United States Court of Appeals for the Federal Circuit

(Reexamination No. 90/006,676)

IN RE NTP, INC.,

2010-1243

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

(Reexamination Nos. 90/006,494, 90/006,681, 90/007,726)

IN RE NTP, INC.,

2010-1254

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

(Reexamination Nos. 90/006,491, 90/006,678, 90/007,723)

IN RE NTP, INC.,

2010-1263

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

(Reexamination Nos. 90/006,533, 90/006,675, 90/007,731)

IN RE NTP, INC.,

2010-1274

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

(Reexamination No. 90/006,677)

IN RE NTP, INC.,

2010-1275

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

(Reexamination Nos. 90/006,492, 90/006,679)

IN RE NTP, INC.,

2010-1276

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

(Reexamination Nos. 90/006,493, 90/006,680, 90/007,735)

IN RE NTP, INC.,

2010-1278

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

Decided: August 1, 2011

BRIAN M. BUROKER and OZZIE A. FARRES, Hunton & Williams, LLP, of Washington, DC, argued for appellant. With them on the brief were YISUN SONG; and ROBERT A. KING, of Atlanta, Georgia.

NATHAN K. KELLEY, SCOTT C. WEIDENFELLER and WILLIAM LAMARCA, Associate Solicitors, United States Patent and Trademark Office, of Alexandria, Virginia, argued for appellee. With them on the brief was RAYMOND T. CHEN, Solicitor.

Before GAJARSA, CLEVENGER, and MOORE, *Circuit Judges*.

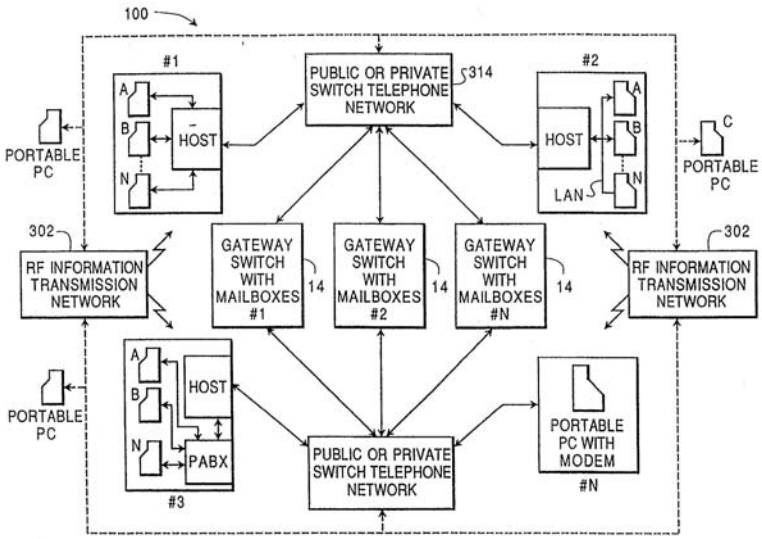
MOORE, *Circuit Judge*.

NTP, Inc. (NTP) appeals from decisions of the United States Patent and Trademark Office Board of Patent Appeals and Interferences (Board) affirming the rejections of claims in United States patent nos. 5,436,960 ('960 patent), 5,438,611 ('611 patent), 5,479,472 ('472 patent), 5,625,670 ('670 patent), 5,631,946 ('946 patent), 5,819,172 ('172 patent), and 6,067,451 ('451 patent). We

address these seven appeals in a single opinion because there are common issues throughout. Related Appeal No. 2010-1277 presents unique issues addressed in a separate opinion. For the reasons set forth below, we vacate-in-part, reverse-in-part, and remand.

BACKGROUND

The parties agree that the patents involved in this appeal share substantially identical specifications. 2010-1243 Appellant's Br. 2; 2010-1243 Dir. Br. vi. The patents describe a system for sending information (such as electronic mail) from an originating processor (i.e., a personal computer) to a destination processor (i.e., a mobile computer) using an intermediary, an RF receiver. '960 patent col.18 ll.32-39. Prior art systems such as the one shown in figure 1 of the '960 patent required a portable computer to connect to a public switched phone line in order to access electronic messages. Because it was difficult to locate a telephone jack, the mobile computer user was often unable to receive electronic mail. *Id.* col.3 ll.62-66. The inventors set out to solve this problem by introducing a Radio Frequency (RF) network 302. Figure 8 illustrates the invention:



The individual elements shown in this figure were all known. For example, it is undisputed that prior art electronic mail systems used gateway switches to store and forward electronic mail. *Id.* col.2 ll.22-30. The present invention introduced an interface switch to the system that communicates between the gateway switch and the RF network. *Id.* col.19 ll.11-13. This interface switch receives an electronic mail message from the gateway switch and forwards it, via the RF network, to an RF receiver. *Id.* col.20 ll.62-63. The RF receiver then transfers the electronic mail message to the destination processor (mobile computer) when the destination processor is activated. The system also allows for the transmission of electronic mail via the prior art wireline networks.

This is not the first time we have considered this family of patents. In *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1289 (Fed. Cir. 2005), an infringement action, we described the function of the system:

> [The invention's] particular innovation was to integrate existing electronic mail systems with RF wireless communications networks. In simplified terms, the . . . 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 . . . at some later point, connect the RF receiver to a fixed destination processor, *i.e.*, his or her personal computer [or mobile computer], and transfer the stored message. 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. Instead, a user can access his or her email stored on the RF receiver and 'review . . . its contents without interaction with the destination receiver.'

(internal citations omitted). During this litigation, Research in Motion, Ltd. (RIM) filed the reexamination requests that led to this appeal.

Claim 1 of the '960 patent is illustrative of the claims at issue in this appeal and describes a "system for transmitting originated information from . . . originating processors in an electronic mail system to at least one of a plurality of destination processors" comprising 1) a gateway switch in the electronic mail system to receive and store originated information (the text of an electronic mail message); 2) an RF network to receive originated information from the gateway and transmit it to an RF receiver; 3) an interface switch to facilitate communications between the gateway and the RF network, wherein the address of the interface switch is added during transmis-

sion in the electronic mail system; and 4) wherein the electronic mail system may also transmit originated information from an originating processor to a destination processor over a wireline – apart from the RF network. Other claims in the appeal are broader and remove the specific reference to the gateway switch. For example, claim 1 of the '670 patent describes an interface for communicating between an originating processor and an RF transmission network.

NTP appeals the Board's affirmance of a number of rejections detailed below. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1)(4)(A).

DISCUSSION

NTP raises several issues on appeal. First, it argues that the Board's claim constructions of "electronic mail message" and "electronic mail system" are incorrect. Second, it claims that the Board erred when it found that NTP could not antedate several references under 37 C.F.R. § 1.131. Third, it asserts that Telenor, eight volumes of a printed publication titled "Mobile Data Networks Description," is not a prior art reference because it is not a printed publication under 35 U.S.C. § 102(b). Finally, it appeals several rejections unrelated to the construction of "electronic mail message" based on various prior art references. Each issue is discussed in turn.

I. Claim Construction

The claim terms at issue in these appeals are "electronic mail" or "electronic mail message" and "electronic mail system."[1] In reexamination, "claims . . . are to be

[1] Though our prior decision construed "originated information," *NTP*, 418 F.3d at 1282, we did not determine what constitutes an "electronic mail message." Thus, there is no conflict in this case between the Board's

given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (quotation omitted). Thus, while reviewing claim construction *de novo*, *Singh v. Brake*, 317 F.3d 1334, 1340 (Fed. Cir. 2003), this court must determine whether the Board's construction of the term was reasonable, *In re Morris*, 127 F.3d 1048, 1055 (Fed. Cir. 1997).

