferences. In both systems, the message travels through the BlackBerry Relay, where it is translated and routed from the processors in the user’s email system to a partner wireless network. That partner network delivers the message to the user’s BlackBerry handheld, and the user is “notified virtually instantly” of new email messages. White Paper at 6. This process, accomplished without any command from the BlackBerry user, is an example of “push” email architecture. Id. There are significant advantages to “push” email architecture. Most importantly, the user is no longer required to initiate a connection with the mail server to determine if he or she has new email. As RIM’s technical literature explains, “[b]y having the desktop connect to the user, time spent dialing-up and connecting to the desktop (possibly to find that there is no new email) is eliminated as users . . . are notified virtually instantly of important messages, enabling the user to respond immediately.” Id.

RIM’s system also permits users to send email messages over the wireless network from their handhelds. This functionality is achieved through the integration of an RF transmitter and a processor in the BlackBerry handheld unit. The processor allows the user to manipulate, view, and respond to email on his or her BlackBerry handheld. Sending a message from the handheld requires the same steps as the process for receiving email, only in reverse. When the user composes a message on his or her handheld, it is sent back to that user’s desktop machine over the partner and BlackBerry wireless networks. The BlackBerry email redirector software then retrieves the outgoing message from the user’s mail server and places it in the user’s desktop email software, where it is dispersed through normal channels. In this way, messages

sent from the BlackBerry handheld are identical to messages sent from the user's desktop email—they originate from the same address and also appear in the "sent mail" folder of the user's email client.

E. Procedural History

On November 13, 2001, NTP filed suit against RIM in the U.S. District Court for the Eastern District of Virginia. NTP alleged that over forty system and method claims from its several patents-in-suit had been infringed by various configurations of the BlackBerry system (comprised of the numerous handheld units; the BES, the Desktop Redirector, and the ISP Redirector software; and the associated wireless networks).

In an Order dated August 14, 2002, the district court construed thirty-one disputed claim terms. NTP, Inc. v. Research in Motion, Ltd., No. 3:01CV767 (E.D. Va. Aug. 14, 2002) ("Claim Construction Order"). In that Order, the district court "construed the disputed terms according to their plain and ordinary meaning, as supported by the specification and prosecution history." Id., slip op. at 3. The Order listed the claim terms in contention and their corresponding constructions without additional reasoning or analysis. See id., slip op. at 4-9. A series of summary judgment motions followed the court's Markman decision. Setting forth several alternate theories, RIM asked for summary judgment of both non-infringement and invalidity. The issues raised in two of RIM's summary judgment motions remain relevant on appeal: RIM argued (1) that the asserted claims, properly construed, did not read on the accused RIM systems, see NTP, Inc. v. Research in Motion, Ltd., No. 3:01CV767 (E.D. Va. Aug. 5, 2003) (nunc pro tunc Oct. 23, 2002) ("Non-infringement Order"), and (2) that the physical location of the "Relay" component of the BlackBerry system put RIM's allegedly infringing conduct

outside the reach of 35 U.S.C. § 271, see NTP, Inc. v. Research in Motion, Ltd., No. 3:01CV767 (E.D. Va. Aug. 5, 2002) (nunc pro tunc Oct. 23, 2002) (“Section 271 Order”). The district court denied all of RIM’s summary judgment motions.

For its part, NTP asked the district court to grant partial summary judgment of infringement on four claims of the patents-in-suit. In its motion, NTP argued: (1) that the 800 and 900 series BlackBerry handheld units infringed claim 248 of the ’451 patent and claim 150 of the ’592 patent; (2) that the BES software infringed claim 653 of the ’592 patent; and (3) that the BlackBerry system, software, and handhelds infringed claim 15 of the ’960 patent. See NTP, Inc. v. Research in Motion, Ltd., No. 3:01CV767 (E.D. Va. Nov. 4, 2002) (“Order Granting Summary Judgment of Infringement”). RIM cross-moved for summary judgment of non-infringement, arguing that its products lacked certain limitations required by the asserted claims. Id., slip op. at 4. The district court agreed with NTP, holding that “no genuine issue of material fact” existed as to infringement of the four claims. Id. at 26. Accordingly, the district court granted summary judgment, except as to the issue of infringement of claim 15 of the ’960 patent or claim 248 of the ’451 patent by the BlackBerry series 5810 handheld device. That issue was reserved for the jury.

The case proceeded to trial on fourteen claims. The fourteen claims submitted to the jury were: claims 15 (with respect to the series 5810 handheld devices only), 32, and 34 of the ’960 patent; claim 8 of the ’670 patent; claim 199 of the ’172 patent; claims 28, 248 (with respect to the series 5810 handheld devices only), 309, 313, and

317 of the '451 patent; and claims 40, 278, 287,¹ and 654 of the '592 patent. A verdict was rendered on November 21, 2002. On every issue presented, the jury found in favor of the plaintiff, NTP. The jury found direct, induced, and contributory infringement by RIM on all asserted claims of the patents-in-suit. The jury also found that the infringement was willful. It rejected every defense proposed by RIM. Adopting a reasonable royalty rate of 5.7%, the jury awarded damages to NTP in the amount of approximately \$23 million.

Following the jury verdict, RIM moved the court for JMOL or, in the alternative, for a new trial.² The court denied these motions. NTP, Inc. v. Research in Motion, Ltd., No. 3:01CV767 (E.D. Va. May 23, 2003) ("JMOL Order"). On August 5, 2003, the district court entered final judgment in favor of NTP. The court awarded monetary damages totaling \$53,704,322.69, with the following approximate division: (1) compensatory damages of \$33 million; (2) attorneys' fees of \$4 million; (3) prejudgment interest of \$2 million; and (4) enhanced damages of \$14 million. Final Judgment, slip op. at 1. The court also entered a permanent injunction against RIM, enjoining it from further manufacture, use, importation, and/or sale of all accused BlackBerry systems, software, and handhelds. Id. at 2-3. The injunction has been stayed pending this appeal.

¹ Claim 287 is a multiple dependent claim. While the record is unclear, it appears to have been presented to the jury as dependent from claim 150 only.

² After the jury verdict, the United States Patent and Trademark Office initiated re-examination of the '670, '172, '451, and '592 patents, and granted RIM's petition for re-examination of the '960 patent. The re-examination process has yet to be completed.

RIM timely appealed from the district court's final judgment and injunction. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II. ANALYSIS

A. Claim Construction

In the district court, NTP ultimately asserted against RIM, and RIM was found to have infringed, sixteen system and method claims of five different patents owned by NTP. This includes both the claims resolved by the court in NTP's favor on summary judgment and the claims submitted to the jury for a determination of infringement. These claims are: claims 15, 32, and 34 of the '960 patent; claim 8 of the '670 patent; claim 199 of the '172 patent; claims 28, 248, 309, 313, and 317 of the '451 patent; and claims 40, 150, 278, 287, 653, and 654 of the '592 patent.³ All of these claims, with the exception of claim 150 of the '592 patent, are dependent claims. The parental lineage of the adjudicated claims is indicated in the following table:

³ We note that the injunction lists only fifteen claims, omitting claim 287 of the '592 patent. Final Judgment, slip op. at 3. Based on the record before us, we cannot determine why the jury's finding of infringement as to claim 287 was not included in the injunction. Even though claim 287 is not listed in the injunction, it was before the jury and presumptively was factored into the jury's calculation of damages, which is part of the judgment before us on appeal.

Patent	Disputed claim → Parental Lineage				
'960	15	→ 11	→ 1		
	32	→ 28	→ 18		
	34	→ 18			
'670	8	→ 4	→ 1		
'172	199	→ 194			
'451	28	→ 26	→ 1		
	248	→ 247	→ 246		
	309	→ 308	→ 250		
	313	→ 311			
	317	→ 313	→ 311		
'592	40	→ 25	→ 10	→ 4	→ 1
	150				
	278	→ 232	→ 186	→ 171	→ 156 → 150
	287	→ 150			
	653	→ 652			
	654	→ 653	→ 652		

On appeal, RIM challenges the judgment of infringement with respect to each of the asserted claims. RIM argues that the district court erred in construing the claim terms: (a) “electronic mail system” (appearing in the '960, '670, and '172 patents); (b) “gateway switch” (appearing in the '960 patent); and (c) “originating processor” and “originated information” (appearing in the '960, '670, and '592 patents). Further, RIM argues that the district court erred in failing to impose general restrictions on certain asserted claims and in failing to construe certain terms relating to asserted claims; specifically: (d) a “dual pathways” limitation, requiring that at least one destination processor be accessible through both a wireline and an RF pathway (relating to asserted claims of the '960 and '670 patents); (e) a limitation requiring that the RF receiver and destination processor be “separate and distinct” entities (relating to asserted claims of the '960, '670, and '592 patents, and to certain asserted claims of the

'451 patent); and (f) the term “processor outside any electronic mail system” (relating to the '960 patent). We consider each, in turn.

1. Claim Construction Precedent

Because NTP's patents all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents. See, e.g., Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004) (holding that statements made in prosecution of one patent are relevant to the scope of all sibling patents); Laitram Corp. v. Morehouse Indus., Inc., 143 F.3d 1456, 1460 & n.2 (Fed. Cir. 1998) (noting that it was proper to consider the prosecution histories of two related re-examination patents originating from the same parent, to determine the meaning of a term used in both patents). We thus draw distinctions between the various patents only where necessary.