We turn first to the Board's construction of "electronic mail" or "electronic mail message." The term "electronic mail" or "electronic mail message" appears in all eight patents-in-suit. The Board construed this term to mean a formatted text message having "a destination address identifying the persons, places, or objects to which the message is directed." 2010-1263 J.A. 20. NTP asserts that this construction is incorrect and proposes that "electronic mail message" means a message that has "(1) the destination address; (2) an identification of the originating processor; (3) the subject of the message and (4) the message or message text with the clear result being that email elements (1) and (2) require a communication system to have both originating and destination processors." 2010-1254 Appellant's Br. 29-30. NTP's proposed construction has wavered between two positions throughout these appeals: requiring that all the listed fields be entered and requiring that only the destination address be entered with the capability for entry of the other three fields. [2]

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construction and a prior Federal Circuit construction of the same term in the same patent.

[2] At oral argument, the court asked the parties to submit a supplemental letter brief to instruct the court as to which of the appealed issues the court should address if

The Board's construction only required the entry of a destination address. This construction, however, ignores the claim language and evidence of the understanding of a person of ordinary skill in the art. The claim language clearly requires that, in addition to a destination address, electronic mail messages have the capability for entry of message content, such as text or an attachment. Further, other intrinsic and extrinsic evidence shows that a person of ordinary skill in the art would recognize that an electronic mail message must also have the capability to enter an identification of an originating processor and a subject. While the Board must give the terms their broadest reasonable construction, the construction cannot be divorced from the specification and the record evidence. *In re Suitco Surface*, 603 F.3d 1255, 1259 (Fed. Cir. 2010).

Based on the evidence, the broadest reasonable construction of "electronic mail message" is a message that has a destination address and the capability for entry of message content, an identification of an originating processor, and a subject. As with any claim construction analysis, we begin with the claim language. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). The claims of the patents-in-suit require that an electronic mail message has a destination address. The parties do not dispute this point. For example, claim 1 of

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we were to conclude that the Board's claim construction was erroneous. NTP properly submitted its bullet point list of the additional issues. The PTO's letter brief, however, went beyond the request by the court and included several pages of argument directed to the electronic mail claim construction issue including citations to portions of the prosecution history that were not raised in the briefs or at oral argument. This was improper and beyond the scope of the court's request. Therefore, we will not consider these portions of their submission for purposes of the appeals.

the '960 patent states that "the originated information is transmitted . . . with an address of the at least one of the plurality of destination processors." '960 patent col.49 ll.31-35; *see also* '611 patent col.48 ll.51-55 (claiming "other originated information" having "an address of the at least one of the plurality of destination processors"); '946 patent col.53 ll.24-28 (claiming "the originated information is transmitted . . . with an address of the at least one RF receiver to receive the originated information"); '670 patent col.53 ll.25-29 (same); '472 patent col.51 ll.18-20 (claiming a system that "transfers the originated information to the at least one of a plurality of destination processors"); '172 patent col.53 ll.13-15 (claiming "the electronic mail message . . . includes an address of the one interface"); '451 patent col.28 ll.11-13 (claiming "the broadcast including information contained within the electronic mail and an identification of each RF receiver to receive the broadcast"). Although some claims refer to the address of an "interface" or an "RF receiver," the specification explains that "[t]he address of the destination processor . . . preferably is an identification number of a RF receiver . . . ." '960 patent col.22 ll.10-11. Without a destination address, there would be no electronic mail message.

Turning to the capability for entry of message text, claim 1 of the '960 patent claims "[a] system for transmitting originated information." '960 patent col.49 ll.2-3. This court construed "originated information" to mean "the message text of an electronic mail message" in the *RIM* Litigation. The other patents-in-suit similarly claim the transmission of originated information. *See, e.g.*, '611 patent col.47 ll.47-48 (claiming "[a] system for transmitting originated information"); '946 patent (same); '670 patent col.53 ll.1-10 (claiming "[a] system for transmitting information . . . with the information including originated

information"); '472 patent col.51 ll.2-3 (claiming "[a] system for connecting a plurality of electronic mail systems each transmitting originated information"); '172 patent col.53 l.2 (claiming "[a] system for transmitting an inputted message"). Moreover, the specification explains that "[e]lectronic mail is typically used to send short informal messages between computers . . . ." '960 patent col.1 ll.49-51; *see also id.* col.28 ll.10-12 (explaining that figure 11 "summarizes electronic mail message entry methods for messages (information) originating from originating processors within an electronic mail system"). Because the claims of the patents-in-suit include a limitation that originated information be entered in an electronic mail message, an electronic mail message must have the capability for a message to be entered.

Based on the claim language alone, it is clear that an electronic mail message must include a destination address and the capability to enter message content, such as text or an attachment. But we cannot stop with these two fields, this broad construction would encompass prior art technologies, such as pager messages, that the inventors excluded by using the term "electronic mail." Thus, we turn to the specification and extrinsic evidence to help determine the meaning of electronic mail to one of ordinary skill in the art. Electronic mail messages are prior art to the claimed invention as exemplified by the Background Art section of the written description. *See, e.g.*, '960 patent col.1 ll.43-44 ("The use of computers to send and receive electronic mail messages is becoming very popular globally."). In the Background Art section, the patent presents a definition of electronic mail as understood by a person of ordinary skill in the art:

> Electronic mail systems have several common items that must be entered in order to originate and send (format) an electronic message. These

> items include the destination address . . . an identification of the originating processor . . . the subject of the message . . . [and] the message or message text . . . .

'960 patent col.2 l.63-col.3 l.15. While this statement does not rise to the level of the inventor acting as its own lexicographer, it does provide insight into the understanding of the person of ordinary skill in the art at the time of the invention. NTP also presented the testimony of an expert that echoed this definition:

> a formatted text message that is transmitted over a communication system . . . [that] includes the following characteristics: (a) a destination address identifying the person(s), place(s), or object(s) to which the message is directed; (b) an indication of the sender (which may be added automatically by the electronic mail programming); (c) a subject field (which may be blank); and (d) the inputted message text.

2010-1243 J.A. 3094-95. Based on this evidence, we hold that a person of ordinary skill in the art would have recognized that an electronic mail message must include a destination address and must have the capacity to include an address of an originating processor, message content (such as text or an attachment), and a subject. There is no contrary record evidence. We cannot agree with the PTO's argument that the following specification quote requires us to affirm the Board's broad definition:

> The invention is user friendly in that *the minimum amount of information that must be provided* to initiate the transmission of electronic mail from an originating processor to at least one destination processor *is an identification of the destination processor* and information indicating

> that the message is to be sent by the RF information transmission network.

'960 patent col.19 ll.20-26 (emphases added). That specification quote does not state that "electronic mail" is anything with a destination address. Rather it explains that a destination address is the minimum amount of information necessary *to initiate transmission*. This portion of the specification is directed to the requirements and processes for transmitting the message and this quote is discussing what portion of the electronic mail is necessary for the initiation of the transmission. We do not agree with the PTO that this defines electronic mail. We hold that an electronic mail message is a message that includes a destination address and the capability for entry of message content, an identification of an originating processor, and a subject. Therefore, because the Board's construction of "electronic mail message" is incorrect, we vacate the Board's decisions as to the invalidity of the patents-in-suit and remand for the Board to apply the correct claim construction to the prior art.

Next, the Board construed "electronic mail system" to mean "[a] processor placing an electronic mail message on a transmission mechanism capable of delivering the message to the intended recipient . . . ." 2010-1263 J.A. 19. The Board's construction "does not require a plurality of processors." *Id.* NTP argues that this construction is incorrect. We agree.

The claims themselves require a "plurality" of processors in an electronic mail system. *See, e.g.*, '960 patent col.49 ll.2-4 (claiming "a *plurality of originating processors* in an electronic mail system" (emphasis added)); '611 patent col.47 ll.46-48 (same); '472 patent col.51 ll.3-4 (same); '670 patent col.53 ll.3-4 (same); '946 patent col.53 ll.3-4 (same); '172 patent col.53 ll.2-5 (same); '451 patent

col.27 ll.7-9 (claiming "a system comprising a communication system which transmits electronic mail, inputted to the communication system from a plurality of processors"). Moreover, the specifications of the patents-in-suit describe a system having a plurality of processors. *See, e.g.*, '960 patent Abstract ("A system for transmitting information from one of a plurality of originating processors."); *id.* col.20 ll.25-26 ("An electronic mail system for transmitting information from one of a plurality of originating processors . . . ."); *id.* col.20 ll.29-31 ("[S]toring the information received from one of the at least one originating processors . . . ."); *id.* col.20 ll.42-43 ("[W]herein the information from the one of the plurality of originating processors is transmitted . . . ."); *id.* col.21 ll.10-13 ("The receiving interface switch stores information . . . that is received from a plurality of originating processors . . . ."); *id.* col.21 ll.49-50 ("The number of originating processors is greater than the number of interface switches.").

Based on the claims and the specification, an "electronic mail system," as claimed, must contain a plurality of originating processors. Thus, the broadest reasonable construction of "electronic mail system" is the construction provided by this court in the previous RIM Litigation: "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." *NTP*, 418 F.3d at 1295.

II. Swearing Behind: 37 C.F.R. § 1.131 Affidavits and Evidence

One issue common to several appeals is whether NTP successfully antedated a number of references under 37 C.F.R. § 1.131. We review the Board's fact-findings for

substantial evidence. *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000). The critical date is October 29, 1990. In determining the date of reduction to practice, the Board focused on two aspects of the invention that it found to be critical to establishing an earlier invention date: "1) the requirement that e-mail be sent wirelessly and 2) the requirement that the electronic mail system transmit other originated information through a wireline without transmission using the RF information transmission network." 2010-1243 J.A. 193. NTP submitted inventor affidavits from Thomas Campana and Gary Thelen that allege a reduction to practice date prior to the critical date.

A party seeking to antedate a reference based on reduction to practice must present evidence of the actual reduction to practice of the invention prior to the effective date of the reference. 37 C.F.R. § 1.131(b). An inventor cannot rely on uncorroborated testimony to establish a prior invention date. *Id.* It has long been the case that an inventor's allegations of earlier invention alone are insufficient – an alleged date of invention must be corroborated. *Medichem S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1170 (Fed. Cir. 2006); *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1371 (Fed. Cir. 1998). "[E]vidence is assigned probative value and collectively weighed to determine whether reduction to practice has been achieved." *Medichem*, 437 F.3d at 1170. "Sufficiency of corroboration is determined by using a 'rule of reason' analysis, under which all pertinent evidence is examined when determining the credibility of an inventor's testimony." *Id.*

To corroborate the inventors' testimony, NTP submitted several pieces of evidence. First, it submitted the Telefind E-Mail Integration document (Telefind). NTP argued that Telefind Revision 0, dated October 6, 1990

(prior to the critical date), would corroborate the inventor's testimony. In reviewing the Telefind document, the Board noted that the only submitted version, Revision 2, had a date of April 9, 1991, long after the critical date of October 29, 1990. The Board thus held that NTP could not rely on the Telefind document to corroborate the Campana or Thelen testimony.

We agree with the PTO that substantial evidence supports the Board's refusal to accord the Telefind document the date of Revision 0. The only submitted version of the Telefind document is Revision 2, which is dated April 9, 1991. 2010-1243 J.A. 1540. NTP argues that Revision 0 and Revision 2 have all the same key components. Thus, NTP explains that what is disclosed in Revision 2 should be treated as present in Revision 0. To substantiate this claim, NTP relies upon the testimony of the same two inventors, Campana and Thelen. Mr. Campana states that "I have determined from a complete review of the documents . . . that the description of the system in the Telefind Email Integration Document which was revision 0 was written by me and was not substantially changed in the later revisions 1 and 2 . . . ." 2010-1243 J.A. 1524-25. Thelen testified similarly. *Id.* at 6819-20. The problem with NTP's argument is that it is circular. The affiants seek to corroborate their testimony with the Telefind document, but, at the same time, attempt to corroborate the date of the document with their testimony. It would be strange indeed to say that Mr. Campana, who filed the R.131 affidavit that needs corroborating, can by his own testimony provide that corroboration. We agree with the PTO that substantial evidence supports the Board's determination that the earliest reliable date for the Telefind document is April 9, 1991, the date of Revision 2.

NTP also relies on four letters written by Mr. Campana and a meeting report by Mr. Andros that allegedly detail the patented invention as well as two demonstrations of the patented technology. An August 16, 1990 letter from Mr. Campana describes attempts to integrate the technology with AT&T's networks. 2010-1243 J.A. 1562-63. This memo describes a "pager and a hand held messager" and describes the technology as "network messaging." *Id.* Later, on August 31, Mr. Campana composed a letter using similar language – "radio messaging" and "Messager pager." *Id.* at 1565-70. Again, on September 24, Mr. Campana wrote describing "one way radio paging," "one-way messaging," and mentioning that AT&T would like to demonstrate the technology at the Comdex show. *Id.* at 1572-73. A meeting report prepared by Mr. Andros describes an October 26, 1990 demonstration of the technology. *Id.* at 1583-84. This report describes the use of a pager as a wireless modem. *Id.* Finally, a November 21, 1990 letter from Mr. Campana describes the Comdex demonstration on November 10. This letter states that, at the Comdex demonstration, the system transmitted "E-mail."

The Board found that this evidence did not corroborate the testimony of the inventors. The Board noted that the Campana letters prior to the critical date only refer to "messaging" and never mention electronic mail. The Board found these letters "inconsistent" with Campana's testimony that he was working on an electronic mail implementation during the relevant time period. 2010-1274 J.A. 201. Further, the Board found that Campana's testimony and Mr. Andros' meeting report regarding the October 26, 1990, demonstration were "ambiguous" because neither stated that NTP demonstrated electronic mail. 2010-1274 J.A. 218. In coming to this conclusion, the Board relied on the testimony of the third inventor,

Michael Ponschke, from prior litigation involving the patents. In an initial deposition, Ponschke testified that the October 26, 1990 demonstration had included electronic mail. But in his later trial testimony, he recanted this statement, saying that "I apparently misspoke, [ ] we did not demonstrate e-mail. We demonstrated messaging." 2010-1274 J.A. 4280-81. The Board found that Mr. Ponschke's later testimony was consistent with the three pre-critical date letters from Mr. Campana and showed that the inventors did not demonstrate electronic mail prior to the critical date.