Claim construction presents a question of law that this court reviews de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). We begin our claim construction analysis with the words of the claim. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). “In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to ‘particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention.’ 35 U.S.C. § 112, ¶ 2.” Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). In the absence of an express intent to impart a novel meaning to the claim terms, the words take on the full breadth of the ordinary and customary meanings attributed to them by those of ordinary skill in the art. See, e.g.,

Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources. “Some of these sources include the claims themselves; dictionaries and treatises; and the written description, the drawings, and the prosecution history.” Ferguson Beauregard v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003) (internal citations omitted).

Words often have different meanings to different people and in different contexts, accounting for the multiple ordinary meanings found in dictionaries. Id. Thus, the meaning of the words used in the claims must be discerned not merely from relevant dictionaries but from the context of the written description as examined through the viewing glass of a person skilled in the art. Id. Once the court has construed the claim limitations, the second step in the analysis is to compare the properly construed claims to the accused device. Cybor Corp., 138 F.3d at 1454.

With these general principles in mind, we turn now to RIM’s specific challenges to the district court’s claim construction determinations.

2. Disputed Terms

a. “Electronic Mail System”

The term “electronic mail system” appears in all of the asserted claims of the ’960, ’670, and ’172 patents. For simplicity, we will use claim 1 of the ’960 patent (from which disputed claim 15 is dependent) as an exemplar. Claim 1 of the ’960 patent reads as follows:

1. A system for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in the electronic mail system comprising:

at least one gateway switch in the electronic mail system, one of the at least one gateway switch receiving the originated information and storing the originated information prior to transmission of the originated information to the at least one of the plurality of destination processors;

a RF information transmission network for transmitting the originated information to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors;

at least one interface switch, one of the at least one interface switch connecting at least one of the at least one gateway switch to the RF information transmission network and transmitting the originated information received from the gateway switch to the RF information transmission network; and wherein

the originated information is transmitted to the one interface switch by the one gateway switch in response to an address of the one interface switch added to the originated information at the one of the plurality of originating processors or by the electronic mail system and the originated information is transmitted from the one interface switch to the RF information transmission network with an address of the at least one of the plurality of destination processors to receive the originated information added at the originating processor, or by either the electronic mail system or the one interface switch; and

the electronic mail system transmits other originated information from one of the plurality of originating processors in the electronic mail system to at least one of the plurality of destination processors in the electronic mail system through a wireline without transmission using the RF information transmission network.

'960 patent, col. 49, ll. 2-45 (emphases added).

The district court construed “electronic mail system” as:

A type of communication system which includes a plurality of processors running electronic mail programming wherein the processors and the electronic mail programming are configured to permit communication by way of electronic mail messages among recognized users of the electronic mail system. The various constituent processors in the electronic mail system typically function as both “originating processors” and “destination processors.”]

Claim Construction Order, slip op. at 4.

RIM argues there are two ordinary meanings of “electronic mail system”: a broad definition that encompasses “communicating word processors, PCs, telex, facsimile, videotex, voicemail and radio paging systems (beepers)” and a narrow definition that defines the term in the context of “pull” technology. Asserting that Campana endorsed the pull technology definition during prosecution, RIM argues that “electronic mail system” includes a pull technology requirement. RIM also argues that during prosecution Campana characterized an “electronic mail system” as a wireline system to distinguish over the Zabarsky reference. Thus, RIM argues that “electronic mail system” requires a processor interconnected with other processors to serve the common purpose of providing electronic mail services to end users through pull technology while utilizing wireline, point-to-point connections.

NTP responds that the district court’s claim construction of “electronic mail system” is correct and is consistent with the written description. NTP contends that RIM’s proposed construction of “electronic mail system” as requiring pull technology contravenes the plain language of the claim and is inconsistent with Campana’s disclosure. Further, NTP argues that RIM never raised its pull technology claim construction at the Markman hearing, but in fact argued the opposite. Finally, NTP argues that RIM’s requirement that “electronic mail system” be limited to a wireline only system simply cites the prior art description of those terms, and not Campana’s use of the term as including wireless connections.

At the outset, we note that NTP correctly points out that RIM did not argue its pull technology construction before the district court, instead arguing that an electronic mail system is limited to a wireline only system. See J.A. at 2821-22 (arguing that “electronic

mail system” should be construed as “a system of single processors or groups of processors linked by a wire line system, such as the PSTN [(“Public Switch Telephone Network”)], that provides a system for transmitting information between at least two computers”). We have previously held that presenting proposed claim constructions which alter claim scope for the first time on appeal invokes the doctrine of waiver as to the new claim constructions. See CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1370 (Fed. Cir. 2002) (“[A] waiver may occur if a party raises a new issue on appeal, as by, e.g., presenting a new question of claim scope” (internal quotation marks omitted)); Interactive Gift Express, 256 F.3d at 1346 (“As it relates to claim construction, the doctrine [of waiver] has been applied to preclude a party from adopting a new claim construction position on appeal.”). For the first time on appeal, RIM is attempting to add a pull technology limitation to the claim that it did not raise before the district court. Because RIM failed to raise before the district court the argument that the claim should be limited to pull technology, the argument was waived, and we decline to address it on the merits.

The district court’s claim construction, which includes various architectures of single processors and groups of processors, is correct. The claims themselves recite that an “electronic mail system” includes various configurations of originating processors and destination processors that communicate via wireline connections or over an RF transmission network. See, e.g., ’960 patent, claim 1. Moreover, the written description recognizes that electronic mail systems may have various processor architectures. See, e.g., id. at col. 1, l. 60 – col. 2, l. 22; id. at col. 2, ll. 13-17 (“It should be understood that the illustrated architecture of the single and associated groups of processors is only

representative of the state of the art with numerous variations being utilized.”); see also ’670 patent, col. 1, l. 64 – col. 2, l. 25; ’172 patent, col. 1, l. 65 – col. 2, l. 25.

RIM’s premise that the “electronic mail system” is limited to a wireline only system is flawed. The plain language of the claim 1 preamble recites that the claimed system transmits originated information “from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in the electronic mail system.” ’960 patent, claim 1. Thus, all of the originating and destination processors are recited in the claims as being contained in the “electronic mail system.” This language, however, is not helpful in determining whether the “electronic mail system” may include wireless connections. Accordingly, we turn to the written description.

The written description expressly indicates that the “electronic mail system” in the patent claims may include wireless connections. Campana described prior art “[e]lectronic mail services” as “basically a wire line-to-wire line, point-to-point type of communications” system. Id. at col. 1, ll. 52-54 (emphasis added). The use of the term “basically” suggests that an electronic mail system may include other types of connections, including wireless connections. Moreover, Campana provided an example of one prior art electronic mail system in commercial use, stating “FIG. 1 illustrates a block diagram of a typical electronic mail system in commercial use such as by AT&T Corporation.” Id. at col. 1, ll. 60-62. In this prior art electronic mail system, “groups of processors . . . may be distributed at locations which are linked by the [PSTN]. The individual processors may be portable computers with a modem which are linked to the [PSTN] through wired or RF communications as indicated by a dotted line.” Id. at col. 1,

I. 66 – col. 2, l. 4 (emphasis added). Figure 1 depicts various processors that are all connected to the PSTN via either wired or wireless links. The prior art electronic mail system depicted in Figure 1 is incorporated into Figure 8, which Campana describes as a “block diagram of an electronic mail system in accordance with the present invention.”⁴ Id. at col. 22, ll. 60-61. Accordingly, because RIM’s argument that the term “electronic mail system” cannot include wireless connections contradicts the text and figures of the written description, it must be rejected.

Our review of the prosecution history reveals no disclaimers or disavowals limiting an “electronic mail system” to a wireline only system. RIM cobbles together statements from the prosecution history that refer to an electronic mail system as having wireline connections. While it is true that Campana often focused on wireline connections in describing electronic mail systems, this focus is understandable given his acknowledgment that electronic mail systems are “basically a wire line-to-wire line, point-to-point type of communications” system. Id. at col. 1, ll. 52-54. Contrary to RIM’s assertions, however, Campana did not accept a narrow definition of “electronic mail system” or disclaim subject matter, so as to limit the term “electronic mail system” to a wireline only system. Instead, Campana expressly stated that information sent between the originating and destination processors located in “an electronic mail system” in his invention could be accomplished either through the RF transmission network or a wireline. See Amendment Pursuant to 37 C.F.R. § 1.116, at 19-20 (Nov. 7, 1994).

⁴ We concede that the wireless connections disclosed in the written description appear to involve “pull” access. This has no impact on our analysis, however, for two reasons. First, as we held above, RIM has waived any argument for adding a “pull” limitation. Second, RIM argues that the term “electronic mail system” as used in the patents-in-suit is limited to an all “‘wireline’ system.” Thus, any wireless connection, even a pull connection, suffices to defeat RIM’s argument.