NTP argues that all of these documents taken together show that, prior to October 29, 1990, the inventors had reduced to practice the patented invention. It argues that, just days after the critical date, it demonstrated the fully complete invention in public at the Comdex demonstration. Further, it argues that these letters conclusively show that it had developed the technology to demonstrate to AT&T on October 26, 1990, three days prior to the critical date. NTP argues that the testimony of Mr. Ponschke should not outweigh this evidence.

This court does not reweigh evidence on appeal, but rather determines whether substantial evidence supports the Board's fact findings. We agree with the PTO that substantial evidence supports the Board's finding that these documents do not evidence a reduction to practice prior to the critical date. Mr. Ponschke's testimony is particularly damaging to NTP's case. He testified that "we did not demonstrate e-mail. We demonstrated messaging." 2010-1274 J.A. 4280-81. This is consistent with the language used in all of the documents prior to October 29. They simply referred to "messaging" or to a "pager." It was not until November 21, after the critical date, that any document stated that the system transmitted "E-mail." The November 21 letter details the demonstration

at the Comdex show of the transmission of electronic mail. The problem for NTP is that November 10, the date of the Comdex demonstration, is after the critical date (October 29). Proving a November 10 demonstration does not establish reduction to practice prior to October 29. Thus, substantial evidence supports the Board's determination that these documents do not corroborate the testimony of Mr. Campana and Mr. Thelen. None of the documents describes the transmission of electronic mail prior to the critical date and the testimony of Mr. Ponschke provides sufficient evidence to support the Board's findings.

NTP also relies on a number of software files (ATT files) to corroborate the testimony of Mr. Thelen. Mr. Thelen testified that the ATT files include the code that was demonstrated in October 1990. He states that "the very first ATT.LST file generated from the ATT file that is dated October 5, 1990 did in fact extract electronic mails from the pager and deliver them to the AT&T laptop." 2010-1274 J.A. 6230. The Board rejected Thelen's testimony regarding the ATT files. The Board stated "Thelen's testimony on sending e-mail appears to be contradicted by Ponschke who testified that they demonstrated messaging rather than e-mail in October, 1990." 2010-1274 J.A. 221.

We agree with the PTO that substantial evidence supports the Board's determination regarding the ATT files and Mr. Thelen's testimony. Although NTP argues that these files are "fully operational source code," NTP fails to point to any specific portion of the files that shows that the inventors transmitted electronic mail wirelessly prior to the critical date. Further, Thelen admits that he could not demonstrate the transmission of electronic mail using this supposedly fully functional code. 2010-1274 J.A. 6233 ("I also ran the . . . files using my current com-

puter . . . however, because I had no way of entering messages to a pager, the screen did not display any e-mails."). Instead, NTP relies on the existence of these files as corroboration of the testimony that the inventors demonstrated the patented technology. Again, this falls into the circular logic of using the files to corroborate the testimony and the testimony to corroborate the files. The Board did not err in finding that the software files did not overcome the testimony of Mr. Ponschke.

As an alternative argument for reversal, NTP argues that the Board's entire decision is tainted because the Board rejected the testimony of Mr. Campana and Mr. Thelen only because "(1) the declarants are interested in the outcome of the reexamination, and (2) many years had passed since the relevant events occurred." 2010-1275 Appellant's Br. 20. NTP argues that because R. 131 only allows declarations from inventors or patent owners, the declarant will always have an interest. Further, it argues that reexamination will often occur years after invention, so the Board effectively prevents anyone from relying on testimony to antedate a reference.

NTP is correct that the Board stated that it would not credit the testimony of Mr. Campana and Mr. Thelen due to their interest in the invention and the time that passed since the events in question. *See, e.g.*, 2010-1274 J.A. 221. Contrary to NTP's assertion, as shown above, the Board considered every piece of allegedly corroborative evidence and came to the reasoned decision that it did not corroborate the testimony of the inventors.

Finally, NTP argues that the Board erred by applying a different claim construction to the R. 131 issue than it did to the prior art references. NTP argues that, when considering its evidence of antedating, the Board refused to consider "messaging" as synonymous with electronic

mail. NTP argues that, contrary to this construction, the Board credited "messaging" prior art as teaching the electronic mail limitations of the claims. It argues that this cannot be proper and that we should require the Board to apply the same construction to both issues.

We agree that it would be improper to apply one claim construction to evidence of date of invention and a different one in assessing the prior art references. Though the Board may have erred in its construction of electronic mail message, NTP has failed to swear behind as its corroborative evidence does not support the transmission of electronic mail prior to the critical date even under its own construction, which we have adopted today. In assessing the evidence to antedate the references, the Board concluded that the evidence did not corroborate the inventors' claim of reduction to practice of the electronic mail system prior to the critical date. We conclude that this determination is supported by substantial evidence.

III. Telenor

The Board affirmed rejections of claims in several of the patents at issue based on Telenor. In addition to arguing that Telenor does not anticipate the claims, NTP argued to the Board that Telenor is not a "printed publication" under 35 U.S.C. § 102(b). It based this on two distinct arguments: that Telenor is not authentic and that it was not reasonably accessible.

Telenor came to the PTO by way of the third-party reexamination requester. The requester apparently located the documents in the Norwegian University of Science and Technology (Library) in Trondheim, Norway. Each of the volumes of Telenor was marked as received and catalogued on a date more than one year prior to the critical date of the patents at issue.

The Board considered a letter from the Director of the Library that detailed its procedures for receiving, date stamping, and cataloguing documents at the time the Library received Telenor. 2010-1263 J.A. 4463-69. The Director stated that the Library date stamped all documents upon receipt. *Id.* at 4464. The Library then classified the references under an appropriate subject matter category. The Director explained that the Library classified Telenor under the subject headings "computer networks" and "communication protocols." *Id.* The Library loaded information about the reference into BIBSYS, an online catalogue. BIBSYS allowed searching by author, title, classification number, subject heading, and other fields. *Id.* According to the Library, Telenor would have been available for search shortly after its arrival at the Library.

The Board also considered a declaration of Petter Sorsdahl, a Swedish patent attorney, submitted by the reexamination requester. Mr. Sorsdahl testified that he believed that a search in 1989 at the Library would have uncovered Telenor. Mr. Sorsdahl testified that the invention of the patents at issue was "mobile data networks" and "mobile telephony." 2010-1243 J.A. 146. Thus, the Board concluded, based on Sorsdahl's testimony, that because the invention of the patents is similar to the title of Telenor and its classifications at the Library, one of ordinary skill in the art would locate Telenor after reasonable search.

The Board considered the declaration of a forensic document investigator, David Browne, submitted by NTP. Mr. Browne analyzed Telenor for evidence that would suggest the documents may not be authentic. He focused primarily on three pieces of evidence. First, he testified that certain documents had multiple staple holes indicating that they were disassembled at some point. He stated

that this means that it is "possible" that the references were taken apart and put back together. 2010-1263 J.A. 6825-27. Second, Mr. Browne testified that Telenor included pages that came from different "batches" of paper. *Id.* J.A. 6828. Third, Mr. Browne testified that on several pages, the header on a page appeared to be different from the text on the same page. He testified that this meant that someone could have altered the text of the pages. *Id.* at 6829.

Finally, the Board considered the declaration of Dr. Rhyne, who testified that one skilled in the art would not have located Telenor through a reasonable search. Specifically, Dr. Rhyne posited that the field of the invention of the Campana patents is "electronic mail" and thus one skilled in the art would not have searched for "computer networks" or "communications protocols." 2010-1243 J.A. 3088-89.

The Board held that Telenor is a printed publication under 35 U.S.C. § 102(b). It noted that this case is similar to *In re Hall*, 781 F.2d 897 (Fed. Cir. 1986) where a single thesis catalogued and shelved in Germany was a "printed publication" under § 102(b). The Board explained that the proponent of the reference must establish a prima facie case that it is prior art, and then the burden shifts to the patent owner. Regarding authenticity, the Board afforded much weight to the letter from the Library detailing its procedures for receiving, date-stamping, and cataloguing references. The Board noted that the date stamp showed that the documents were deposited with the Library before the critical date. The Board then found that the testimony of Mr. Browne did not establish that the document was altered after the critical date. Although the Board noted that it "in no way suggest[ed] that [Browne] is not telling us the truth about his examination," it nonetheless found nothing in his testimony to overcome

the evidence of authenticity. 2010-1243 J.A. 183-84. It noted that Browne only testified that "something may not be right" with Telenor, but was unable to show any evidence that it was altered *after* the critical date.

Regarding accessibility, the Board found that Dr. Rhyne defined the field of the invention too narrowly. The Board explicitly credited the testimony of Mr. Sorsdahl over that of Dr. Rhyne, agreeing that the terms that the Library used to classify Telenor were relevant to the claimed invention and that Dr. Rhyne was too narrow in his opinion that only a classification under "electronic mail" would be sufficient.

A. Authenticity

Consistent with the approach of our sister circuits, we hold that the authenticity of a document is a question of fact. *See, e.g.*, *United States v. Vidacak*, 553 F.3d 344, 349 (4th Cir. 2009); *United States v. Weiland*, 420 F.3d 1062, 1071 n.6 (9th Cir. 2005); *United States v. Carson*, 969 F.2d 1480, 1500 (3d Cir. 2000). Therefore, we review the Board's fact-findings regarding authenticity for substantial evidence.

We hold that substantial evidence supports the Board's finding that the Telenor documents are authentic. We agree with the Board that the letter from the Library is extensive and complete. Further, we have held in the past that "[c]ompetent evidence of general library practice may be relied upon to establish an approximate time when a thesis became available." *Hall*, 781 F.2d at 899. This case is distinguishable from *In re Bayer*, 568 F.2d 1357, 1362 (CCPA 1978), where there was no evidence that the received document was catalogued or shelved.

The Board's determination regarding Mr. Browne's affidavit is supported by substantial evidence. Mr.

Browne's testimony suggests that the documents may have been taken apart and reassembled. For example, Mr. Browne stated that "I noted there were slight abrasions on the paper . . . [t]hese marks are clear signs that an implement was used to remove staples from the page/s." 2010-1263 J.A. 6826. Mr. Browne also stated that there were abnormalities with page headers that indicated that the header and the page text may have been created at different times. *Id.* at 6829 (stating that "[t]he disparity between this header on each page and the rest of the text indicates that the contents of the page have been copied onto paper on which a copy of the header already exists"). Further, Mr. Browne observes that "a number of pages within each book were from different batches of paper." *Id.* at 6828.

This testimony may support a finding that the document was taken apart and reassembled with staples or that some of the pages may have been photocopied and inserted. But there is an essential element missing from Mr. Browne's analysis: he does not show any evidence that the alterations took place after the document was deposited with the Library or after the critical date. His testimony only indicates that the documents may have been altered. For example, Mr. Browne states that some pages came from different "batches" of paper, but he fails to indicate that this provides any information about the timing of any alterations. Just because a different batch of paper was used does not mean that an alteration necessarily occurred after the document was deposited with the Library. Likewise, the disparate headers may seem curious, but they give no indication as to the date of any alleged modification. NTP had the burden to prove that the document was not authentic. The Board's conclusion that NTP has failed to establish that any modifications

occurred after the documents were deposited in the Library is supported by substantial evidence.

In addition to its failure to show that modifications to the document were after the date of deposit with the Library, NTP further failed to show that the modifications were relevant. Specifically, NTP does not list all the pages or portions of pages of Telenor that were allegedly altered. This makes it impossible to determine whether the allegedly altered pages were the ones that disclosed the matter relied upon by the Board. For these reasons, we agree with the PTO that the Board did not err in finding Telenor authentic.

B. Accessibility

Whether a reference is publicly accessible is a question of fact that we review for substantial evidence. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004) (holding that whether a reference is publicly accessible is based on the "facts and circumstances surrounding the reference's disclosure to members of the public"). A reference is publicly available if it was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." *Kyocera Wireless Corp. v. Int'l Trade Comm'n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008).

The Board's determination that Telenor was publicly accessible is supported by substantial evidence. The Board is correct that the patent specification is drawn to a wider field than simply "electronic mail." The title of the document itself, "Mobile Data Network Description," is descriptive of the subject matter of the patents and the problem the patents purport to solve – the transmission of data to mobile computers. The subject matter categories

Telenor was assigned by the Library, "computer networks" and "communication protocols," are similarly indicative of the subject matter of the patents at issue. These facts alone amount to substantial evidence that Telenor was available to one of ordinary skill in the art exercising reasonable diligence. Finally, we will not set aside the Board's determination that Mr. Sorsdahl's opinion was more credible than Dr. Rhyne's regarding the correct field of invention. Mr. Sorsdahl stated that one of ordinary skill in the art would search for the term "mobile data network" when looking into the technology of the patented invention and thus would have uncovered Telenor.

The Board's factual determinations are supported by substantial evidence. In light of those facts, we agree with its legal conclusion that Telenor is a "printed publication" under § 102(b).

IV. Prior Art Rejections

In the preceding sections, we have addressed NTP's arguments regarding general issues that affect a number of patents at issue. Although we must remand based on our claim construction of "electronic mail [message]," there are several issues relating to specific prior art references that we can resolve because they are unrelated to this construction. Anticipation is a question of fact as is the question of what a reference teaches. *Para-Ordnance Mfg. v. SGS Importers Int'l*, 73 F.3d 1085, 1088 (Fed. Cir. 1995); *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991). Obviousness is a question of law that we review *de novo* with underlying factual findings. *See KSR Int'l Co. v. Teleflex, Inc.*, 500 U.S. 398, 427 (2007). We address each basis of rejection in turn.