Because we discern no error, we affirm the district court’s claim construction of “electronic mail system.”

b. “Gateway Switch”

The term “gateway switch” appears only in the asserted claims 15, 32, and 34 of the ’960 patent. As before the district court, RIM bases its construction of the term on its argument that Campana’s “electronic mail system” implemented a “pull” email architecture. RIM contends that “a gateway switch is the mechanism for maintaining the mailboxes needed to implement the pull technology.” The district court construed the term differently, as “[a] processor in an electronic mail system which connects other processors in that system and has additional functions for supporting other conventional aspects of the electronic mail system such as receiving, storing, routing, and/or forwarding electronic mail messages.” Claim Construction Order, slip op. at 6. As we have previously rejected RIM’s argument that “pull” email architecture is required, see Section II.A.2.a, supra (construing “electronic mail system”), we are similarly compelled to reject its suggestion that “gateway switches” must enable this technology. In short, we agree with the district court’s claim construction of “gateway switch.”

c. “Originating Processor” and “Originated Information”

The parties dispute the construction of the term “originating processor” recited in the claims of the ’960, ’670, and ’592 patents⁵ and “originated information” recited in the

⁵ This term appears in all of the asserted claims of the ’960 and ’670 patents, and in parent claim 25 of asserted claim 40 of the ’592 patent. A variation, “originating device,” is used in claims 40, 150, 278, 287, 653, and 654 of the ’592 patent. “Originating device” was separately construed by the district court and that construction has not been appealed.

claims of the '960, '670, '592, and '451 patents.⁶ Claim 1 of the '960 patent, from which claim 15 ultimately depends, again is exemplary and states in pertinent part:

1. A system for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in the electronic mail system comprising:

at least one gateway switch in the electronic mail system, one of the at least one gateway switch receiving the originated information and storing the originated information prior to transmission of the originated information to the at least one of the plurality of destination processors;

a RF information transmission network for transmitting the originated information to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors;

at least one interface switch, one of the at least one interface switch connecting at least one of the at least one gateway switch to the RF information transmission network and transmitting the originated information received from the gateway switch to the RF information transmission network; and wherein

the originated information is transmitted to the one interface switch by the one gateway switch in response to an address of the one interface switch added to the originated information at the one of the plurality of originating processors or by the electronic mail system and the originated information is transmitted from the one interface switch to the RF information transmission network with an address of the at least one of the plurality of destination processors to receive the originated information added at the originating processor, or by either the electronic mail system or the one interface switch

'960 patent, col. 49, ll. 2-38 (emphases added).

The district court construed “originating processor” as “[a]ny one of the constituent processors in an electronic mail system that prepares data for transmission

⁶ This term appears in all of the asserted claims of the '960 and '670 patents. A variation, “originating electronic mail,” is used in claims 313 and 317 (both depending from independent claim 311) of the '451 patent. A slightly different variation, “originate the electronic mail,” is used in claims 40 (depending from independent claim 1), 150, 278, and 287 of the '592 patent. We treat these variations as being of identical scope and meaning to the term “originating information” as discussed in our opinion.

through the system.” Claim Construction Order, slip op. at 5. The court construed “originated information” as “[t]he message text of an electronic mail message.” Id., slip op. at 6 (noting an exception for the term as used in a patent which is not disputed on appeal).

RIM argues that “originating processor” is correctly construed to mean a processor that initiates or starts the transmission of data through the system, thereby excluding any of the “constituent processors” in the system which subsequently handle the data. It argues that “originated information” is the electronic mail message generated by an “originating processor.” RIM argues that its constructions are supported by dictionary definitions of the term “originating” and “originate” which impose an “initiating” requirement on the claims. RIM argues that the ’960 patent specification supports this construction, because it describes an “originating processor” as a processor at which an electronic mail message is composed by a person or inputted by a machine.

NTP responds that this dispute centers on whether an “originating processor” can include gateway switches. Before the district court, NTP urged that “originating processor” be construed to include not only “that processor upon which the sender types the message,” but also “all of the constituent processors in an electronic mail system that run electronic mail programming to format and initiate transmission of electronic mail messages.” NTP’s Claim Construction Mem. at 37. NTP argues that RIM’s proposed construction is erroneous because it ignores language in the written description specifying that a gateway switch can originate information, and thus would exclude embodiments in the written description. NTP argues that a construction which

limited “originating processor” to only processors upon which senders actually type the electronic mail message is not required by RIM’s dictionary definitions.

As we shall explain, we conclude that the district court erred in its claim construction of the term “originating processor.” The term “originating processor” is properly construed as “a processor in an electronic mail system that initiates the transmission of a message into the system.” We do not hold that the “originating processor” is always the processor on which text of the email message was created. As a practical matter this will probably be the case. However, there could be a situation where someone composes an email message on one processor, then perhaps transfers the message from the creating processor to the “originating processor” that initiates the message into the electronic mail system; e.g., by copying onto a disk.

Further, we conclude that the district court did not err in construing “originated information” as “[t]he message text of an electronic mail message.” RIM focuses its argument on the term “originating processor.” Indeed, RIM presents no independent argument that “originated information” means anything other than the text of an electronic mail message to be transmitted in the electronic mail system. We see no reason to disturb the district court’s claim construction of the term “originating information.”

We begin with the language of the claims. See PSC Computer Prods., Inc. v. Foxconn Int’l, 355 F.3d 1353, 1359 (Fed. Cir. 2004). Claim 1 of the ’960 patent recites:

1. A system for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in the electronic mail system comprising: . . .

at least one gateway switch in the electronic mail system . . .

at least one interface switch

'960 patent, col. 49, ll. 2-19 (emphases added). Construing “originating processor” to mean the processor that is the origin of the email message text comports with the goal of the system—to move “originated information” from the processor where the email message text originated to the processor(s) where it is intended to be received. Moreover, that construction is consistent with the overall context of the claim language. Claim 1 of the '960 patent contains a number of limitations relating to devices that process data, including, inter alia: “a plurality of originating processors,” “at least one gateway switch,” and “at least one interface switch.” See '960 patent, col. 49, ll. 2-25. Nothing in the claim suggests that “a plurality of originating processors” defines a genus which includes the claimed “gateway switch” or “interface switch” as a species. Instead, these limitations are used as three separate, independent limitations to describe the various constituent components in an electronic mail system that prepares and transmits electronic mail messages. There is no antecedent basis in the claim language to signify that “at least one gateway switch” conceptually is contained within “a plurality of originating processors.” See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1119 (Fed. Cir. 2004) (“While not an absolute rule, all claim terms are presumed to have meaning in a claim.”).

In addition, as claim 1 above recites, the “originated information” originates from the “originating processor.” '960 patent, col. 49, ll. 2-3. Thus, the plain language of the claims indicates that “originating processor” is not referring to every component that initiates data. Rather the “originating processor” is, more precisely, the processor that is the source of the “originated information”—the text of the electronic mail message.

Also, the claim language shows how a gateway switch is not included within the larger term “originating processor,” but is rather a separate component from an “originating processor.” That is because the “originated information” is transmitted from an “originating processor” to a gateway switch. Indeed, the “originating processor” and the gateway switch initiate different types of data. “Originated information”—the electronic mail message—originates with the “originating processor.” By contrast, the gateway switch is never described as being the origin of the “originated information.” Rather, it merely “receives” the “originated information” from the “originating processor.” See, e.g., id. at col. 49, ll. 8-9; ’611 patent, col. 19, ll. 60-63, col. 47, ll. 52-54. A gateway switch may sometimes add or initiate address information such as an address of an interface switch to the “originated information” that it receives from the “originating processor.” See, e.g., ’960 patent, col. 49, ll. 26-37. However, a gateway switch is not the origin of the “originated information” itself. According to the language of the claims, gateway switches are components that receive “originated information” from an “originating processor” and then sometimes append additional data to the information received from an “originating processor.”

The written description is consistent with this interpretation and reveals that two different types of information are “originated” and transmitted within the claimed invention. First, there is “originated information.” As the district court correctly held, “originated information” refers to the text of the electronic mail message being transmitted. One could analogize this to the contents of a physical letter one mails to a recipient via the postal system. Second, in the claimed invention there is also what one might call address information or destination information. This refers to an identifier of

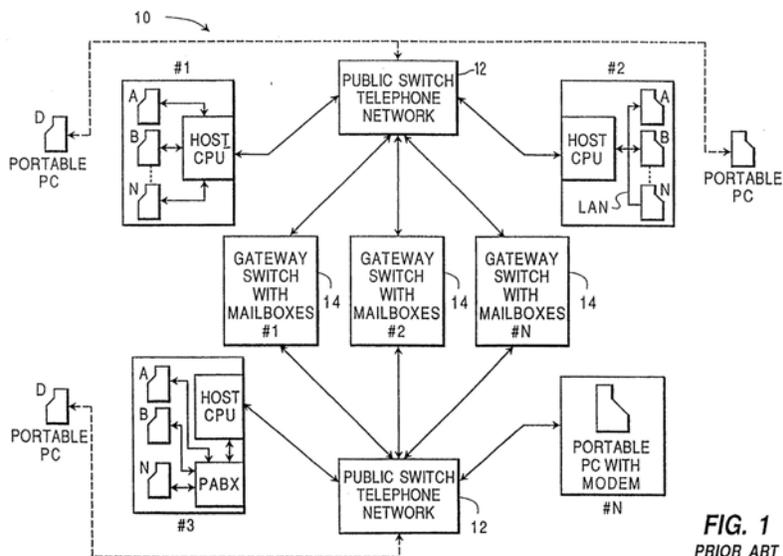
the intermediate components and/or the destination processor(s) to which the electronic message text should be delivered. See, e.g., '960 patent, col. 24, ll. 31-46 (discussing “address of the interface switch” and “identification number of the RF receiver”). Address information originated from a gateway switch or interface switch is never described as itself the “originated information” or the “other originated information.” Rather, it is described as separate information which is added to the “originated information” which came from an originating processor. See, e.g., id. at col. 21, ll. 54-56 (text notes that the address of the interface switch can be added “to the information originating from the originating processor”); id. at col. 22, ll. 24-26 (text notes that the destination address can be “added to the information from the originating processor”); id. at col. 26, ll. 39-41 (text notes adding information to the “information from the originating processor”); id. at col. 49, ll. 27-29 (claims describe “adding” address information to “originated information”); id. at col. 50, ll. 7-10 (text describes movement of both “originated information” and identification number in the RF transmission network); id. at col. 54, ll. 49-51 (text notes identification number “added to the originated information”). This address information can be analogized to the address contained on the outside of an envelope that one mails with the post office, as well as information added by the post office, such as a barcode, which may direct the envelope through the myriad routes in the postal system. Thus, just as one physically mails a letter with two types of information—the text of the actual letter itself within the envelope and the address information on the outside of the envelope—the claimed invention “originates” two types of information.