A. Applicant's Admitted Prior Art in view of Harrison

In several of the patents at issue, the Board affirmed rejections of claims over the applicant's admitted prior art (AAPA) in view of U.S. patent no. 5,181,200 (Harrison) and other references. The relevant AAPA is best described in reference to '960 patent figure 1:

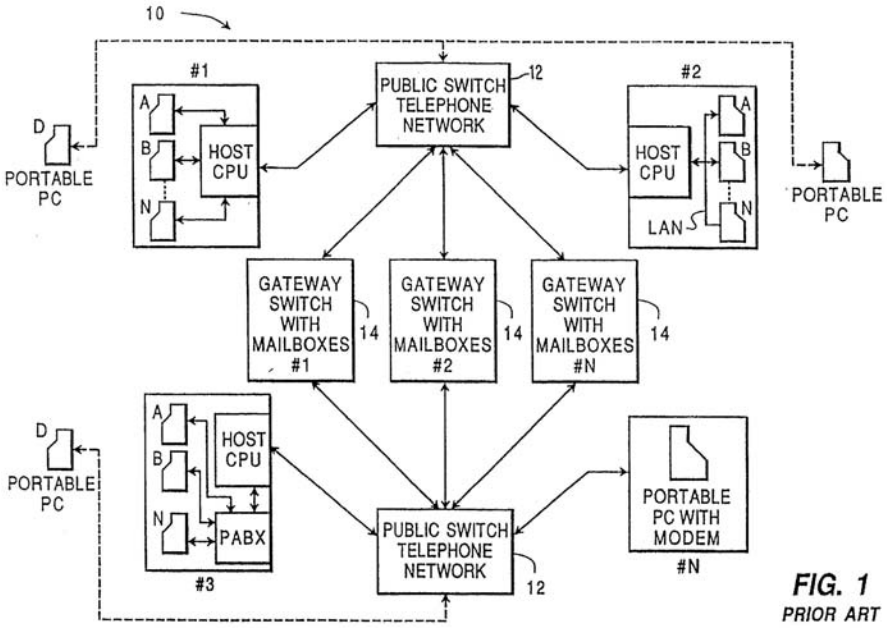


FIG. 1
PRIOR ART

The Board found that elements marked #1 and #3 in this figure along with the gateway switches constitute an electronic mail system. The Board further found that the Host CPU of element #2 constitutes an "interface" connecting the electronic mail system to the LAN, an "information transmission network." The Board acknowledged that the AAPA does not disclose an interface with an RF network—indeed, the AAPA would then anticipate the claims. For this limitation, the Board relied on Harrison. The Board found that Harrison discloses a system that incorporates an RF network into an existing LAN. The

Board held that it would have been obvious to incorporate the RF network of Harrison into element #2 of the AAPA with the Host CPU acting as the interface.

NTP argues that the Host CPU in Box #2 is not the claimed "interface" between an electronic mail system and an RF information transmission network. Rather, NTP argues that the Host CPU is part of the electronic mail system itself. NTP also argues that even if the Host CPU could be an "interface," Harrison does not cure the fact that the AAPA does not disclose an RF information transmission network. The Board stated that this modification would "improve the RF subsystem of the [AAPA] by allowing portable units to connect without the need to dial in to a BX or PSTN." 2010-1263 J.A. 97-98. NTP argues that this reasoning makes no sense because the portable computers of the AAPA specifically connected via a phone line.

As an initial matter, our construction of "electronic mail [message]" is irrelevant to this basis for rejection because the AAPA is the "Background Art" of the subject specifications that includes the four-item description of electronic mail. Further, the AAPA clearly teaches the other limitations of the claim with the exception of the RF network. Harrison teaches the use of an RF network to deliver data. Thus, the Board's findings regarding the content of the references are supported by substantial evidence. However, we hold that, as a matter of law, the claims would not have been obvious to one of ordinary skill in the art based on the combination of the AAPA and Harrison. The Board improperly relied on hindsight reasoning to piece together elements to arrive at the claimed invention. "Care must be taken to avoid hindsight reconstruction by using 'the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the

result of the claims in suit.'" *Grain Processing Corp. v. American-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983)). Given any network, we could likely carve out a possible "interface" and combine it with Harrison to hold that the addition of a RF information transmission network would have been obvious. This type of piecemeal analysis is precisely the kind of hindsight that the Board must not engage in. The Board's position is further weakened by the fact that the AAPA already discloses an RF network that connects portable computers to the system. '960 patent col.2 ll.1-4. Thus, adding an RF network to element #2 in the figure would render the RF network connecting the portable PCs in figure 1 superfluous. Because it is based on improper hindsight reasoning, we reverse the Board's rejections based on the AAPA in view of Harrison.

B. Verjinski

The Board affirmed the rejections of a number of claims based on Verjinski, "PHASE, A Portable Host Access System Environment" 3 IEEE Military Communications Conference 1989, 0806-09 (October 18, 1989) (Verjinski). Verjinski discloses a system for connecting wireline "remote hosts" with portable computers over a wireless link called Portable Host Access System Environment (PHASE). Verjinski at 806; 2010-1263 J.A. 1681. Verjinski specifically contemplated use of the system in sending electronic mail using SMTP between two nodes. *Id.* The interface between the wireline and portable hosts is called the Portable Host Access Component (PHAC). *Id.* The system is shown in figure 1:

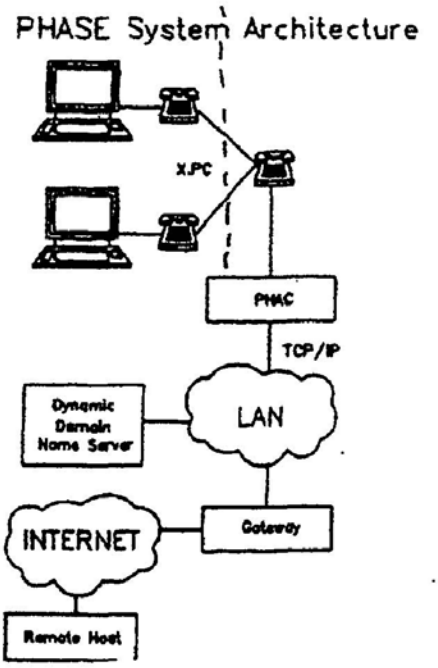


Figure 1.

When a user at a portable computer (shown at the top of this figure) wishes to interface with the system, the user dials into the PHAC. The PHAC assigns a temporary IP address to the portable computer and allows the computer to communicate with the Internet. Verjinski explicitly discloses the use of a cellular telephone network to connect the PHAC to the portable computers.

NTP argues that Verjinski fails to teach the transmission of electronic mail. NTP also argues that Verjinski's PHAC is not an "interface" as claimed. It argues that the PHAC does not connect to an RF information transmission network or an "electronic mail system," but to "a single computer."

On remand, the Board must determine whether Verjinski teaches electronic mail under our construction. NTP's remaining arguments regarding the disclosure of Verjinski are without merit. We agree with the Board that the PHAC corresponds to the claimed "interface" because it connects to more than just a single computer. There is substantial evidence from the reference itself that "Verjinski discloses that the design of the PHAC allows eight [ ] connections to portable hosts." 2010-1263 J.A. 80. These portable hosts can amount to an "electronic mail system" under our construction from *NTP* assuming that they transmit "electronic mail" as construed herein. Thus, the PHAC of Verjinski satisfies the claimed "interface" limitation.

The claims at issue also require that the system transmit originated information over both the RF network and over a wireline network. Specifically, claim 1 of the '670 patent requires that:

> other originated information originating from one of the originating processors is transmitted . . . without using the RF information transmission network to at least one of the destination processors.

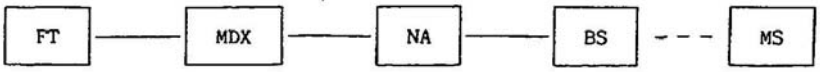
Although Verjinski does not disclose communication without using the RF link, the Board held that "[i]t is rudimentary and mere common sense that if a remote host has reason to communicate with a user who is using a portable computer, it may similarly have reason to communicate with a user who is operating a wirelined computer." 2010-1263 J.A. 84.