From the written description, one skilled in the art would understand an “originating processor” to refer to a processor where “originated information”—the electronic mail message text—is introduced into the electronic mail system. In some cases, this “originating processor” is the point at which some or all of the second type of information, the address information, is added. In other cases, after the “originating processor” sends the “originated information” to a gateway switch, the gateway switch then “originates” and appends additional address information onto the “originated information.” A user typing at the originating processor does need to provide at least some address destination information—for example, that the email message is intended for “John Doe.” See, e.g., id. at col. 24, ll. 29-30. However, the user need not know precisely through which switches the email message needs to travel within the system to get to John Doe (or even whether John Doe’s destination processor is a wireless or wireline processor). In the “most user friendly form” of the invention, the user need only indicate the intended recipient, and the proper address information can be added to the text of the electronic mail message either by the originating processor itself or by later components in the electronic mail system, such as gateway switches and/or interface switches. See, e.g., id. at col. 24, ll. 25-30. This is analogous to how, in the postal system, one need only indicate a destination address, and the postal system sometimes adds barcode information to envelopes which help indicate through which routes within the postal network the letter needs to travel to get to the proper destination.

The term “originating processor” does not encompass every constituent processor that initiates data into the system. “Originating processor” refers more precisely to the processor that initiates the electronic message text into the system. It is

correct to conclude that other components besides an “originating processor” “originate” information. For example, components such as the gateway switches originate some of the address information to get the electronic message from the “originating processor” to the proper destination processor(s). However, there is nothing in the written description to suggest that one skilled in the art would blur the distinction between a component such as a gateway switch that sometimes “originates” address information, and an “originating processor,” which is a separately labeled and separately claimed component than a gateway switch or an interface switch.

Referring specifically to the written description, Figure 1 of the '960 patent discloses a prior art electronic mail system in which the “originating processor” is depicted as the processor which originates the email message, which is separate and distinct from other constituent components such as gateway switches:



The specification states that Figure 1 shows that “[c]ommunications between an originating processor A-N, which may be any of the processors within the groups of associated processors #1-#3 or processor #N and a destination processor A-N are

completed through the public switch telephone network 12 to one or more gateway switches . . . 14. '960 patent, col. 2, ll. 23-28 (emphasis added). This passage explains that the electronic mail message originates from the “originating processor” and then moves “to” an associated gateway switch. Thus, the “originating processor” is not a generic term referring to all data-generating constituent processors in a system, but more precisely refers to a processor that is separate from the gateway switches. Moreover, the written description repeatedly refers to the “originating processor” where the electronic mail message text is generated. See, e.g., id. at col. 3, ll. 12-21 (“Finally, the message or message text must be entered which is the information that is inputted by the person or machine which is originating the message at the originating processor A-N. Upon completion of the message text, the user . . . enters a series of commands or keystrokes on the originating processor to transmit the message to the gateway switch” (emphasis added)); id. at col. 19, ll. 29-30 (explaining how, in the claimed invention the “originating processor” might be associated with “an icon driven display” and a computer “mouse” for the user). There is no corresponding discussion of the electronic mail message text being generated with, or the use of “an icon driven display” with, a gateway or interface switch.

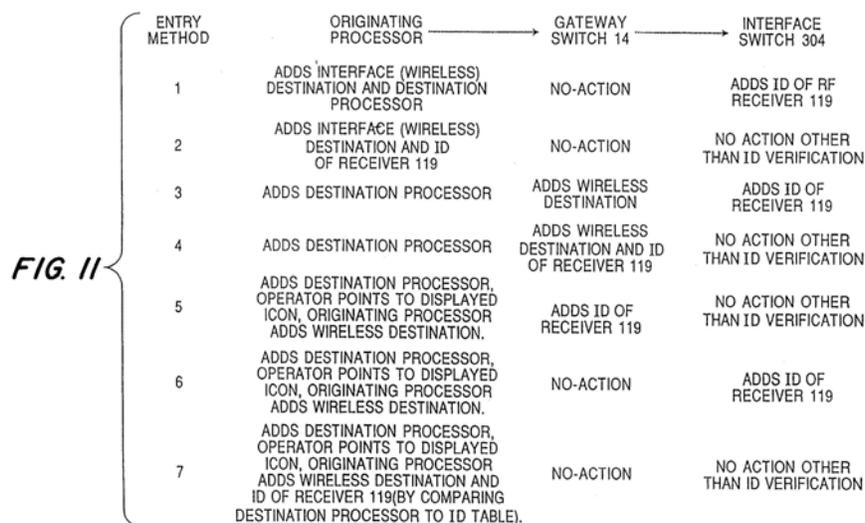
Components other than an “originating processor” can initiate data. The written description describes how, for example, “the identification of the RF receiver 119 and the address of the interface switch may be implemented by the originating processor A-N of one of the computing systems #1-#N, a gateway switch 14 or an interface switch 304” Id. at col. 24, ll. 42-46. This shows that three different components can initiate address information: (1) an “originating processor” A-N; (2) a gateway switch 14;

or (3) an interface switch 304. However, simply because the “originating processor” is but one of three separate, differently named and labeled components that can serve as the initiator of address information, does not mean that the term “originating processor” covers all of these different components. If “originating processor” referred to all three components, then the specification would simply read “the identification of the RF receiver 119 may be implemented by an originating processor.”

The specification makes clear that it may take several processors in Campana’s claimed invention to successfully initiate an electronic mail message. As Campana teaches in his written description, to initiate an electronic mail message, the message text must be entered, then the addresses of various interface switches and the receiving destination processor must be entered and appended to the message. See id. at col. 19, ll. 26-39. The written description also teaches that entering the addresses of the interface switches, RF receivers, and destination processors may be accomplished by various components, including the originating processor or a gateway switch. See id. at col. 21, ll. 54-56, 65-66 (noting that the address of the receiving interface switch may be added by the originating processor or a gateway switch); id. at col. 22, ll. 10-15, 24-26 (noting that the address of the destination processor may be added by “the originating processor by an operator or a machine using the originating processor” or the gateway switch). However, the mere fact that a constituent component may tack on destination address information to the “originated information” coming from the “originating processor” does not turn that constituent processor into an “originating processor.” Gateway switches are separate components from the “originating processor” that can also add address information after receiving the message text from the “originating

processor.” This is why Campana asserts that the invention is “user friendly” because only a “minimum amount of information . . . must be provided to initiate the transmission of electronic mail from an originating processor to at least one destination processor.” Id. at col. 19, ll. 20-25.

The written description further describes how either the “originating processor,” “gateway switch,” or “interface switch” can be used to add information needed to transmit the electronic mail message, such as addressing data. See id. at col. 22, ll. 24-26 (“The address of the destination processor may also be added to the information originated by the originating processor by the gateway switch.”). Figure 11 of the ’960 patent visually demonstrates various steps by which the “originating processor,” “gateway switch 14,” and “interface switch 304” could operate together to add address information to the text of the electronic mail message, i.e., the “originated information”:



See ’960 patent, col. 28, ll. 10-13 (“Fig[ure] 11 summarizes electronic mail message entry methods for messages (information) originating from originating processors within an electronic mail system.” (emphasis added)). The arrows show the flow of the

“originated information” from the “originating processor,” the first processor in the system where the information is originated, to a gateway switch 14, and then to an interface switch 304. Campana describes the flow of data in the various entry methods. For example, in “entry method 1” the “originating processor” itself adds the appropriate destination address data. Id. at col. 28, ll. 13-17. When the “originated information” then reaches a gateway switch 14, the gateway switch takes no action, because all of the address data necessary at that point has already been added by the “originating processor.” By contrast, in “entry method 3,” a gateway switch, after receiving the “originated information” from the “originating processor,” adds the wireless destination address. Id. at col. 28, ll. 24-29. Although under the various methods enumerated in Figure 11 either the “originating processor,” “gateway switch,” or “interface switch” may add address information to the electronic mail message, the gateway and interface switches do not initiate the message text of an electronic mail message and, thus, are not “originating processors.”

This shows how the “originating processor” merely refers to the first (initiating) processor of the “originated information.” A gateway switch is not an “originating processor.” While the gateway switch serves as an initiator of address information, as in entry methods 3, 4, and 5, a gateway switch only does this after it gets the “originated information” from the “originating processor.” “Originating processor” is not an umbrella term referring to all of the processors that add data into the system, but rather would be understood to one skilled in the art to be the first processor, or the initial source of the “originated information” or email message text. All three different components in Figure 11, an “originating processor,” a “gateway switch,” and an “interface switch,” are

initiating address information. “Originating processor” refers to one of these components—the first processor, and not all three. Thus, the “originating processor” is the sole processor that initiates the transmission of the electronic mail message text into the electronic mail system and is separate from the gateway or interface switches.

d. “Dual Pathways”

RIM argues that claim 8 of the ‘670 patent and claims 15, 32, and 34 of the ‘960 patent, when properly construed, require “‘dual pathways’ . . . whereby at least one of the destination processors in the system must be reachable through two independent pathways, one through the email system, and the other through the RF system.” Appellant’s Br. at 20.

We begin our analysis with the words of the claims.⁷ Vitronics, 90 F.3d at 1582. We refer again to claim 1 of the ‘960 patent, from which claim 15 ultimately depends, which is illustrative and states in pertinent part:

1. A system for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in the electronic mail system comprising: . . .

⁷ The district court addressed the “dual pathways” limitation on at least two occasions. On the first occasion, the district court rejected the “dual pathways” limitation, describing RIM’s argument as an “attempt[] to read a limitation into the claim that is not supported by the plain meaning of the claim.” On the second occasion, the court discussed the parties arguments, but declined to resolve the issue after finding a “genuine dispute of material fact.” Non-Infringement Order, slip op. at 4-11. The district court erred in refusing on the second occasion to resolve a claim construction issue due to a factual dispute. Although the district court is not required to adhere to a specific timeline in making its claim construction rulings, “in a case tried to a jury, the court has the power and obligation to construe as a matter of law the meaning of language used in the patent claim” and “should not give such task to the jury as a factual matter.” Markman v. Westview Instruments, Inc., 52 F.3d 967, 978-79 (Fed. Cir. 1995) (en banc).

a RF information transmission network for transmitting the originated information to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors; . . .

the electronic mail system transmits other originated information from one of the plurality of originating processors in the electronic mail system to at least one of the plurality of destination processors in the electronic mail system through a wireline without transmission using the RF information transmission network.

'960 patent, col. 49, ll. 2-45 (emphases added).

In considering RIM's proposed "dual pathways" limitation, we begin by noting that the preamble of claim 1 of the '960 patent limits the claim. Under our precedent, a preamble generally limits the claimed invention if it "recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim." Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002) (internal quotation marks omitted). Thus, if the preamble helps to determine the scope of the patent claim, then it is construed as part of the claimed invention. Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995) ("[W]hen the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects."). "When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003); see also C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1350 (Fed. Cir. 1998) ("[A] preamble usually does not limit the scope of the claim unless the preamble provides antecedents for ensuing claim terms and limits the claim accordingly.").

Because these limitations of claim 1 of the '960 patent derive their antecedent basis from the claim 1 preamble and are necessary to provide context for the claim limitations, the use of these limitations in the preamble limits the claim. Eaton, 323 F.3d at 1339; Catalina Mktg., 289 F.3d at 808. The limitations of claim 1 “at least one of a plurality of destination processors” and “electronic mail system” are first recited in the preamble. '960 patent, col. 49, ll. 2-45 (claim 1). The antecedent basis of the disputed claim limitation “to the at least one of the plurality of destination processors,” id. at col. 49, ll. 17-18 (emphasis added) (claim 1), is the destination processor recited in the preamble.

RIM's assertion that claim 1 of the '960 patent requires that “[t]he same destination processor must therefore simultaneously be ‘in an electronic mail system’ and reachable through an ‘RF information transmission network’” is well-supported. RIM correctly argues that the claim language “a RF information transmission network for transmitting . . . originated information to the at least one of the plurality of destination processors,” which employs the definite article “the,” refers to the antecedent “at least one of a plurality of destination processors in the electronic mail system.” '960 patent, claim 1 (emphasis added). RIM also correctly argues that, based on this antecedent relationship, a destination processor accessible by RF transmission must also be “in an electronic mail system.” See generally Warner-Lambert Co. v. Apotex Corp., 316 F.3d 1348, 1356 (Fed. Cir. 2003) (“[I]t is a rule of law well established that the definite article ‘the’ particularizes the subject which it precedes. It is a word of limitation as opposed to the indefinite or generalizing force of ‘a’ or ‘an.’” (internal quotation omitted)).

However, the conclusions RIM seeks to advance do not follow from its assertion. One conclusion RIM advances, at least at one point in its briefing, is that this “dual pathways” assertion suffices to demonstrate non-infringement, arguing that “[t]he Blackberry® system avoids this requirement since the Blackberry® handhelds are only reachable through an RF pathway.” That sentence, which is the extent of RIM’s analysis on this point, is simply insufficient to support a non-infringement determination. The argument relies on the implied premise that the BlackBerry handhelds are not in the electronic mail system. As defined by the district court, and approved above, an “electronic mail system” includes “a plurality of processors running electronic mail programming wherein the processors and the electronic mail programming are configured to permit communication by way of electronic mail messages among recognized users of the electronic mail system.” RIM has cited nothing in the record to suggest that BlackBerry handhelds do not contain “processors running electronic mail programming” or are not “configured to permit communication by way of electronic mail messages among recognized users of the electronic mail system.”⁸ Accordingly, RIM’s argument that the claim limitation requires that at least one destination processor must be in the electronic mail system and accessible by the RF information transmission network is not, by itself, sufficient to demonstrate non-infringement.

Another conclusion RIM attempts to draw from its assertion that at least one destination processor must be in the electronic mail system and accessible by the RF

⁸ As explained in more detail below, the RF receiver and the destination processor need not be physically separate and distinct. Similarly, it is of no importance that BlackBerry handhelds, which contain an RF receiver and a destination processor in a single unit, have access to both the RF information transmission network and the electronic mail system from the same device.

information transmission network is that there must be a “dual pathway” to the same destination processor. The term “dual pathways” is not a claim term, but the notion of dual communication paths was argued by Campana during the prosecution of the '960 patent and incorporated into the structure of the claims of the patent. In distinguishing his invention over a prior art reference, Zabarsky, Campana argued that Zabarsky “would not meet the claims because of the recited dual communication paths involving telephonic and wireless communications which use the claimed interface switch between the electronic mail system and the RF information transmission system.” The dual pathways distinction was mentioned during several exchanges between Campana and the examiner and was included in the recited structure of the claims. The first pathway is a pathway using both wireless connections in the RF information transmission network and either wireline or wireless connections in the email system (“wireline-and-wireless pathway”). This pathway is recited in the second paragraph after the preamble in claim 1. '960 patent, col. 49, ll. 13-17 (reciting transmission through an “RF information transmission network”). The second pathway is a pathway using only wireline connections in the email system (“wireline-only pathway”). This pathway is recited in the final paragraph of claim 1, which was added explicitly to incorporate a dual pathways limitation into the claims. See id. at col. 49, ll. 41-45 (reciting the transmission of information “to at least one of the plurality of destination processors in the electronic mail system through a wireline without transmission using the RF information transmission network”).

RIM's correct assertion that at least one destination processor must be in the electronic mail system and accessible by the RF information transmission network does

not, by itself, yield the conclusion that at least one destination processor must be accessible by dual pathways, that is, by a wireline-only pathway as well as a wireline-and-wireless pathway. RIM concedes that the final paragraph of claim 1 does not establish that a single destination processor must be accessible by dual pathways.

RIM does argue, however, that during the prosecution of the '960 patent, Campana "urged a narrow definition of 'electronic mail system' to distinguish over the wireless messaging system of Zabarsky." Thus, RIM ties its proposed "narrow definition" of "electronic mail system" to its dual pathways claim construction argument. RIM makes the following argument. First, at least one destination processor must be in the email system and accessible by the wireline-and-wireless pathway. Second, if a destination processor is in the email system, then it is accessible by a wireline-only pathway. Therefore, at least one destination processor must be accessible by dual pathways. This argument fails, however, because as we have concluded in section II.A.2.a, supra, the term "electronic mail system" as used in the patent is not limited to wireline-only pathways.

RIM also points to other statements Campana made in distinguishing the claimed invention over the Zabarsky reference. RIM argues that Campana's repeated reliance on a dual pathways requirement to distinguish over Zabarsky acted as a disclaimer of any claim interpretation that avoids a dual pathways requirement. NTP responds that there was no disavowal or disclaimer limiting Campana's invention to a system having dual pathways to the same destination processor. NTP argues that, instead, Campana simply distinguished Zabarsky as a purely wireless system, and noted that Zabarsky did not teach the claimed combination of a wireless system and an electronic mail system.

Further, NTP contends that the examiner clearly stated his understanding that no “dual pathways” requirement exists.

RIM emphasizes the following passage from the prosecution history:

[T]he claims as described above . . . define the combination of an electronic mail system and an RF information transmission system which transmits originated information from an originating processor to at least one destination processor using both an electronic mail system including a telephone network and an RF information transmission network which transmits originated information to at least one receiver which transfers the information to at least one destination processor. Thus, it is seen that the Examiner has not provided a teaching in the prior art or reasoning justifying a conclusion of obviousness with regard to the claimed system and method of operation of the electronic mail system and the RF information transmission system which define dual transmission paths of originated information with one of the paths being in the electronic mail system using a telephone network and the other of the paths being from the electronic mail system through an interface switch and through the RF information transmission system to the at least one destination processor.

Second Supplemental Amendment, May 13, 1994, at 23. RIM argues that Campana’s statement that the “claimed system . . . define[s] dual transmission paths,” id., serves to disclaim systems where the same destination processor cannot be reached through both wireline and RF transmissions. This characterization of the prosecution history is in error. Campana made these statements in the prosecution history to demonstrate how its combination of a wireline system and RF transmission system is distinguishable from the Zabarsky messaging system, which did not have the capacity to send a message using only wireline connections. Id. at 21-23. Although Campana clearly contemplated that various destination processors could be accessed through either a wireline system or the RF transmission network (or both), Campana did not limit his invention in these prosecution history passages to require that the same destination processor be accessible through both the wireline system and the RF transmission system. See Gemstar-TV Guide Int’l, Inc. v. Int’l Trade Comm’n, 383 F.3d 1352, 1364

(Fed. Cir. 2004) (noting that “the presumption of ordinary meaning will be ‘rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” (quoting ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed. Cir. 2003))). The required words or expressions of manifest exclusion or restriction representing a clear disavowal of claim scope are not present in these passages from the prosecution history.