If we agree with the PTO, this limitation of the claims is essentially irrelevant because any computer user may want to transmit to both wireline and wireless nodes. For other references discussed below, such as Perkins, the

Board found it necessary to combine with a reference like Hortensius to teach this limitation. The same logic should apply to Verjinski. While this limitation might have been obvious over Verjinski in view of another reference, we cannot agree that it would have been obvious over Verjinski alone. Thus, the Board erred in this holding.

C. Telenor

Telenor describes a "Mobile Data Network" that is "capable of transferring messages between fixed terminals and mobile stations." The following figure shows the system elements[3]:



The link between the BS and the MS is an RF network. Although this figure shows a single set of processors in the system, each MDX handles a number of fixed terminals. Similarly, each MDX connects to a number of network adapters which in turn connect to a number of base stations that connect to a number of mobile stations. The system provides operation between up to 5000 fixed terminals and up to 100,000 mobile stations using 50 MDXs.

One of the functions of the MDX is a "mailbox service." The reference explicitly discloses use of the X.400 protocol. The MDXs communicate with a message handling system via a Message Handling System Internetworking Unit (MIWU). The MDXs are key to providing

[3] FT = Fixed Terminal; MDX = Mobile Data Exchange; NA = Network Adapter; BS = Base Station; and MS = Mobile Station.

internetworking between fixed stations and mobile stations in the system.

The Board rejected NTP's argument that Telenor "does not enable one with ordinary skill in the art to build a system for transmission of originated information from an RF information transmission network to an RF receiver." NTP argued that Telenor fails to disclose the means of communication between the base station and the mobile station. NTP contended that the absence of this disclosure is evidence that the Telenor developers had not resolved how to perform this communication at the time the document was prepared. The Board held that NTP only pointed to the absence of specifics and put forth no evidence that it would require undue experimentation to "fill in" this missing disclosure. 2010-1263 J.A. 59.

NTP makes the same argument on appeal focusing on the link between the base station and the mobile station in the Telenor figure above. NTP concedes that Telenor discloses protocols for this communication. 2010-1263 Appellant's Br. 53. But it argues that Telenor fails to disclose how one would use these protocols. Telenor states that this transmission "will depend on the functionality of the protocol chosen for [communication]." NTP further complains that the Board failed to credit its expert's testimony that "at the time this document was written, the Telenor authors had not resolved how to transfer radiograms between a base station and the mobile stations." 2010-1263 J.A. 3978-79. NTP argues that this is "the only evidence of record regarding enablement." 2010-1263 Appellant's Br. 53.

A patent claim "cannot be anticipated by a prior art reference if the allegedly anticipatory [disclosure] cited as prior art [is] not enabled." *Rasmusson v. Smithkline*

Beecham Corp., 413 F.3d 1318, 1325 (Fed. Cir. 2005) (quoting *Elan Pharm, Inc. v. Mayo Found. for Med. Educ. & Research*, 346 F.3d 1051, 1054 (Fed. Cir. 2003)). Although anticipation is a question of fact, *Baxter*, 952 F.2d at 390, whether a prior art reference is enabling is a question of law with underlying factual inquiries. *In re Gleave*, 560 F.3d 1331, 1335 (Fed. Cir. 2009).

We agree with the PTO that Telenor is a sufficiently enabling disclosure as a matter of law. Simply because Telenor did not include every possible implementation does not mean one of ordinary skill in the art would not recognize the description as enabled. It is sufficient that Telenor disclosed a protocol that one of ordinary skill in the art would be able to use to implement the disclosed system. The link between the base station and the mobile station is not the focus of the reference, and the protocols function as a guide to teach one of ordinary skill in the art to accomplish this communication without undue experimentation. NTP is incorrect that its expert testimony is the only evidence on the record regarding enablement. The Telenor reference itself provides the necessary evidence to satisfy this requirement. Thus, the Board did not err in its enablement determination.

Regarding several dependent claims in the various patents, NTP argues that Telenor fails to teach that the required interface "assembles the originated information with other originated information received from a plurality of the originating processors . . . into a packet." 2010-1263 Appellant's Br. 55. In other words, this claim limitation requires the interface to bundle multiple communications into a single packet. The Board notes that Telenor discloses some grouping of messages for transmission. Specifically, it points out that "one single MDX may send several deliver [sic] messages to a NA." 2010-1263 J.A. 63. But this does not directly address the claim

language that requires assembling originated information from a plurality of originating processors into a single packet. While the PTO argues that Telenor teaches something equivalent to the use of packets,[4] the reference does not disclose that a single packet may contain originated information from a plurality of originating processors. Thus, the Board's finding that Telenor teaches this claim limitation is not supported by substantial evidence. Keeping in mind that these are anticipation, not obviousness rejections, the failure to disclose this claim element requires reversal of these rejections. It is axiomatic that for anticipation, *each and every* claim limitation must be explicitly or inherently disclosed in the prior art. *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010); *Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 797 (Fed. Cir. 2010); *Verizon Servs. Corp. v. Cox Fibernet Virginia, Inc.*, 602 F.3d 1325, 1336-37 (Fed. Cir. 2010); *Iovate Health Sci., Inc. v. Bio-engineered Supplements & Nutrition, Inc.*, 586 F.3d 1376, 1380 (Fed. Cir. 2009).

Next, NTP argues that Telenor's interface does not "[remove] from the originated information information added by the electronic mail system . . ." as required by certain dependent claims. *See* '670 patent claim 19. This claim limitation requires that the interface remove some information (such as an address) in order to replace it with other information (such as an address of a different format). The Board relies on the message forwarding function of Telenor. We agree with NTP that, while

[4] Because it is unnecessary to the resolution of this issue, we will not decide whether substantial evidence supports the finding that Telenor discloses the use of packets generally, only whether it discloses the inclusion of originated information from a plurality of originating processors into a single packet.

message forwarding may require appending a new address to the originated information, it does not inherently require that any previously added information be removed as the claims require. Telenor is silent about the removal of information; thus, substantial evidence does not support the Board's fact-finding and we reverse the anticipation rejection of all affected claims.

Finally, NTP argues that Telenor fails to disclose that the destination processor includes a "program . . . [that] makes the other originated information accessible to application programs stored within the at least one destination processor." *See* '611 patent claim 77. We agree with the PTO that the destination processor of Telenor (labeled MS), necessarily includes a program that can make originated information available to other programs on the same destination processor. Thus, substantial evidence supports the Board's finding.