As NTP correctly points out, the examiner’s “Reasons for Allowance” confirm that no requirement of “dual” transmission pathways to the same destination processor was required for the claims to be patentable:

The prior art of record fails to teach or fairly suggest a system for transmitting originated information from an originating processor in an electronic mail system to a destination processor in the electronic mail system comprising an RF information transmission network . . . with an address of the destination processor added at the originating processor [and] the electronic mail system transmits other originated information from an originating processor to a destination processor in the electronic mail system through a wireline without transmission using the RF information transmission network.

Notice of Allowability, Feb. 7, 1995, at 2. Although information is transmitted to various destination processors via RF or wireline transmission systems, there is no requirement that there must be “dual” transmission pathways to the same destination processor. Thus, we conclude that the asserted claims of the ’960 and ’670 patents do not include the “dual pathways” limitation contended by RIM.

e. “Separate and Distinct” RF Receiver and Destination Processor

In its summary judgment motion, RIM argued to the district court that certain of the asserted claims required that the RF receiver be distinct and separable from the destination processor. This “separate and distinct” limitation is, in RIM’s view,

applicable to all claims of the '960, '670, and '592 patents, and to claims 248, 309, 313, and 317 of the '451 patent. The court declined to impose this limitation, stating that “while it appears that Campana envisioned a portable and mobile RF receiver that is physically separate from the bulkier destination processor (i.e., laptop or desktop computer) the claims do not impose this requirement.” Non-Infringement Order, slip op. at 10-11. We agree with the district court.

As RIM correctly notes, the specification does indicate that Campana contemplated a separate housing as a way of achieving increased mobility and portability. For example, the specification suggests that an advantage of the invention is that the RF receiver may be carried with the user, while the location of the destination processor remains fixed. '960 patent, col. 18, ll. 60-66. But the specification also states that “a preferred embodiment of the invention is with portable destination processors.” Id. at col. 18, ll. 57-58.

RIM focuses its argument as to this alleged claim limitation on two claim terms, “transfer,” which can be found in the asserted claims of the '960 and '670 patents, and “connected to” or “coupled to,” which can be found in claims 150, 278, and 287 of the '592 patent and claims 248, 309, 313, and 317 of the '451 patent. Repeated statements in the specification echo these claim terms. See, e.g., id. at col. 18, ll. 50-53 (“The RF receiver automatically transfer [sic] the information to the destination processor upon connection of the RF receiver to the destination processor.” (emphasis added)); id. at col. 20, l. 66 – col. 21, l. 1 (“The RF receiver may be detached from the destination processor during reception of the information with a memory of the RF receiver storing the information.” (emphasis added)).

Our case law requires a textual “hook” in the claim language for a limitation of this nature to be imposed. Generally, “a party wishing to use statements in the written description to confine or otherwise affect a patent’s scope must, at the very least, point to a term or terms in the claim with which to draw in those statements. Without any claim term that is susceptible of clarification by the written description, there is no legitimate way to narrow the property right.” Renishaw PLC v. Marposs Societa’ per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998). In other words, “there must be a textual reference in the actual language of the claim with which to associate a proffered claim construction.” Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999); see also, e.g., McCarty v. Lehigh Valley R.R. Co., 160 U.S. 110, 116 (1895) (“[I]f we once begin to include elements not mentioned in the claim in order to limit such claim . . . we should never know where to stop.”).

In an effort to justify the limitation it urges, RIM first points to the claim term, “transfer.” In the ’960 patent, for example, claim 1 requires that the “RF receiver . . . transfer[] the originated information to the at least one of the plurality of destination processors.” ’960 patent, col. 49, ll. 15-18. According to RIM, the fact that information must be “transferred,” i.e., moved from one place to another, implies that the RF receiver and destination processor are separately housed. This reading stretches the meaning of “transfer.” As NTP points out, a “transfer” of information can equally occur between two entities that are physically housed together. The suggestion that information will be “transferred” between these two entities does not require the physical separation of those entities.

RIM also cites the claim terms “connected to” and “coupled to” used in the ’592 patent. In that patent, independent claim 150 (from which asserted claims 278 and 287 depend) describes

a wireless receiver connected to the one mobile processor with the one mobile processor receiving the information contained in the electronic mail after the identification of the wireless device is detected by the wireless receiver in a broadcast by the wireless system.

’592 patent, col. 41, ll. 18-22 (emphasis added). Independent claim 301 of the ’592 patent, from which asserted claims 309, 313, and 317 depend, recites similar requirements:

301. A communication system comprising:

mobile devices, each mobile device comprising a wireless device connected to a mobile processor which executes electronic mail programming to function as a destination of electronic mail, the wireless device after receiving a broadcast of information contained in the electronic mail and an identification of the wireless device transmits the information to the connected mobile processor

Id. at col. 53, ll. 32-40. Webster’s Third New International Dictionary 480 (1993) defines “connected” as “to join, fasten, or link together.” Although “connected” more strongly connotes a physical link between the mobile processor and the wireless receiver than does the term “transfer,” it still does not require that the mobile processor and wireless receiver be physically disposed in separate housings. A “connection” can occur between these two devices regardless of whether they are housed separately or together. Indeed, the two components could be connected, joined, or linked together by wires or other electrical conductors and still be located in the same housing or even on the same circuit board. Because the claim language does not support RIM’s

interpretation, we agree with the district court and decline to impose this additional restriction on the claims.

f. “Additional Processor Outside an Electronic Mail System”

RIM challenges the district court’s construction of the term “additional processor outside an electronic mail system.” As NTP correctly points out, this term is not present in any of the claims currently before us on appeal. RIM’s principal justification for this court to construe the “additional processor” limitation is simply that the district court below construed the claim term. That is not a sufficient basis for this court to construe this claim term. Terms not used in claims in controversy on appeal need not be construed. See Vivid Techs., Inc. v. Am Sci. & Eng’g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those [claim] terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”); U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”). We therefore decline to reach the question of whether the district court’s construction of “additional processor outside of an electronic mail system” was correct.

B. Infringement

RIM makes three arguments challenging the district court’s judgment of infringement. First, RIM argues that the district court erred in its claim constructions, and under the correct claim constructions RIM’s products do not infringe. Second, RIM contends that because the BlackBerry Relay is located in Canada, as a matter of law

RIM cannot be held liable for infringement under 35 U.S.C. § 271. Finally, RIM argues that the jury verdict of infringement lacked substantial evidence, and thus the district court should have granted RIM's motion for JMOL of non-infringement. We will discuss each argument in turn.

1. Claim Construction

A determination of infringement is a two-step process. The court must first correctly construe the asserted claims, and then compare the properly construed claims to the allegedly infringing devices, systems, or methods. Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 149 F.3d 1309, 1315 (Fed. Cir. 1998). We have determined that the district court's jury instructions contained an erroneous claim construction of the term "originating processor." Thus, we are presented with the question of whether the jury verdict of infringement must be set aside as to the affected claims.

A jury verdict will be set aside, based on erroneous jury instructions, if the party seeking to set aside the verdict can establish that "those instructions were legally erroneous," and that "the errors had prejudicial effect." Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1281 (Fed. Cir. 2000); see also Ecolab Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1373 (Fed. Cir. 2002). More specifically, "a party seeking to alter a judgment based on erroneous jury instructions must establish that (1) it made a proper and timely objection to the jury instructions, (2) those instructions were legally erroneous, (3) the errors had prejudicial effect, and (4) it requested alternative instructions that would have remedied the error." Advanced Display, 212 F.3d at 1281 (internal citations omitted). "Prejudicial legal error exists when it 'appears to the court [that the error is] inconsistent with substantial justice.'" Id. at 1283 (quoting Fed. R. Civ.

P. 61). However, when the error in a jury instruction “could not have changed the result, the erroneous instruction is harmless.” Environ Prods., Inc. v. Furon Co., 215 F.3d 1261, 1266-67 (Fed. Cir. 2000) (citing 11 Charles Alan Wright & Arthur R. Miller, Federal Practice and Procedure § 2886 (2d ed. 1995) (“Errors in instructions are routinely ignored if . . . the error could not have changed the result.”)); Weinar v. Rollform Inc., 744 F.2d 797, 808 (Fed. Cir. 1984) (“[A] reversal . . . is not available to an appellant who merely establishes error in instructions Where the procedural error was ‘harmless,’ i.e., where the evidence in support of the verdict was so overwhelming that the same verdict would necessarily be reached absent the error, or the error was cured by an instruction, a new trial would be mere waste and affirmance of the judgment is required.”).

At trial, RIM made a timely objection to the jury instructions pertaining to the district court’s claim constructions, including its erroneous construction of the term “originating processor.” See J.A. at 14102-03. RIM also requested alternative instructions that would have remedied the error, including specifically an alternative jury instruction embodying its proposed claim construction of the term “originating processor.” See J.A. at 8368-73 (instruction 16). But to set aside the jury verdict, RIM must also establish that the error was prejudicial. Advanced Display, 212 F.3d at 1281.

Prior to trial, RIM proffered a declaration by its expert Dr. Reed arguing that the accused BlackBerry products and services do not infringe under RIM’s proposed claim constructions as contained in RIM’s proposed jury instructions. See J.A. at 10115-71 (Reed declaration). This proffer addressed, inter alia, infringement as it relates to the “originating processor” limitation. However, the district court did not admit the Reed

declaration into evidence or address the merits of the contentions in the Reed declaration. While RIM asserts that the court excluded all testimony arguing claim limitations different than or inconsistent with the court's claim construction, the court's actual ruling appears to have been directed only to the "separate and distinct physical housing argument [and] the RF indicator argument." See J.A. at 12047-48. At the trial, testimony was presented with respect to infringement of the claims as construed by the district court. However, the extent to which the trial testimony and the exhibits actually admitted into evidence might relate to the issue of infringement under the correct construction of the term "originating processor" is unclear on the record before us. What is clear is that in the briefing of this appeal, the parties have not fully vetted the evidentiary record as it might relate to the correct construction of the term "originating processor." Because the district court has a more direct understanding of the full record of trial proceedings in this case and is, thus, in a better position to make an informed determination of prejudicial error relating to the erroneous claim construction of the term "originating processor," we decline to make that determination in the first instance on appeal and, instead, remand the same to the district court for proper resolution.

On remand, if RIM can establish that the erroneous claim construction prejudiced the jury's verdict as to the affected claims, the district court will have to set aside the verdict of infringement as to those claims. The affected claims are those that include the term "originating processor;" namely, claims 15, 32, and 34 of the '960 patent; claim 8 of the '670 patent; and claim 40 of the '592 patent (through its parent claim 25).

2. Section 271

Section 271(a) of title 35 sets forth the requirements for a claim of direct infringement of a patent. It provides:

Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

35 U.S.C. § 271(a) (2000). The territorial reach of a patent right is limited, so that section 271(a) is only actionable against patent infringement that occurs within the United States. See Pellegrini v. Analog Devices, Inc., 375 F.3d 1113, 1117 (Fed. Cir. 2004) (“[As] the U.S. Supreme Court explained nearly 150 years ago in Brown v. Duchesne, 60 U.S. (19 How.) 183, 15 L. Ed. 595 (1857), . . . the U.S. patent laws ‘do not, and were not intended to, operate beyond the limits of the United States.’”); Rotec Indus., Inc. v. Mitsubishi Corp., 215 F.3d 1246, 1251 (Fed. Cir. 2000) (stating that “extraterritorial activities . . . are irrelevant to the case before us, because ‘the right conferred by a patent under our law is confined to the United States and its territories, and infringement of this right cannot be predicated on acts wholly done in a foreign country” (emphasis added) (quoting Dowagiac Mfg. Co. v. Minn. Moline Plow Co., 235 U.S. 641, 650 (1915))).

Ordinarily, section 271(a) can be applied without difficulty. In cases where the accused infringer’s conduct does not precisely map on to the structure of section 271(a), a patentee may resort to other sections of 35 U.S.C. § 271 to make his or her case. The various subsections of section 271, (a) through (g), address different infringement scenarios. For example, subsection (f) speaks to the manufacture of substantial portions of a patented invention within the United States for export,

assembly, and use abroad. Subsection (g), on the other hand, addresses the foreign use of a patented process to manufacture a product that is subsequently imported into the United States. These actions equally constitute direct infringement of a patent under the statute. In this case, NTP asserts that if subsection (a) does not apply, infringement nonetheless has occurred under either subsection (f) or (g). Because we conclude that subsection (a) is the appropriate vehicle for NTP's infringement suit, we need not and do not consider the parties' respective arguments under those alternative subsections.

This case presents an added degree of complexity, however, in that: (1) the "patented invention" is not one single device, but rather a system comprising multiple distinct components or a method with multiple distinct steps; and (2) the nature of those components permits their function and use to be separated from their physical location.

In the district court, RIM moved for summary judgment of non-infringement, arguing that it could not be held liable as a direct infringer under section 271(a). NTP's theory of infringement tracked the language of section 271(a). In its complaint, NTP alleged that RIM had infringed its patents by "making, using, selling, offering to sell and importing into the United States products and services, including the Defendant's BlackBerry™ products and their related software" Compl. ¶ 19. According to RIM, the statutory requirement that all steps of the allegedly infringing activity take place "within the United States" was not satisfied because the BlackBerry Relay component of

the accused system is located in Canada.⁹ As explained above, RIM's Relay operates to translate and route email messages from the processors in the user's email system to the partner wireless networks in the BlackBerry system. NTP alleges that the Relay component satisfies the "interface" of the "interface switch" limitation in the '960, '670, '172, and '451 patents.

The district court declined to grant summary judgment in RIM's favor. The court agreed that "to establish direct infringement under § 271(a), NTP must show that RIM practiced all of the steps of the process patented in the Campana inventions in the United States." Section 271 Order, slip op. at 6. However, because there remained "a genuine dispute . . . with regards to whether RIM operates a Relay facility in Virginia," the court decided it could not resolve this issue on summary judgment. Id. at 9. Subsequently, during trial, the court changed its position and specifically found that "the fact that the BlackBerry relay is located in Canada is not a bar to infringement in this matter." The court therefore instructed the jury that "the location of RIM's Relay in Canada does not preclude infringement."

On appeal, RIM argues that the district court erred in its interpretation of the infringement statute. Citing the Supreme Court's decision in Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518 (1972), RIM contends that an action for infringement under section 271(a) may lie only if all allegedly infringing activity occurs within the United States. RIM urges that, in this case, that standard is not met: the BlackBerry Relay

⁹ There was a question below as to whether the Relay was also operated out of Virginia. This question appears to have been resolved in RIM's favor; on appeal, NTP does not contest the location of the BlackBerry Relay in Canada. For the purposes of our discussion, we assume that the BlackBerry Relay is located only in Canada. If, in fact, a Relay is also located in the United States, the need for this analysis would of course be obviated.

component, described by RIM as the “control point” of the accused system, is housed in Canada. For section 271(a) to apply, RIM asserts that the entire accused system and method must be contained or conducted within the territorial bounds of the United States. Stated differently, RIM’s position is that if a claim limitation of a patented system would only be met by a component of the accused system, or a step of the accused method, located outside the United States, then the entire system or method is beyond the reach of section 271(a), even if the use and function of the whole system in operation occur in the United States.

This court reviews the statutory construction of a district court de novo. Merck & Co. v. Kessler, 80 F.3d 1543, 1549 (Fed. Cir. 1996) (reviewing “the district court’s decision on the meaning of the various [statutory] provisions and their interrelationship” without deference). In our interpretation of the statute, we “give the words of a statute their ordinary, contemporary, common meaning, absent an indication Congress intended them to bear some different import.” Williams v. Taylor, 529 U.S. 420, 431 (2000) (internal quotation marks omitted). We begin with the words of the statute, see Trayco, Inc. v. United States, 994 F.2d 832, 836 (Fed. Cir. 1993), but may consult dictionaries, see Bayer AG v. Housey Pharms., Inc., 340 F.3d 1367, 1371 (Fed. Cir. 2003), and legislative history, see Neptune Mut. Ass’n Ltd. of Bermuda v. United States, 862 F.2d 1546, 1549 (Fed. Cir. 1988), if necessary to construe the statute.

The question before us is whether the location of a component of an accused system abroad, where that component facilitates operation of the accused system in the United States, prevents the application of section 271(a) to that system. Pursuant to

section 271(a), the “use[]”¹⁰ of “any patented invention[] within the United States . . . during the term of the patent therefor, infringes the patent.” 35 U.S.C. § 271(a) (2000). The plain language of section 271(a) does not preclude infringement where a system such as RIM’s, alleged to infringe a system or method claim, is used within the United States even though a component of that system is physically located outside the United States. For the reasons more fully set forth below, we conclude that when two domestic users communicate via their BlackBerry devices, their use of the BlackBerry system occurs “within the United States,” regardless of whether the messages exchanged between them may be transmitted outside of the United States at some point along their wireless journey.

The seminal case addressing the territoriality of section 271(a) is Deepsouth. In Deepsouth, the patentee established infringement by Deepsouth Packing Co. and obtained an injunction prohibiting Deepsouth from making or selling its machines in the United States. 406 U.S. at 523. Deepsouth then sought a modification of the injunction so that it would be permitted to export its infringing machines unassembled for use abroad. Id. The Supreme Court considered whether section 271(a) prevented, as direct infringement, the domestic production of all component parts of a patented combination for export, assembly, and use abroad. Id. at 527. The Court held that the export of unassembled components of an invention could not infringe the patent. Id. at 529. The Court said that it could not “endorse the view that the ‘substantial manufacture of the constituent parts of a machine’ constitutes direct infringement when

¹⁰ NTP also argues that direct infringement under section 271(a) has occurred through the “sale” by RIM of the BlackBerry system within the United States. Because we find that the manner of “use” of the accused system satisfies section 271(a), we need not and do not consider whether its sale does as well.

we have so often held that a combination patent protects only against the operable assembly of the whole and not the manufacture of its parts.” Id. at 528. In so holding, the Court explained that Congress could decide to change section 271 to account for this loophole. Id. at 530 (“When, as here, the Constitution is permissive, the sign of how far Congress has chosen to go can come only from Congress.”). This is precisely what occurred. In 1984, Congress enacted section 271(f), which extends infringement liability to cover the export of elements of patented inventions. 35 U.S.C. § 271(f) (2000). The new section directly “respond[ed] to the United States Supreme Court decision in Deepsouth Packing Co. v. Laitram Corp. concerning the need for a legislative solution to close a loophole in patent law.” 130 Cong. Rec. 28,069 (1984). The key premise in Deepsouth was that Deepsouth was not using the machines in the United States as a “whole operable system assembly” because Deepsouth did not combine the components for use in the United States.