D. Perkins in View of Hortensius and Additional References

The Board affirmed the rejections of several claims under 35 U.S.C. § 103 over U.S. patent no. 5,159,592 (Perkins) in view of U.S. patent no. 5,917,629 (Hortensius) and other references. Perkins teaches a system for communication between mobile users shown in figure 2:

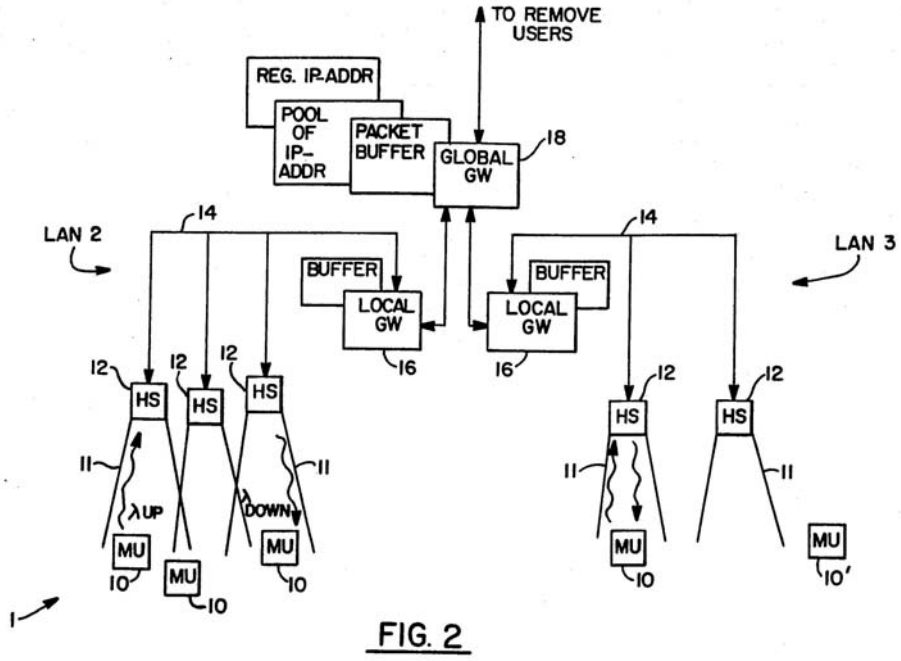


FIG. 2

The system allows bidirectional communications between mobile units (MU) 10. Perkins col.3 ll.16-21. One of the possible types of communications is "mail." *Id.* col.7 ll.37-39. Because the MUs are not permanent, the global gateway 18 assigns each mobile unit a "pseudo-IP" address. *Id.* col.5 ll.2-6. A user at an originating processor may send a message destined for an MU. The message is routed through the global gateway, which inserts the pseudo-IP address of the destination MU. Each pseudo-IP address includes digits to identify the LAN of the MU. *Id.* col.4 ll.39-48. The global gateway then forwards the message to the appropriate LAN's local gateway for delivery to the appropriate MU. *Id.* col.5 ll.28-30.

NTP argues that the Board erred in rejecting certain dependent claims that require that a receiving RF device have "at least one application program, executed by the processor, which processes the information [contained in

an electronic mail]." '451 patent claim 248. If NTP is correct, then the rejection of these claims is improper regardless of whether Perkins discloses electronic mail. We agree with the PTO that Perkins teaches a processor that necessarily processes the information received by the RF receiver. The RF receiver receives the information and makes it available to the destination computer. This alone is some amount of "processing." NTP would have us adopt Dr. Rhyne's definition of "application program" that requires "substantial useful functions" for a user. 2010-1254 Appellant's Br. 40. We decline to adopt this rigid definition and agree with the PTO that substantial evidence supports a finding that Perkins discloses this limitation.

Further, substantial evidence supports the Board's finding that Perkins teaches the addition of RF identification information by an interface. Perkins teaches the assignment of a pseudo-IP address to mobile units (which correspond to the RF receivers). Perkins col.4 ll.49-60. This address is added by an interface (the global gateway).

Regarding Hortensius, NTP argues that it fails to teach the very limitation for which the Board relied on it: transmission via a wireline network rather than the RF information transmission network. But it is clear that Hortensius does indeed teach this limitation. Hortensius teaches a system for transmitting information between nodes that may be "data processors, network servers and/or any of a number of conventional devices." Hortensius col.3 ll.5-7. Importantly, Hortensius states that "the packet 40 may be directed from wired node 14 to another wired node 14 or, via the protocol processor 28 and transmitter 24, to one of the wireless nodes 18." *Id.* col.4 ll.13-16. NTP makes much of the fact that Hortensius discloses a broadcast mode when all of the wired and

wireless nodes receive a transmission. *See id.* col.4 ll.21-29. But this disclosure of a broadcast mode does not conflict with or alter the earlier statement that an individual packet may be directed either between two wired nodes or between a wired and a wireless node as the claim requires. Thus, substantial evidence supports the Board's finding.

NTP also challenges the Board's holding that certain claims are obvious over Perkins in view of Hortensius and the AAPA. Specifically, NTP argues that none of these references teach "the one interface switch . . . assembles the originated information with additional originated information . . . into a packet . . . ." '960 patent claim 3. We agree with the PTO that substantial evidence supports the Board's finding. Specifically, the AAPA states that "X.24 protocol permit[s] a variable number of pages or data transmissions each with its own network destination to be formed into a packet which is transmitted to a single switch." *Id.* col.7 ll.29-32. We also agree with the Board's conclusion that it would have been obvious to combine these multiple communications into a single packet.

Finally, NTP argues that the Board erred in holding that certain claims would have been obvious over Perkins in view of Hortensius, the AAPA and further in view of "Notable Computer Networks," Communications of the ACM, October 1986, Vol. 29, No. 10 (Quarterman). 2010-1274 J.A. 9049. NTP argues that these references fail to teach that:

> the wireline . . . is one of either a public or private switch telephone network with the at least one destination processor being addressed during transmission of the other originated information to the at least one destination processor when us-

> ing the public or private switch telephone network with a different address than the address used during transmission of the originated information to the at least one of the plurality of destination processors by the RF information transmission network.

'960 patent claim 7. In other words, when transmitting over wireline, the wireline must be a phone line and the destination processor must have a different address than it would when the message is sent wirelessly. NTP's arguments are factual in nature: that no reference teaches this claimed feature. However, Quarterman states that "[a] resource may have more than one name, address, or route" depending on the type of network. 2010-1274 J.A. 9055-56. We agree with the PTO that this is substantial evidence to support the Board's fact-finding that Quarterman discloses this claim limitation.

V. NTP's Concessions

NTP made a number of concessions that it may not reargue on remand. These concessions are detailed in NTP's reply brief in the 2010-1274 appeal on pages 25 through 29.

One of the key concessions revolves around the references' disclosures of the use of TCP/IP. Many of the claims at issue include limitations like "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." '960 patent, claim 1. In its opening brief (and before the Board), NTP argued that several references failed to teach this limitation. In its reply brief, NTP conceded that this limitation is taught by Perkins, Verjinski, Cole, and Harrison. 2010-1274 Reply Br. 25-29. Specifically, NTP conceded that, in a TCP/IP system, data that are routed through any node necessar-

ily has the address of that node added to it somewhere in the electronic mail system. *Id.* at 28.

NTP also conceded that, in Perkins, "the address associated with the processor in the mobile unit is transmitted with the originated information." 2010-1274 Reply Br. 25. Regarding Verjinski, NTP conceded that "the IP address of the portable host does uniquely identify the processor in the portable host and the RF receiver (phone)." *Id.* at 26. Finally, regarding Telenor, NTP conceded that "the address of the User Agent is the same as the identification of the User Agent's wireless device." *Id.* at 29.

This was the opportunity for NTP to appeal these issues. Given that it raised these issues, but then conceded them, NTP is bound by these concessions and may not reargue these points.

CONCLUSION

The Board's construction of the term "electronic mail [message]" was unreasonably broad. Because this construction is relevant to many of the bases for rejection, we remand for further proceedings in accordance with this opinion. However, we agree with the Board that NTP failed to "swear behind" certain references and that Telenor is a "printed publication" under § 102(b). Therefore, the Board need not reconsider those issues or any other issue expressly addressed in this opinion.

VACATED-IN-PART, REVERSED-IN-PART, AND REMANDED

COSTS

No costs.