Deepsouth interprets section 271(a) to allow an action for direct infringement only when the defendant makes, uses, sells, or offers to sell the patented product within the bounds of the United States.¹¹ Id. at 527. Deepsouth construed section 271(a) to avoid giving patent law any extraterritorial effect. Id. at 531 (“To the degree that the inventor needs protection in markets other than those of this country, the wording of 35 U.S.C. §§ 154 and 271 reveals a congressional intent to have him seek it abroad through patents secured in countries where his goods are being used.”). We disagree with RIM that the application of section 271(a) to this case would compromise that guiding

¹¹ In Rotec Industries, Inc. v. Mitsubishi Corp., 215 F.3d 1246, 1252 n.2 (Fed. Cir. 2000), this court confirmed that the Deepsouth interpretation of section 271(a) remains binding precedent on the limits of direct infringement liability under that section.

principle. See Waymark Corp. v. Porta Sys. Corp., 245 F.3d 1364, 1367 (Fed. Cir. 2001) (declining to apply section 271(a) only after concluding that “[l]ike Deepsouth, this case presents the possibility of giving United States patent protection extraterritorial effects”). The case before us can be distinguished from Deepsouth in that “the location of the infringement is within United States territory, not abroad as in Deepsouth.” Decca Ltd. v. United States, 544 F.2d 1070, 1074 (Ct. Cl. 1976) (emphasis added). Even though one of the accused components in RIM’s BlackBerry system may not be physically located in the United States, it is beyond dispute that the location of the beneficial use and function of the whole operable system assembly is the United States.

Our predecessor court, the Court of Claims, recognized this distinction in a case with close parallels to the present case. In Decca, the court addressed a claim of infringement by the government’s “Omega” navigation system. That system was used for global positioning of ships and aircraft and was comprised of one “master” control station, located in the United States, and several planned transmitter stations, to be located around the world, including in Norway. Id. at 1074, 1081. The government relied on Deepsouth, as RIM does here, to assert that the location of the stations outside the United States prevented infringement, as “a claim is infringed only when an operative assembly of the entire claimed combination is made or used within the territorial limits of the United States.” Id. at 1081. The Court of Claims, soundly rejected this argument, finding that the “Omega” navigation system was an infringing “use” under section 271(a). Id. at 1082.

The transmission from the Norwegian station is controlled by the United States in the sense that it established and continuously monitors the signals from that station, and this all occurs in the United States. . . . Further, it is from the

United States all actions are taken to ensure synchronization of the transmissions of that station with those in the United States. In other words, it is obvious that, although the Norwegian station is located on Norwegian soil, a navigator employing signals from [the Norwegian] station is, in fact, “using” that station and such use occurs wherever the signals are received and used in the manner claimed.

In view of the foregoing, and while the matter is not free from doubt, it is concluded that a basis for liability under claim 11 has been shown. This conclusion does not rest on any one factor but on the combination of circumstances here present, with particular emphasis on the ownership of the equipment by the United States, the control of the equipment from the United States and on the actual beneficial use of the system within the United States.

Id. at 1082-83 (emphasis added). The Court of Claims went on to note that the claims were directed to receipt and use of the broadcast signals and not the generation of the particular signals by a transmitter. Id. at 1083. With the exception of some of the transmitters, the other components including the “master” station and system monitoring functions, were located in the United States. Id. at 1074. The court observed that if the claims had been directed to signal generation, then the location and operation of the transmitters abroad “would have been beyond the reach of the U.S. patent laws.” Id. at 1083.

The BlackBerry system is akin to the infringing system in Decca. The claims are directed to systems and methods for sending email messages between two subscribers; the transmission is made between an originating processor and destination processor. Although RIM’s Relay, which is located in Canada, is the only component that satisfies the “interface” of the “interface switch” limitation in the asserted claims, because all of the other components of RIM’s accused system are located in the United States, and the control and beneficial use of RIM’s system occur in the United States, we conclude

that the situs of the “use” of RIM’s system for purposes of section 271(a) is the United States. See id. Like the court in Decca, we conclude that the location of RIM’s customers and their purchase of the BlackBerry devices establishing control and beneficial use of the BlackBerry system within the United States satisfactorily establish territoriality under section 271(a). We thus affirm the judgment of the district court that section 271(a) applies to RIM’s allegedly infringing conduct.

3. Denial of Judgment as a Matter of Law

“The grant or denial of a motion for judgment as a matter of law is a procedural issue not unique to patent law, reviewed under the law of the regional circuit in which the appeal from the district court would usually lie.” Summit Tech., Inc. v. Nidek Co., 363 F.3d 1219, 1223 (Fed. Cir. 2004). Under the law of the Fourth Circuit, the denial of a motion for judgment as a matter of law is reviewed de novo. Johnson v. MBNA Am. Bank, NA, 357 F.3d 426, 431 (4th Cir. 2004). “We must view the evidence in the light most favorable to . . . the nonmovant, and draw all reasonable inferences in [the non-movant’s] favor without weighing the evidence or assessing the witnesses’ credibility.” Id. “The question is whether a jury, viewing the evidence in the light most favorable to [the nonmovant], could have properly reached the conclusion reached by this jury.” Baynard v. Malone, 268 F.3d 228, 235 (4th Cir. 2001). “We must reverse [the denial of a motion for JMOL] if a reasonable jury could only rule in favor of [the movant]; if reasonable minds could differ, we must affirm.” Id.

To establish that no reasonable jury could have found infringement, RIM challenges the testimony of NTP’s expert, Dr. Vernon Rhyne, who opined during trial that the BlackBerry Corporate and Internet solutions met the limitations of asserted

claims from the '960, '670, '172, and '451 patents. According to RIM, Dr. Rhyne's testimony was inconsistent with that of Alan Lewis, a RIM employee, though it was Lewis' testimony on which Dr. Rhyne, in part, based his conclusions. This inconsistency, argues RIM, prevented the testimony from amounting to substantial evidence on which a jury could deliver a verdict of infringement. We disagree. As NTP correctly notes, (1) Dr. Rhyne's testimony was not based exclusively on Lewis' testimony, and (2) the jury had before it evidence other than Dr. Rhyne's testimony that demonstrated infringement. Applying our de novo standard of review, we agree with the district court that the jury verdict of infringement of claims 28, 248, and 309 of the '451 patent should not be disturbed.

RIM next contends no reasonable jury could have found the asserted claims to be not invalid over certain "AlohaNet" prior art, either alone or in combination with a 1975 article by the AlohaNet inventor, Dr. Abramson. AlohaNet was a pioneering network system developed at the University of Hawaii. According to RIM, the AlohaNet system facilitated communications over both wireline and wireless networks as early as 1973. At trial, RIM's expert, Dr. Reed, testified that the AlohaNet system met each of the asserted claim limitations. On appeal, RIM attempts to rebut the three distinctions drawn by NTP at trial to differentiate the Campana invention from the prior art. In response, NTP emphasizes that RIM's invalidity argument was premised on the testimony of Dr. Reed, which the jury found not to be credible. In its JMOL order, the district court reached this same conclusion: "[M]uch of Dr. Reed's direct testimony was conclusory and failed to analyze and explain the claim language and which components of the prior art embodied each element of the asserted claims." JMOL Order, slip op. at

6. We agree with the district court that “[s]uch conclusory evidence is hardly enough to meet RIM’s high burden of clear and convincing evidence with respect to anticipation and obviousness.” Id. We thus affirm the district court’s denial of JMOL on the validity issue.

C. Evidentiary Rulings

Finally, RIM contests three evidentiary rulings made by the court: (1) the exclusion of the testimony of Larry Nixon, a patent attorney who would have testified on behalf of RIM that under the district court’s claim construction, the claims were invalid for want of an adequate written description, see 35 U.S.C. § 112; (2) the exclusion of the testimony of RIM employee Alan Lewis, who was to opine on certain aspects of the BES system; and (3) the exclusion of the demonstration of a “TekNow” prior art system and related testimony after doubt was cast on the authenticity of that evidence. In reviewing a district court’s evidentiary rulings, we apply the law of the relevant regional circuit. Sulzer Textil A.G. v. Picanol N.V., 358 F.3d 1356, 1363 (Fed. Cir. 2004). Under the law of the Fourth Circuit, the district court’s exclusion of expert testimony is reviewed under an abuse of discretion standard. United States v. Wilkerson, 84 F.3d 692, 696 (4th Cir. 1996). We have reviewed RIM’s arguments in connection with these evidentiary rulings and have concluded that the court acted within its discretion.

III. CONCLUSION

In conclusion, we alter the district court’s construction of the claim term “originating processor.” We affirm the remainder of the district court’s claim constructions. We remand to the district court the questions of whether and to what extent the jury verdict of infringement should be set aside, based on the prejudicial

effect, if any, of the district court's erroneous claim construction of the term "originating processor." Should such prejudicial effect be shown, and because the jury verdict did not specify the amount of infringing sales attributed to each individual patent claim, or the specific devices and services determined by the jury to infringe each separately asserted claim, the district court on remand will also have to determine the effect of any alteration of the jury verdict on the district court's damage award and on the scope of the district court's injunction. Accordingly, the judgment and the injunction are vacated, and the case is remanded to the district court for further proceedings consistent with this opinion. We affirm the district court's judgment in all other respects. We thus affirm-in-part, vacate-in-part, and remand.

IV. COSTS

Each party shall bear its own costs.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED