United States District Court,
D. Delaware.

AT & T CORP,
Plaintiff.
v.
EXCEL COMMUNICATIONS, INC.; Excel Communications Marketing, Inc.; and Excel Telecommunications, Inc,
Defendants.

No. CIV. A. 96-434-SLR

Oct. 25, 1999.

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MEMORANDUM OPINION

ROBINSON**, District J.**

I. INTRODUCTION

Plaintiff AT & T Corporation ("AT & T") instituted suit against defendants Excel Communications, Inc., Excel Communications Marketing, Inc., and Excel Telecommunications, Inc. (collectively "Excel"), alleging infringement by Excel of U.S. Patent No. 5,333,184 (" '184 patent"), which is directed to a method for generating message records for interexchange telephone calls. This court has subject matter jurisdiction pursuant to 28 U.S.C. s. 1338.

On April 14, 1999, the Federal Circuit held that the asserted claims of the '184 patent are directed to statutory subject matter as defined under 35 U.S.C. s. 101 and remanded the case to this court for further proceedings. *See AT &* T Corp. v. Excel Communications, Inc., 172 F.3d 1352 (Fed.Cir.1999). Currently before the court are various motions for summary judgment on the issues of infringement and validity.

II. BACKGROUND INFORMATION

As recently as 15 years ago, AT & T was the primary provider of telephone service in the United States. Consistent with the final order entered in United States v. AT & T, 552 F.Supp. 131 (D.D.C.1982), *aff'd sub nom,* Maryland v. U.S., 460 U.S. 1001 (1983), AT & T agreed to divest itself of its local telephone companies in exchange for retaining its long distance and equipment manufacturing businesses. Consequently, local phone companies (local exchange carriers or "LECs") have been required to offer to all interexchange carriers ("IXCs") FN1 access to the local exchange network that is "equal in type, quality, and price" to that offered to AT & T and its affiliates. The "equal access" directive not only required that IXCs would receive equal transmission quality, but also that callers would have the opportunity to presubscribe their telephones to an IXC other than AT & T.FN2

FN1. LECs are the telephone companies that provide the physical connection between a subscriber's telephone and the local switching office. These companies provide local telephone service and connect customers to IXCs for handling long-distance calls.

IXCs are either "facilities-based," or "resellers." *See In the* Matter of WATS Int'l Corp. v. Group Long Distance (USA), Inc., 12 F.C.C.R. 1743, 1744 n. 5 (1997). A facilities-based IXC is a carrier that provides telecommunications services from facilities (i .e., switches and transmission lines) which they own, operate, lease or otherwise control. AT & T is a facilities-based IXC.

Excel is a "reseller." Excel does not own, operate, lease, or otherwise control facilities for carrying the interexchange calls of its customers but does provide billing and other customer services. Resellers such as Excel are regulated as common carriers by the FCC even though they do not actually carry the long-distance calls of their customers. *See AT &* T v. FCC, 572 F.2d 17, 24 (2d Cir.1978) ("A common carrier is one which undertakes indifferently to provide communications service to the public for hire, regardless of the actual ownership or operation of the facilities involved.").
FN2. Before the advent of "equal access," all interstate long-distance calls dialed on a 1+ basis were routed by the LEC to AT & T. A caller could reach another IXC only by dialing a seven-digit phone number, as well as a lengthy identification code, prior to dialing the called number. "Equal access" enabled callers to select a carrier other than AT & T to provide them long-distance phone service on a simple "1+" dialing basis.

By September 1986, LECs were required to develop a mechanism for local phone customers to choose IXCs other than AT & T to be their "primary interexchange carrier" ("PIC"); that is, the carrier that would provide long-distance service for calls dialed from the customer's telephone.FN3 Implementation of such "equal access" ensured that when a subscriber made a 1+ long-distance call, the subscriber's LEC would, with some geographic exceptions, direct the call to the network of the subscriber's PIC.

FN3. *See* U.S. v. Western Elec. Co., 578 F.Supp. 668, 670 (D.D.C.1983).

III. THE '184 PATENT

The '184 patent generally "relates to arrangements used in telephone networks for recording messages used to bill charges for interexchange calls." ('184 patent, col. 1, lns. 6-8) The invention is "more particularly"

described as relating "to the generation of message records for long-distance- or so-called interexchange-calls, which involve the use of the facilities of a long-distance, or interexchange, carrier, also referred to as an IXC ." ('184 patent, col. 1, lns. 30-34) The real-world context for the invention is described generally in the specification as follows:

Each subscriber to a local telephone service from a local exchange carrier, or LEC ..., has an associated "primary interexchange carrier," or PIC, that was selected by or for the local subscriber.... When a long-distance call is initiated by the subscriber, the call is routed through the network of the originating subscriber's LEC, over the network of the PIC and, ultimately, through the network of the LEC which has as one of its subscribers the called party. At the termination of the call, a switch which carried the call-illustratively a switch in the interexchange carrier's network-generates the AMA [automatic message account]....

('184 patent, col. 1, lns. 35-49)

In a typical system, the message records ... are transmitted from an originating switch to a message accumulation system. The latter distributes the accumulated messages to appropriate further processing systems which translate the AMA message records into the industry-standard "exchange message interface," or EMI, message record format. The EMI records are thereupon forwarded to a rating system which, *inter alia,* computes the toll charges applicable to the calls and adds an indication of those charges to the EMI record. The records thus formed are forwarded to a billing system in which they reside until processed to generate, typically, "hard copy" bills which are mailed to subscribers.

('184 patent, col. 1, lns. 14-29)

The '184 patent specifically involves the addition of "a further piece of data"-the PIC indicator-to the typical message record fields FN4 by the rating systems. "Each rating system, in order to generate the PIC indicator, needs to be able to access a comprehensive database in which all [of a certain IXC's] subscriber telephone numbers are stored." ('184 patent, col. 5, lns. 33-36) As noted, the generation of the PIC indicator in the embodiment described in the specification occurs in the rating system:

FN4. The "[t]ypical message record fields are the originating and terminating telephone numbers and elapsed time of call." ('184 patent, col. 1, lns. 12-14)

In particular, it is first determined at step 506 whether the originating subscriber is PIC'd to IXC 30. If not, there is no need to continue further inasmuch as PIC indicator 3410 will necessarily be in the "not set" state, as shown in FIG. 3. On the other hand, if the originating subscriber is PIC'd to IXC 30, then it is determined at step 508 whether the terminating subscriber is PIC'd to IXC 30. If the terminating subscriber is not PIC'd to IXC 30, then, again, PIC indicator 3419 will be left in the "not set" state. If, however, the terminating subscriber is PIC'd to IXC 30, then PIC indicator 3419 will be put in the "set" state, as indicated at step 511. After perhaps performing various other functions not relevant here, rating system 331 transfers, or transmits, the now rated and PIC-evaluated EMI message to a billing system for subsequent processing.
('184 patent, col. 5, lns. 45-61)
The value of PIC indicator 3419 ... is an indication as to whether the PIC of the terminating subscriber of the call in question is IXC 30. In various embodiments, this indication may take the form of a code which actually identifies the terminating subscriber's PIC. Or the PIC indicator may simply be in the form of a flag,

or indicator, which indicates, at a minimum, whether or not the terminating subscriber's PIC is IXC 30. In the present illustrative embodiment, however, PIC indicator 3419 is even more explicit than that. In particular, its value indicates whether or not both the terminating and originating subscribers' PIC is IXC 30.

('184 patent, col. 4, lns. 11-22)
In summary then, the crux of the invention is to include a "PIC indicator" in the standard EMI message record. As explained above, a "PIC" is the "primary interexchange carrier" associated with a local subscriber; when said subscriber initiates a long-distance call, that call is routed over the network of that subscriber's PIC by the LEC absent some further intervention by the subscriber. ('184 patent, col. 1, lns. 35-45) A "PIC indicator" is some indication of whether the terminating subscriber's PIC is the same as the originating subscriber's PIC, information which traditionally has not been relevant to the question of whether and to what extent the originating subscriber should be charged for a long-distance call. In accordance with the '184 patent, the "PIC indicator"

may be used by an interexchange carrier when bills are rendered for its subscribers-for example, to provide different billing treatment for calls that were made over that carrier's network to terminating subscribers whose PIC is, in fact, that very carrier, as opposed to calls that were made to subscribers with a different PIC.

('184 patent, col. 1, ln. 67-col. 2, ln. 5)

The four independent claims asserted by AT & T against Excel read as follows:

1. A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and

including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers.

* * *

12. A method for use in a telecommunications system in which each subscriber has a primary interexchange carrier (PIC) over which interexchange calls initiated by that subscriber are carried, said method comprising the steps of:

generating a message record for each interexchange call between an originating subscriber and a terminating subscriber for which a charge is to be imposed, and

providing, in said message record, an indication which has a particular value when the particular interexchange carrier over which said call was carried is the PIC for said terminating subscriber.

* * *

18. A method for use in a telecommunications system in which each subscriber has a primary interexchange carrier (PIC) over which interexchange calls initiated by that subscriber are carried, said method comprising the steps of:

generating a message record for each interexchange call between an originating subscriber and a terminating subscriber for which a charge is to be imposed, and

providing, in said message record, an indication which has a particular value when the particular interexchange carrier over which said call was carried is the PIC for said terminating subscriber and is also the PIC for said originating subscriber.

* * *

40. A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber,

accessing a database in which are stored the telephone numbers of substantially all of the subscribers associated with the specific one of said interexchange carriers over which said call was routed to make determination as to whether or not the interexchange carrier associated with said terminating subscriber is said specific interexchange carrier over whose facilities said call was routed,

establishing an indicator for said call at a particular value when said determination is that the interexchange carrier associated with said terminating subscriber is said specific interexchange carrier over whose facilities said call was routed, and

providing an output which is a function of both information in said message record and of said indicator.

('184 patent, col. 7, lns. 2-16; col. 8, lns. 15-27, 57-68; col. 9, lns. 1-2; col. 12, lns. 1-24)

Also at issue are a number of dependent claims. Claims 4 and 6 depend from claim 1. They provide as follows:

4. The invention of claim 1 wherein said including step comprises the step of accessing a database in which are stored the telephone numbers of substantially all of the subscribers associated with said predetermined one of said interexchange carriers.

* * *

6. The invention of claim 1 comprising the further step of billing at least ones of said calls as a function of the value of the PIC indicator in the message record generated for each one of those calls.

('184 patent, col. 7, lns. 26-30, 34-37)

Claims 13 and 15 depend, at least in part, on claim 12. They read as follows:

13. The invention of claim 12 wherein said providing step includes the step of accessing a database in which are stored the telephone numbers of substantially all of the subscribers associated with said particular interexchange carrier.

* * *

15. The invention of claim 13 comprising the further step of billing at least ones of said calls as a function of the value of said indication in the message record for each one of those calls.

('184 patent, col. 8, lns. 28-32, 36-39) Claims 19 and 21, which depend at least in part from claim 18, read as do claims 13 and 15 respectively.

IV. CLAIM CONSTRUCTION

A. The Legal Standard

Before addressing the arguments raised in the motions for summary judgment, the court must first construe the disputed claim language. It is the court's "power and obligation to construe as a matter of law the meaning of language used in the patent claim." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995), *aff'd,* 517 U.S. 370 (1996). The principles of claim construction are well established. The exercise begins with the claim language, which defines the scope of the claim. *See* York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed.Cir.1996). In analyzing claim language, the court must employ "normal rules of syntax," Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1553 (Fed.Cir.1997) for "[a] claim must be read in accordance with the precepts of English grammar." In re Hyatt, 708 F.2d 712, 714 (Fed.Cir.1983). The court also must ascribe to any technical term used in a claim "the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning." Hoechst Celanese Corp. v. BP Chems., Ltd., 78 F.3d 1575, 1578 (Fed.Cir.1996).

In order to give context to the claim language, the court also must review the specification. The Federal Circuit has explained that

[t]he specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication .... As we have repeatedly stated, "claims must be read in view of the specification, of which they are a part." ... The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of the disputed term.

Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

The last source of intrinsic evidence relevant to claim construction is the prosecution history of the patent where it is in evidence. The prosecution history contains the complete record of all the proceedings before the Patent and Trademark Office, "including any express representations made by the applicant regarding the scope of the claims." Id. at 1583. The prosecution history, therefore, "is often of critical significance in determining the meaning of the claims." *Id*. Extrinsic evidence of claim meaning, on the other hand, is improper in most instances. *See id*. Extrinsic evidence includes expert testimony.

B. The Federal Circuit's Opinion

As a threshold matter, AT & T argues that the Federal Circuit in determining that the claims of the '184 patent define valid subject matter under 35 U.S.C. s. 101 necessarily construed the claims. (D.I. 289 at 1-2) Specifically, AT & T refers to the Federal Circuit's description of the claimed invention, which provides that the invention

is designed to operate in a telecommunications system with multiple long-distance service providers. The system contains local exchange carriers ("LECs") and long-distance service (interexchange) carriers ("IXCs"). The LECs provide local telephone service and access to IXCs. Each customer has an LEC for local service and selects an IXC, such as AT & T or Excel, to be its primary long-distance service (interexchange) carrier or PIC. IXCs may own their own facilities, as does AT & T. Others, like Excel, called "resellers" or "resale carriers," contract with facility-owners to route their subscribers' calls through the facilityowners' switches and transmission lines. Some IXCs, including MCI and U.S. Sprint, have a mix of their own lines and leased lines.

The system thus involves a three-step process when a caller makes a direct-dialed (1+) long-distance telephone call: (1) after the call is transmitted over the LEC's network to a switch, and the LEC identifies the caller's PIC, the LEC automatically routes the call to the facilities used by the caller's PIC; (2) the PIC's facilities carry the call to the LEC serving the call recipient; and (3) the call recipient's LEC delivers the call over its local network to the recipient's telephone.

When a caller makes a direct-dialed long-distance telephone call, a switch (which may be a switch in the interexchange network) monitors and records data related to the call, generating an "automatic message account" ("AMA") message record. This contemporaneous message record contains fields of information such as the originating and terminating telephone numbers, and the length of time of the call. These message records are then transmitted from the switch to a message accumulation system for processing and billing.

Because the message records are stored in electronic format, they can be transmitted from one computer system to another and reformatted to ease processing of the information. Thus the carrier's AMA message subsequently is translated into the industry-standard "exchange message interface," forwarded to a rating system, and ultimately forwarded to a billing system in which the data resides until processed to generate, typically, "hard copy" bills which are mailed to subscribers.

B.

The invention of the '184 patent calls for the addition of a data field into a standard message record to indicate whether a call involves a particular PIC (the "PIC indicator"). This PIC indicator can exist in several forms, such as a code which identifies the call recipient's PIC, a flag which shows that the

recipient's PIC is or is not a particular IXC, or a flag that identifies the recipient's and the caller's PICs as the same IXC. The PIC indicator therefore enables IXCs to provide differential billing for calls on the basis of the identified PIC.
AT & T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1353-54 (Fed.Cir.1999).
As AT & T correctly notes, "it is well-established that the first step in any validity analysis is to construe the claims of the invention to determine the subject matter for which patent protection is sought." Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc., 183 F.3d 1347, 1353 (Fed.Cir.1999).FN5 In the case at bar, however, the Federal Circuit did not undertake such a construction. On appeal, the Federal Circuit addressed the narrow issue of "whether the asserted claims of the '184 patent are invalid for failure to claim statutory subject matter under 35 U.S.C. s. 101." *Id*. at 1355. In light of its review of the statute and relevant case law, the Federal Circuit found it "clear from the written description of the '184 patent" that AT & T is claiming a process that "applies Boolean algebra to [subscribers' and call recipients' PICs] to determine the value of the PIC indicator, and applies that value through switching and recording mechanisms to create a signal useful for billing purposes." Id. at 1358 (emphasis added). Applying the analysis developed in State Street & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368, 1373 (Fed Cir.1998), the Federal Circuit concluded that "[b]ecause the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of Section 101." *Id*. at 1358, 1361.

FN5. The court notes that this statement was made in the context of an obviousness analysis under s. 103 not a subject-matter analysis under s. 101. *See* Smiths Indus., 183 F.3d at 1353 ("The claims, properly interpreted, define the scope of the invention and allow the trial court to determine whether the claimed invention would have been obvious in light of the prior art.").

In applying the *State Street* test, the Federal Circuit was not required to determine, nor did it, the scope and meaning of the claims at issue. The Federal Circuit's description of the claimed invention does not constitute claim construction and, thus, this court is not bound by any statements or depictions made therein. In so deciding, the court notes the complete lack of any analysis concerning claim construction principles as well as the claims themselves in the Federal Circuit's decision. Accordingly, the court concludes that it is charged with undertaking the task of interpreting the claims at issue in the case at bar.

C. Analysis

1. "for use in a telecommunications system"

The preambles of each of the independent claims at issue state that the invention disclosed in the '184 patent is directed to a method "for use in a telecommunications system." Although the preambles do not provide a specific definition of the term "telecommunications system," they do describe a system wherein

interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber ....

('184 patent, col. 7, lns. 2-6; col. 12, lns. 1-5) and

each subscriber has a primary interexchange carrier (PIC) over which interexchange calls initiated by that subscriber are carried ....

('184 patent, col. 8, lns. 15-18, 57-60) FN6 Focusing on the phrases "routed over the facilities" and "over which ... calls ... are carried," Excel argues that the term "telecommunications system" is limited to the "call-carrying facilities that comprise the United States telecommunications system ." (D.I. 300 at 59) In support of their argument, Excel references the language of independent claim 24, which discloses a method

FN6. "[A] claim preamble has the import that the claim as a whole suggests for it." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir.1995). Generally, a claim preamble, when read in the context of the entire claim, recites claim limitations only if "the claim cannot be read independently of the preamble and the preamble must be read to give meaning to the claim or is essential to point out the invention." Marston v. J.C. Penney Co., 353 F.2d 976, 986 (4th Cir.1965) (citing Kropa v. Robie, 187 F.2d 150 (C.C.P.A.1951)). Thus, "if a claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed.Cir.1999) (quoting Kropa, 187 F.2d at 152). In the case at bar, the preamble statement "for use in a telecommunications system" does not inform the construction of the remainder of the claims. It is merely a statement describing the claimed invention's intended field of use. Such a statement "cannot be said to constitute or explain a claim limitation." Therefore, the statement is not itself a limitation.

for use in a telecommunications system comprised of local exchange carriers and interexchange carriers, said system being arranged to establish telephone connections between subscribers of said local exchange carriers in response to requests for same ....
('184 patent, col. 9, lns. 32-36) According to Excel, use of the phrase "telephone connections" limits the LECs and IXCs that comprise the "telecommunications system" to their "call-carrying aspects." Thus, Excel argues, omitted from the term's purview are any ancillary functions performed by the LECs and IXCs, such as collections and sales, which, although necessary for providing long-distance telephone services, do not involve the use of "call-carrying facilities." (D.I. 300 at 60)
The term "telecommunications system" is neither defined nor used in the specification. Instead, the specification refers to "telephone networks" and "a network of interexchange carrier switches." ('184 patent, col. 1, lns. 7; col. 3, lns. 3-4) For example, the operation of a telephone network with respect to long-distance calls is summarized in the specification as follows:

When a long-distance call is initiated by the subscriber, the call is routed through the network of the originating subscriber's LEC, over the network of the PIC and, ultimately, through the network of the LEC which has as one of its subscribers the called party.

('184 patent, col. 1, lns. 41-45 (emphasis added); *see also* '184 patent col. 1, ln. 68-col. 2, ln. 3; col. 4, lns. 46-53). Excel argues that, given the language and figures of the specification, the "telecommunications system" referred to in the preambles of the independent claims requires the network of a facilities-based carrier.

AT & T, on the other hand, contends that the term "telecommunications system" is not so limited, arguing instead that it refers to the equal access telecommunications system, which consists of all the long-distance service carriers operating in the United States. (D.I. 300 at 16; D.I. 213 at 13) Specifically, AT & T identifies the following language in the specification that speaks to an IXC's use, not ownership, of facilities for the routing of long-distance calls:

[T]he invention more particularly relates to the generation of message records for long-distance-or so-called interexchange-calls, which involve the use of the facilities of a long-distance, or interexchange, carrier, also referred to as an IXC.

('184 patent, col.1, lns. 30-34) (emphasis added). AT & T asserts that there is no support in the patent for a construction of the term "telecommunications system" that would require an IXC to have an ownership interest in the facilities used to carry or route the interexchange calls of its customers.

It is axiomatic that IXCs use facilities such as switches, computers, and transmission lines to provide long-distance service, i.e., to route calls. Nowhere in the '184 patent, however, is there any explicit mention that an IXC must own, as compared to use, the facilities over which the interexchange calls of its customers are carried or routed in order to practice the claimed invention. Rather, the claim language itself and the specification contemplate a "telecommunications system" comprised not only of the facilities such as switches and transmission lines that physically establish the call connections, but also the ancillary facilities such as billing and collections that allow such a system to operate. Accordingly, the court concludes that the term "telecommunications system" is not limited to the network of a facilities-based IXC.FN7

FN7. Consistent with this construction, the court concludes that the practice of the claimed invention is not limited to those IXCs which own the facilities used to transmit their subscriber's calls. There is no basis for reading an ownership limitation into the claims. Rather, the patent is directed to the generation of message records for long-distance calls "which involve the use[, not the ownership,] of the facilities" of an IXC. ('184 patent, col. 1, lns. 30-34) (emphasis added). Accordingly, the court concludes that (1) the IXC to which a subscriber may be PIC'd need not be a facilities-based carrier but may be any company that provides long-distance telephone service and (2) the "PIC indicator" and "indication which has a particular value" claimed by the '184 patent is not limited to an indicator of the facilities-based IXC over whose network the subscriber's calls are carried.

2. "interexchange calls" and "automatically routed"

The independent claims at issue are directed to a method involving "interexchange calls initiated by ... [a] subscriber." ('184 patent, col. 1, lns. 3-4; col. 2, lns. 1-18, 59-60; col. 12, lns. 2-3) The preambles of claims 1 and 40 describe these "interexchange calls" as being "automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber." ('184 patent, col. 1, lns. 4-6; col.12, lns. 3-5) The preambles of claims 12 and 18 state that "each subscriber has a primary interexchange carrier (PIC) over which interexchange calls initiated by that subscriber are carried." ('184 patent, col. 2, lns. 16-18, 58-60) AT & T contends that one skilled in the art at the time of the invention reading the claim language would understand that the claims are directed solely to "1+" long distance calls ("1+ calls"). Excel argues, on the other hand, that the claimed invention applies to interexchange calls without limitation, citing the language of the specification. ('184patent, col. 1, lns. 30-35; see also '184 patent, col. 1, lns. 6-8; col. 6, lns. 50-63; col. 3, lns. 62-66; col. 4, lns. 2-5)

As an initial matter, the court notes that the term "1+ calls" appears nowhere in the claim language or specification. AT & T, and Excel, use the term to refer to those direct-dial calls made by dialing 1 followed by the area code and the seven digit number associated with the terminating subscriber. AT & T distinguishes these 1+ calls from other types of long-distance calls, specifically 0+ calls, dial-around calls, and 1-800 calls. The parties agree that unlike 1+ calls, which are routed over the PIC of the originating

subscriber, 1-800 calls are carried by the IXC with which the terminating subscriber has arranged 1-800 service. Likewise, dial-around calls are not carried by the PIC associated with the originating subscriber. Instead, these calls are carried by the IXC selected by the originating subscribing at the time the call is made, such selection being made by entry of a specific number or access code, such as 10-10-321, prior to entry of the called telephone number. In contrast, 0+ calls, which include credit- or calling-card calls and collect or operator-assisted calls, are routed over the IXC PIC'd to the telephone line being used by the originating subscriber although that line is not billed for the call. Besides entry of 0 plus the called subscriber's area code and number, a subscriber placing a 0+ call must perform some other act, such as entry of a credit-card number or provision of routing information to an operator, in order for the call to go through.

AT & T argues that the concept of a PIC has relevance only in the context of 1+ calls. (D.I. 191 at 8, 33) Consistent with this, AT & T contends that interexchange calls carried over the initiating subscriber's PIC are, by definition, 1+ calls. (D.I. 191 at 7-8, 33-34) AT & T supports this assertion by reference to the definition of PIC in *Newton's Telecom Dictionary* as well as Excel's use of the term in various information guides and training manuals. (D.I. 191, Ex. C at 478; Ex. G at EX 0026214; D.I. 228, Ex. 4; D.I. 191, Ex. G at EX0026235) These definitions associate PICs with calls that require dialing 1 plus a ten-digit number and routing of the call to a pre-selected IXC.

The language of the asserted claims discloses an invention directed to those interexchange calls that are "automatically routed over the facilities of" or "carried" by the PIC of the originating subscriber. In describing the field of the claimed invention, the specification states with regard to PICs that

[e]ach subscriber to local telephone service from a local exchange carrier, or LEC, such as New Jersey Bell, has an associated "primary interexchange carrier," or PIC, that was selected by or for the local subscriber. The local subscriber is said to be "PIC'd" to the associated IXC. When a long-distance call is initiated by the subscriber, the call is routed through the network of the originating subscriber's LEC, over the network of the PIC and, ultimately, through the network of the LEC which has as one its subscribers the called party.

('184 patent, col. 1, lns. 35-45) Consistent with the above constructions, the court concludes that the field of invention is limited to 1+ calls and shall so construe the claims.FN8

FN8. In this respect, the court further concludes that the preamble statements "automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber" and "primary interexchange carrier (PIC) over which interexchange calls initiated by that subscriber are carried" are "necessary to give life, meaning, and vitality" to the claim. These statements are "meshed with the ensuing language of the claim" because they teach the specific type of interexchange call that is involved in the method disclosed in the body of the claim. Id. Consequently, the claims can be understood only in the context of these preamble statements. Therefore, the statements constitute limitations on the claims.

3. "subscriber"

The '184 patent claims a method directed to the addition of a PIC indicator whose value is a function of whether a terminating "subscriber," or both the terminating and originating "subscribers," have as an associated FN9 PIC a particular IXC. Excel contends in their claim construction briefs that the "subscriber" identified in the '184 patent is "the originating or terminating telephone line as identified by the originating

and terminating telephone numbers." (D.I. 190 at 31) Accordingly, Excel avers that the PIC of the terminating subscriber is "the carrier providing 1+ long distance service to the terminating subscriber for the line to which the call is made." (D.I. 300 at 33) AT & T, on the other hand, argues that "subscriber" refers to a particular individual, not a telephone line.

FN9. The parties agree that the term "associated with" means "PIC'd to." Thus, a carrier "associated with" a subscriber means the PIC of that subscriber.

Neither the claims nor the specification provide a specific definition of the term "subscriber." However, for the most part, the use of the term "subscriber" in the '184 patent is consistent with AT & T's proffered interpretation, drawing a distinction between "subscribers" and "telephone numbers." ('184 patent, col. 1, lns. 35-39, lns. 55-57; col. 2, lns. 17-24, lns. 51-53, lns. 56-61; col. 3, lns. 13-19, lns. 59-65) Commonly understood, "subscriber" means "an individual having commercial telephone equipment installed on his premises." *Webster's* at 2278. This definition is consistent with the meaning of the term "subscriber" in the telecommunications industry: "a person or company who has telephone service provided by a phone company." (D.I. 213, Ex. N at 618) These usages likewise are consistent with AT & T's proffered construction.

The construction proffered by Excel, on the other hand, would require the court to forego the ordinary meaning of "subscriber." Only two situations provide sufficient justification for defining a claim term in a manner other than its ordinary and accustomed meaning. *See* Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed.Cir.1999). The first of those situations occurs when an inventor has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. *See id*. This is not the case here. The other situation occurs when the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used. *See id*.

Excel urges that the design requirements of the claimed invention mandate that the "subscriber" be a particular telephone line, identified by the telephone number called or used to place the call, rather than an individual. Such an argument ignores the very purpose of the claimed invention. The '184 patent relates to a method for "recording messages used to bill charges for interexchange calls." ('184 patent, col. 1, lns. 7-8) As such, the claimed invention is directed to the process of billing for interexchange calls. Subscribers are billed, not telephone lines. Thus, it is irrelevant whether the individual using a particular telephone to place a 1+ long-distance call is or is not the subscriber who selected the PIC for that telephone line. It is still the "subscriber" associated with that telephone line who will be billed for the call. Moreover, subscribers, not telephone lines, select the IXC over which the 1+ calls made using a particular telephone will be carried or routed.

That the claim language and specification require there to be one and only one PIC per phone call, i.e., that there be but a single PIC for said "terminating subscriber" and a single PIC for said "originating subscriber," is not defeated by equating the term "subscriber" with an individual rather than a telephone line. As Excel notes, the claimed invention operates in the framework of a specific call. With respect to that call, the originating "subscriber" will have associated with him/her one and only one PIC as will the terminating "subscriber." That those subscribers might be PIC'd to other IXCs with regard to other telephone lines is immaterial in the context of that specific phone call. Thus, use of the term "subscriber" as meaning a particular individual rather than a particular telephone line does not "so deprive the claim[s] of clarity" that

the scope of the claims cannot be ascertained "from the language used."

The court, therefore, shall construe the term "subscriber" to mean a particular individual, not a telephone line. Consistent with this interpretation and the preceding constructions, "the PIC for said terminating subscriber" shall be construed to mean the IXC selected by the subscriber to provide (i.e., handle and/or arrange for handling) 1+ long-distance service to the telephone number called.

4. "is"

The claims of the '184 patent require determination of whether the terminating subscriber, or in the case of claim 18 both the originating and the terminating subscriber, "is" PIC'd to a particular IXC. Excel asserts that the term "is," as it is used in the asserted claims, means "at the time of the call referenced in the claim." (D.I. 300 at 50) AT & T does not proffer an alternative construction.

In common parlance, "is" is used to indicate "that which is factual, empirical, actually the case or spatiotemporal." *Webster's* at 1197. Excel's construction, therefore, is consistent with the ordinary meaning of the term given the context in which it is used. Moreover, Excel's construction is consistent with the language of the independent claims which not only links the PIC indicator to a specific call but also anticipates a single PIC for the terminating subscriber. ('184 patent, col. 7, lns. 13-16; col. 8, lns. 25-27; col. 8, ln. 67-col. 9, ln. 1; col.12, lns. 14-17)

The court, therefore, shall construe "is" to mean "at the time of the call referenced in the claim." Consistent with this construction, "the PIC for said terminating subscriber" shall be construed to mean the IXC selected by the subscriber to provide 1+ long-distance service to the telephone number called at the time of the call referenced in the claim.

5. "PIC indicator" or "indication which has a particular value"

Claim 1 of the'184 patent teaches a method wherein included in a message record is a "PIC indicator" having a value which "is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers." ('184 patent, col. 7, lns. 11-16) The specification provides that the "PIC indicator" can take various forms, such as a code that identifies the terminating subscriber's PIC or a flag "which indicates, at a minimum, whether or not the terminating subscriber's PIC is" a particular IXC. ('184 patent, col. 4, lns. 13-19) In the preferred embodiment, the value of the "PIC indicator" indicates "whether or not both the terminating and originating subscriber's PICs" are a particular IXC. ('184 patent, col. 4, lns. 21-22) Thus,

if both of the subscribers are PIC'd to IXC 30, then PIC indicator 3419 is set. Otherwise it is not set. Certainly, then, as noted above, the value of PIC indicator 3419 does indicate whether or not the PIC of the terminating subscriber is or is not IXC 30. Specifically, if PIC indicator 3419 is set, then IXC 30 is the terminating subscriber's PIC. If it is not set, then IXC 30 is not the terminating subscriber's PIC.

('184 patent, col. 4, lns. 31-39)

The other asserted independent claims do not disclose inclusion of a "PIC indicator" in a message record. Instead, claim 12 requires provision in a message record of "an indication which has a particular value when the particular interexchange carrier over which said call was carried is the PIC for said terminating subscriber." ('184 patent, col. 8, lns. 24-27) Independent claim 18 also requires provision of "an indication

which has a particular value" in a message record but the value of the indication disclosed therein is a function of whether the PIC over which the call was carried is the PIC for both the terminating and originating subscriber. ('184 patent, col. 8, ln. 66-col. 9, ln. 2) Similarly, claim 40 requires "establishing an indicator at a particular value" when the PIC of the terminating subscriber is "said specific interexchange carrier over whose facilities said call was routed." ('184 patent, col. 12, lns. 18-22) Thus, all of the asserted claims require the inclusion in a message of an indicator having a value that reflects, at a minimum, whether or not a particular IXC is the PIC of the particular terminating subscriber. According to the specification, the value of the indicator, "[a]dvantageously, ... can be used in subsequent billing operations" to allow for, "[f]or example, different billing treatments." ('184 patent, col. 4, lns. 44-46)

The court, therefore, shall construe the terms "PIC indicator" and "indication which has a particular value" as requiring a design that indicates, at a minimum, whether a specific IXC is the PIC of the terminating subscriber at the time the call is made. As noted previously, the "PIC indicator" and the "indication which has a particular value" claimed by the '184 patent are not limited to an indicator of the facilities-based IXC over whose network the subscriber's calls are carried or routed.

6. "including[, providing, or establishing] FN10 **in said message record" and "billing"**

FN10. The claims, although essentially the same, use different wording with regard to this step.

The claims at issue disclose a two-step method comprising the steps of (1) "generating a message record for an interexchange call between an originating subscriber and a terminating subscriber" and of (2) including "in said message record" a PIC indicator. To this end independent claim 1, for example, teaches

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers.

('184 patent, col. 7, lns. 8-16) Excel contends that these steps occur in the network of a facilities-based IXC FN11 prior to the billing process. AT & T seeks a construction that defines the billing process as the last step in the overall process disclosed in the patent, wherein the generation and mailing of "hard-copy" bills to subscribers is performed. Although the parties dispute the scope of the term "billing," their proposed constructions are not mutually exclusive.

FN11. Excel argues that the process described in the patent specification for inclusion of a PIC indicator in the message record is performed "entirely within, or adjunct to, the network of a facilities-based carrier." Excel's argument is moot given the court's previous constructions which do not limit the practice of the invention to facilities-based carriers. *See supra,* Part V.B.1. Moreover, the court notes that the claims teach "generating a message record," generally, and that while the initial message record for any given interexchange call is generated by a switch, all other message records are generated by other pieces of equipment. The preferred embodiment, in fact, discloses a system wherein the PIC indicator is included in an EMI message record that is generated by a formatting system using information from the AMA message record.

As an initial matter, the court notes that the claim language itself indicates that the generation of "said message record" occurs prior to its transmission to a billing system. Claims 5, 14, and 20, which depend from claims 1, 12, and 18 respectively, teach "the further step of transmitting each said message record to a billing system." ('184 patent, col. 7, lns. 31-33; col. 8, lns. 33-35; col. 9, lns. 8-10) (emphasis added). Likewise, claims 6, 15, and 21, which also depend from claims 1, 12, and 18 respectively, teach

the further step of billing at least ones [sic] of said calls as a function of the value of the PIC indicator in the message record generated for each one of those calls.

('184 patent, col. 7, lns. 34-37; col. 8, lns. 36-39; col. 9, lns. 11-14) (emphasis added). Claim 41 which depends from claim 40 also teaches the additional steps of rating and billing. ('184 patent, col. 12, lns. 25-32) Although dependent claims cannot limit the independent claims from which they depend, *see* Karlin Tech. Inc. v.. Surgical Dynamics, Inc., 50 U.S.P.Q.2d 1465, 1468 (Fed.Cir.1999) (stating "that limitations stated in dependent claims are not to be read into the independent claim from which they depend"), they are to be considered in interpreting the scope of the claim from which they depend, *see* Laitram Corp. v. NEC Corp., 62 F.3d 1388, 1392 (Fed.Cir.1995) (stating that "[a]lthough each claim is an independent invention, dependent claims can aid in interpreting the scope of claims from which they depend"); *see also* Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995) (noting that the scope of an independent claim incorporates the embodiments recited in dependent claims). In the '184 patent, the dependent claims anticipate the transmission of the message record to a billing system after the addition of a PIC indicator.

The '184 patent's specification provides further support for reading the claims to require the generation of the message record and inclusion of the PIC indicator therein prior to "billing." According to the specification, "in a typical system" EMI records bearing an indication of the applicable toll charges "are forwarded to a billing system in which they reside until processed to generate, typically, 'hard copy' bills which are mailed to subscribers." ('184 patent, col. 1, lns. 26-29) In the preferred embodiment,

[a]t the completion of the call, IXC originating switch 301 generates the ... AMA record for the call (connection). This switch is periodically polled, along with other like switches, by an associated one of message accumulator systems 311 ... 312....

On a periodic basis ... each message accumulator sends its accumulated AMA records to a corresponding one of EMI formatting systems 321 ... 322.... The latter translates the AMA records into the aforementioned industry-standard EMI message record format. The EMI records are thereupon periodically forwarded ... to a respective one of rating systems 331 .. 332....

Among the functions of rating systems 331 ... 332 is to "rate" each call, FN12 by which is meant the computation of the standard toll charges or rated charge, applicable to each call, and to add an indication of same to the EMI record....

FN12. In order to generate the applicable PIC indicator, the rating system "needs to be able to access a comprehensive database in which all IXC 30 subscriber telephone numbers are stored." ('184 patent, col. 5, lns. 5-37)

* * *

... Additional known functionalities may also be carried out by the rating system. Of interest here, however, is the generation of PIC indicator 3419.... After perhaps performing various other functions not relevant here, rating system 331 transfers, or transmits, the now rated and PIC-evaluated EMI message to a billing system for subsequent processing.
('184 patent, col. 3, lns. 26-48; col. 5, lns. 42-45, 57-61) The specification states that "the PIC indicator is advantageously added to the message record in the same system that performs the call rating-and at a time substantially contemporaneous with the rating itself." ('184 patent, col. 2, lns. 19-22) The specification goes on to state with respect to the preferred embodiment that "[a]dvantageously, the value of PIC indicator 3419 can be used in subsequent billing operations." ('184 patent, col. 4, lns. 44-45)
Although the figures and language of the specification support AT & T's assertion that "billing" is the last step in the overall process, they do not support its contention that "billing" encompasses only the generation and mailing of "hard-copy" bills. The specification states that "[i]n a typical system" EMI records are forwarded to a billing system wherein they are "processed to generate, typically 'hard copy' bills which are mailed to subscribers." ('184 patent, col. 1, lns. 14, 27-29) (emphasis added). The typical system is not the only system. This is particularly true in light of other statements in the specification that indicate that the EMI records are transmitted to a billing system for "subsequent processing" ('184 patent, col. 5, lns. 60-61) or "subsequent billing operations." ('184 patent, col. 4, ln. 45; col. 5, lns. 65-67; col.6, lns. 12-13, 16-21, lns. 30-35) Thus, although the specification and the claim language distinguish "billing" from those steps which precede it, i.e., the generation of the message record, the gathering of information from the applicable databases, the generation of the PIC indicator, the rating of the call, and the formation of the rated message record, they do not limit it to the generation and mailing of hard-copy bills.

The court, therefore, shall construe the term "billing" to be the last step in the method disclosed in the '184 patent but shall not limit the operations performed therein to the generation and mailing of hard-copy bills. Consistent with this construction, the court shall construe the asserted independent claims as requiring the generation of the message record and inclusion of the PIC indicator therein to occur prior to the transmission of the message record to a billing system.

V. STANDARD OF REVIEW

A court shall grant summary judgment only if "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed.R.Civ.P. 56(c). The moving party bears the burden of proving that no genuine issue of material fact exists. *See* Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586 n. 10 (1986). "Facts that could alter the outcome are 'material,' and disputes are 'genuine' if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct." Horowitz v. Federal Kemper Life Assurance Co., 57 F.3d 300, 302 n. 1 (3d Cir.1995) (internal citations omitted). If the moving party has demonstrated an absence of material fact, the nonmoving party then "must come forward with 'specific facts showing that there is a genuine issue for trial." ' Matsushita, 475 U.S. at 587 (quoting Fed.R.Civ.P. 56(e)). The court will "view the underlying facts and all reasonable inferences therefrom in the light most favorable to the party opposing the motion." Pennsylvania Coal Ass'n v. Babbitt, 63 F.3d 231, 236 (3d Cir.1995). The mere existence of some evidence in support of the nonmoving party, however, will not be sufficient for denial of a motion for summary judgment; there must be enough evidence to enable a jury reasonably to find for the nonmoving party on that issue. *See* Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 249 (1986). If the nonmoving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, the moving party is entitled to judgment as a matter of law. *See* Celotex

Corp. v. Catrett, 477 U.S. 317, 322 (1986).

VI. DISCUSSION

A. Infringement FN13

FN13. Notwithstanding the fact that AT & T's motion for partial summary that Excel infringes the '184 patent addresses only claims 12, 13, 15, 18, 19, and 21, the court will address whether Excel infringes all of the asserted claims.

AT & T contends that Excel's 1993 rating and billing system (the "1993 Excel system") literally infringes independent claims 1, 12, 18, and 40 and dependent claims 4, 6, 13, 15, 19, and 21 of the '184 patent. Section 271(a) of the Patent Act 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 ... during the term of the patent therefor, infringes the patent.

35 U.S.C. s. 271(a). The Federal Circuit has set forth a two-step analysis for determining whether there is infringement:

First, the claims must be correctly construed to determine the scope of the claims. Second, the claims must be compared to the accused device.

Kahn v. General Motors Corp., 135 F.3d 1472, 1476 (Fed.Cir.1998). "To establish literal infringement, a plaintiff must demonstrate that every limitation in the claim is literally met by the accused device." *Id*. In other words, literal infringement exists when the claim, as construed by the court, reads on the accused device exactly. *See* Engle Indus., Inc. v. Lockformer Co., 96 F.3d 1398, 1405 (Fed.Cir.1996). Infringement may not be avoided simply by adding features or components not required by the claims. *See* Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 865 (Fed.Cir.1985), *overruled on other grounds,* Nobelpharma AB v. Implant Innovations, Inc., 141 F.3d 1059 (Fed.Cir.1998). Plaintiff has the burden of demonstrating by a preponderance of the evidence that "every limitation of the claim is literally met by the accused device." Kahn, 135 F.3d at 1476.

As previously noted, Excel is a switchless reseller.FN14 When a subscriber PIC'd FN15 to Excel places a 1+ long-distance call, that subscriber's LEC automatically routes the call over the network of the carrier with which Excel has contracted to carry its customers' calls.FN16 (D.I. 198 at A931, A933, A947-51) After the termination of the call, an AMA message record containing the basic details of the call is generated in a switch in the contracted carrier's network. (D.I. 198 at A947-51) The accumulated AMA message records are transmitted to the rating system of the IXC, where they are rated but not EMI formatted. Subsequently, the message records are forwarded to Excel, where they are referred to as call detail records ("CDRs").

FN14. For the most part, the following recitation is drawn from AT & T's depiction of Excel's operation (D.I. 191 at 16-23; D.I. 195 at 18-27; D.I. 213 at 15-18), as Excel's description of its own procedures (D.I. 189 at 6-11) is written with little clarity.

FN15. The court notes with interest that throughout its claim construction and noninfringement briefing,

Excel has maintained that it cannot be a PIC because it does not own its own facilities. In describing its own operations, however, Excel refers to itself as the "customer's PIC." (D.I. 189 at 6 n. 20) Apparently, despite its inability "to determine the PIC of the originating or terminating ANI," Excel is able "in the vast majority of cases [to] ... electronically notif[y] both the carrier and the LEC that the [automatic number identification] should now have Excel as its PIC." (D.I. 189 at 6 n. 20, 7)

FN16. The LEC does so by reviewing its PIC database, in which each of the LEC's subscribers are associated with a three-digit carrier identification code ("CIC") that identifies the subscriber's PIC. When the LEC identifies the initiating subscriber as being PIC'd to Excel, it routes the call over the network of the carrier with which Excel has contracted to carry its customers' calls. (D.I. 198 at A947-51) The CIC is included in the AMA message record so the LEC can identify which carrier to bill for the access charges associated with the call. (D.I. 198 at A947-51)

Excel not only reformats the CDRs it receives FN17 but also deletes any rate information contained in the records. Once the CDR is reformatted, it is transmitted to the "collector," which executes the "phone inquiry step." The collector, a series of computer programs, reads the reformatted CDR to determine the originating and terminating telephone numbers and then searches for the customer identification code associated with those numbers in Excel's Phone Data Base flat extract file ("PDB"), which contains substantially all of the telephone numbers of Excel subscribers. If the originating subscriber's telephone number is found in the PDB, the collector executes the "customer inquiry step," during which the customer identification code corresponding to the originating telephone number is used to search Excel's Customer Data Base flat extract file ("CDB") for the status of the originating subscriber. FN18 Likewise, if the terminating subscriber's telephone number is found in the PDB, the collector conducts another customer inquiry, searching the CDB for the terminating subscriber's status.FN19 The collector also determines the type of service or product, if any, that the parties have purchased from Excel.

FN17. The message records Excel receives are not in a uniform format, varying from IXC to IXC.

FN18. In this particular part of its argument, Excel contends that the existence of a customer identification code for a particular subscriber "does not mean that Excel actually at that time is the PIC of the [subscriber]; it means that Excel is or has been the PIC for a [subscriber] or that at some time Excel received a Letter of Authorization ... for that [subscriber]." (D.I. 189 at 9-10) Given the court's understanding that CDRs are forwarded to Excel only when Excel is the originating subscriber's PIC, one would think that the originating subscriber's telephone number would always be found in the PDB and the CDB.

FN19. A subscriber can have one of five statuses: active (ACTV), pending (PEND), canceled (CXX), non-serviceable area (9898), or blank. The codes reflect the status of the customer's account with Excel at the time the call was made. A code of ACTV indicates that the subscriber is PIC'd to Excel. (D.I. 191, Ex. H at 59, 151-52; Ex. N at EX4228) A code of PEND indicates that the subscriber has chosen Excel as its PIC but that the LEC has not yet confirmed that selection. If the status code is CXX, it means that the subscriber is no longer associated with Excel. A code of 9898 indicates that the subscriber's telephone number is in an area in which a customer cannot be PIC'd to Excel. And a blank status code indicates that a subscriber has never been associated with Excel.

The collector processes the received information and uses it to generate a new message record known as the "collected record," which contains the status codes of both the initiating and terminating subscribers as well as reformatted initial CDR information. The collected record is sent to the "rater," which determines the charge to be applied to the call based on the information contained within the message record. Of particular import to the case at bar, the rater looks at the status codes in order to determine whether the parties are entitled to a discount for that particular call.FN20 Once the rate is calculated, a rated record is generated. This record is subsequently reformatted and transmitted to either a LEC or another part of Excel's system for direct billing to the subscriber.

FN20. While Excel's program at issue was designed to determine whether the originating and terminating subscribers are active Excel customers, in operation the rater only checks for the presence of a canceled code. As a result of this design, a customer receives a discount as long as the status code is not CXX. Thus, Excel concedes that it might "be giving discounts" when such are not warranted, something the use of a PIC indicator as disclosed in the '184 patent would prevent.

Review of the evidence at bar reveals that plaintiff has demonstrated by a preponderance of the evidence that "every limitation of the ['the 184 patent] is literally met by the accused [method]." The independent claims at issue disclose a method comprising two steps: (1) generating a message record for each FN21 interexchange call and (2) including in said message record a PIC indicator or "indication" having a value that is, at a minimum, a function of whether the IXC is the PIC of the terminating subscriber or both the terminating and originating subscriber. The 1993 Excel system generates a message record (the collected record) for every interexchange call it carries for which a charge is to be imposed and includes within that record an indicator (status code) having a value (e.g., ACTV) that denotes whether the terminating subscriber and the originating subscriber are at the time of the call PIC'd to Excel, a predetermined carrier.FN22 Moreover, in the 1993 Excel system the value of the indicator is determined by accessing a data base (the PDB) containing substantially all of the telephone numbers of Excel's subscribers as required in dependent claims 4, 13, 19 and independent claim 40. The value of the indicator (status code) is used in subsequent billing treatments to determine whether a discount is warranted under the subscriber's plan as taught in dependent claims 6, 15, and 21. Accordingly, the court concludes that the 1993 Excel system literally infringes the asserted claims of the '184 patent.

FN21. Whereas claims 1 and 40 teach generating a message record for "an interexchange call," claims 12 and 18 teach generating a message record for "each interexchange ... for which a charge is to be imposed."

FN22. The 1993 Excel system includes a status code for the terminating subscriber and a status code for the originating subscriber. Thus, with respect to claim 18, if both subscribers to a call are PIC'd to Excel the value of the indicator would be "ACTV ACTV."

B. Invalidity

"A patent is presumed valid, and the burden of proving invalidity, whether under s. 112 or otherwise, rests with the challenger. Invalidity must be proven by facts supported by clear and convincing evidence." United

States v. Telectronics, Inc., 857 F.2d 778, 785 (Fed.Cir.1988). Excel contends that the '184 patent is invalid under both 35 U.S.C. s. 102 (anticipation) and s. 103 (obviousness) FN23 in light of the prior art.

FN23. Excel initially moved for summary judgment on grounds of anticipation under s. 102 and obviousness under s. 103. (D.I.185) On December 23, 1997, in response to AT & T's objection that Excel had exceeded the forty-page limit imposed by Delaware Local Rule 7.1.3, the court ordered Excel to select from its brief two prior art references for summary judgment. (D.I.209) Excel informed AT & T on January 6, 1998 that it was asserting on summary judgment the 1991 Excel system and the MCI Friends & Family prior art references as anticipating the '184 patent. Nevertheless, the court will address the obviousness over the prior art of the '184 patent, as the issue is properly framed by the record presented.

1. Anticipation 35 U.S.C. s. 102

Patent invalidity based on anticipation is a question of fact. *See* Glaverbel Societe Anonyme v. Northlake Mktg. & Supply, Inc., 45 F.3d 1550, 1554 (Fed.Cir.1995). Anticipation is established if every element of a properly construed claim is present in a single prior art reference. *See id.; see also* PPG Indus., Inc. v. Guardian Indus. Corp., 75 F.3d 1558, 1566 (Fed.Cir.1996); Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1576 (Fed.Cir.1991). "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." Scripps Clinic & Research Found., 927 F.2d at 1576.

In determining whether a patented invention is anticipated, the claims are read in the context of the patent specification in which they arise and in which the invention is described. If needed to impart clarity or avoid ambiguity, the prosecution history and the prior art may also be consulted in order to ascertain whether the patentee's invention is novel or was previously known to the art.

Glaverbel Societe Anonyme, 45 F.3d at 1554. Extrinsic evidence may be appropriate "to explain the disclosure of a reference." Scripps Clinic & Research Found., 927 F.2d at 1576. Extrinsic evidence is of "limited scope and probative value" since "anticipation requires that all aspects of the claimed invention were already described in a single reference." *Id*. Thus, extrinsic evidence may not be used to "prove facts beyond those disclosed in the reference in order to meet the claim limitations. The role of extrinsic evidence is to educate the decision-maker to what the reference meant to persons of ordinary skill in the field of the invention, not to fill gaps in the reference." *Id*.

Nevertheless, anticipation may be established if a missing claim element is within the knowledge of one of ordinary skill in the art. *See* In re Graves, 69 F.3d 1147, 1152 (Fed.Cir.1995). This "gap in the reference may be filled with recourse to extrinsic evidence." Continental Can Co. USA, Inc. v. Monsanto Co., 948 F .2d 1264, 1267-68 (Fed.Cir.1991). "Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Id*. (citing In re Oelrich, 666 F.2d 578, 581 (C.C.P.A.1981)). Thus, extrinsic evidence of the knowledge of one of ordinary skill in the art is relevant in situations where

the common knowledge of technologists is not recorded in the reference; that is, where technological facts are known to those in the field of the invention, albeit not known to judges.

Id. at 1269. Thus, extrinsic evidence has a limited scope in determining anticipation, as it may be used to

explain but not expand the meaning of a reference. *See* In re Baxter Travenol Labs., 952 F.2d 388, 390 (Fed.Cir.1991).

In the case at bar, Excel alleges that the '184 patent is anticipated by both the MCI Friends & Family program and its own 1991 billing and rating system (the "1991 Excel system").FN24 AT & T concedes that the early MCI Friends & Family system, which was limited to a calling circle of twelve (12) pre-identified subscribers, is prior art to the '184 patent. (D.I. 230 at 6 n. 2) AT & T argues, however, that the 1991 Excel system does not predate the earliest invention date of the '184 patent and, therefore, cannot be considered anticipatory prior art.

FN24. Excel also argues that the '184 patent is anticipated by the Bellcore EMI standard and AT & T's own Optimum Service.

The operation of the 1991 Excel system was similar to that of its 1993 system, described above. As part of the 1991 Excel system, customer status codes were placed in the message record in the PAYOR-STATUS field. (D.I. 198 at A701-02) These codes, which were the same as those used in the 1993 Excel system, indicated only the status of the subscriber who would be billed for the call. (D.I. 198 at A703-04, A1033, A1102) As such, the status code in the 1991 Excel system would reflect the PIC of the terminating subscriber only in those instances where the terminating subscriber was billed for the call, i.e., 1-800 calls. (D.I. 198 at A707-08, A1120; D.I. 230, Ex. 19 at 22, 24) The court, in its claim construction, omitted from the purview of the claims of the '184 patent 1-800 calls. The 1991 Excel system, therefore, does not read on the elements of the asserted claims.

Thus, the question remaining for the court is whether MCI's Friends & Family program reads on the elements of the asserted claims. As described in its product literature, the MCI Friends & Family program "invite[d] MCI customers to create a Circle of their most frequently called family members and friends and receive a 20% discount on calls to those people." (D.I. 199 at A1462) "All residential Dial 1 customers [were] eligible for the Friends & Family program." (D.I. 199 at A1470) "In order to receive the discount[, however,] the family member or friend must also be an MCI customer." (D.I. 199 at A1462)

The MCI Friends & Family program was formally announced by MCI in March 1991. MCI started accepting orders for such in March or April 1991. By late April 1991,

all of the systems for Friends & Family had been completed through testing and implemented to production but prior to turning on the Friends & Family discount in production, [MCI] executed an end-to-end test to ensure that all of the data for customers who had registered by that point actually could flow through to billing and be discounted appropriately.

(D.I. 198 at A808) The "software worked" and, consequently, the first production billing run for actual MCI Friends & Family customers took place between May 3 and May 7, 1991. (D.I. 198 at A806-808)

The process of generating an invoice for an MCI Friends & Family customer has been evidenced to be as follows in April 1991. Initially a call is placed on the MCI long distance network.

The MCI network switch which carries the call creates a call detail record called an AMA record ... containing informatio about the call as seen by the network: date, time, point of origin, point of termination,

duration of the call, et cetera.

(D.I. 198 at A796) Although counsel in their infinite wisdom failed to include a number of apparently helpful pages from the deposition of Michael Friedman (i.e., the appendix skips from page 78 to page 86), the court believes the data in the call detail record is further serviced by a software program "which does call marking;" i.e., the program contains the "logic which creates as output the Traffic Detail 1 layout." (D.I. 198 at A798; Ex. 132) Among the fields included on the traffic detail record listed within Exhibit 132 is "traffic detail FNF type," with "FNF" standing for "Friends & Family." (D.I. 199 at A1649, line number 2143) In April 1991, there were three values that the traffic detail FNF type field could have reflected: (1) a call made by a Friends & Family customer "to an active circle member PIC'd to MCI;" (2) a call made by a Friends & Family customer "to a nonactive candidate on the customer's Friends & Family circle" (a "nonactive candidate" being someone who was not PIC'd to MCI); and (3) "a value of blank indicating all other calls." (D.I. 198 at A802) These values were adduced by accessing the MCI customer account database, specifically the

Pairs Database which indicates which MCI customers selected what terminating phone numbers for discounting as well as indicating which of those terminating phone numbers were PIC'd to MCI and therefore active to receive the Friends & Family discount or not PIC'd to MCI and therefore not active to receive the Friends & Family discount.

(D.I. 198 at A817; D.I. 199, Ex. 132 at A1744, line number 5910; A1775, lines numbered 7122-7131) In other words, it is in this call marking program "where call information is compared to pair information...." (D.I. 198 at A818) Consequently, "[i]f the [Friends & Family] indicator is set, that means that the call was from an MCI customer subscribed in Friends & Family to a terminating phone number PIC'd to MCI, and therefore based on this call indicator the call will get a 20% discount." (D.I. 198 at A819)

When the call marking program is finished, the file created thereby, the Traffic Detail 1 file, is "a file of call detail records on MCI's production computer," with each record in the traffic detail file representing one telephone call. (D.I. 198 at A802-803) The Traffic Detail 1 record next passes through another program, known as the "call discount and summary program, which adds some more information to the traffic detail record and creates an output called the Traffic Detail 2 ...." (D.I. 198 at A803) In this program, the Friends & Family indicator field "would be accessed to ... calculate the Friends & Family discount, but [the field] would not be modified." (D.I. 198 at A803-804) This step is described as follows:

Within the logic of this program there wouldbe lines of code which look at the TRFD FNF-type field. And if it has a value indicating that an FNF discount should be applied, since that was a summary-level discount the priceof those calls would be summarized so that after completing the processing for that customer the Friends & Family discount could be calculated.

(D.I. 198 at A804) The Traffic Detail 2 record is used again for "invoice presentation." The invoice presentation program "reads in the Traffic Detail 2 file and some other files ... and creates either an invoice in printable format or a file in EMI format to send to local carriers who will handle the printing for [MCI]." (D.I. 198 at A804-805; D.I. 200, Ex. 135 at A2076, line number 6069; A2079, line number 6186; A2085, lines numbered 6481-6487)

AT & T contends that the MCI Friends & Family program does not anticipate any of the asserted claims of the '184 patent because the Friends & Family indicator is not a PIC indicator as that term is used in the '184

patent. The undisputed evidence of record demonstrates that MCI, a facilities-based IXC that carries its customers' calls, generates a message record for each interexchange call and includes within certain of those records an indicator having a value that denotes, *inter alia,* whether the terminating subscriber was at the time of the call PIC'd to MCI, a predetermined carrier. Thus, the MCI prior art reads on every element of claim 1.FN25 That the MCI indicator is included only in calls directed to those in the pre-identified calling circle does not alter this conclusion. The language of claim 1 does not explicitly require a PIC indicator be included in the message record of every interexchange call made by an originating subscriber and such a limitation will not be read into the claim. Thus, that the indicator is "not set" in some instances where the terminating subscriber is PIC'd to MCI is irrelevant since the claims do not require that the indicator be "set" every time the conditions exist for setting it.

FN25. As noted earlier, claim 1 requires only that a message record be generated for "an" interexchange call, not each call.

The language of claims 12 and 18, however, does require the provision of an "indication" in "each interchange call ... for which a charge is to be imposed." (Emphasis added) To the extent that an indicator denoting whether the called party was PIC'd to MCI is not included in the message record for those calls where the terminating party is not within the pre-identified calling circle, the MCI Friends & Family program does not anticipate claims 12 and 18 of the '184 patent. However, the fact that MCI's software program is able to include within a message record an indicator having one of the aforementioned values,FN26 leads the court to believe that inclusion of an indicator reflecting only whether the terminating subscriber was at the time of the call PIC'd to MCI was well within the knowledge of one of ordinary skill in the art at the time of the invention looking only at the MCI system itself.

FN26. Said value indicating for the most part not only whether the terminating subscriber was PIC'd to MCI but also whether he/she was within the pre-identified calling circle.

The court is mindful that both the MCI Friends & Family program and the '184 patent are directed to a method for generating a message record that includes an indicator whose value denotes whether a differential billing treatment is warranted. The fact that such an indicator is not included in certain message records generated within the MCI Friends & Family program is not indicative of a deficiency in the skill or knowledge of the programmer, but rather the lack of an economic incentive to offer a discount that required the inclusion of such an indicator in those MCI message records. In fact, according to Michael Friedman, from a programming standpoint it would have been "dramatically simpler to implement" and develop the software for an unlimited "MCI-to-MCI" program than it was for the more restrictive Friends & Family approach. (D.I. 198 at A832) Thus, the court concludes that "the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co., 948 F.2d at 1267-68.

Claims 4, 13, 19, and 40 include the further step of accessing a database containing the telephone numbers of "substantially all" of the subscribers of a particular IXC. In the MCI Friends & Family program, the value of the indicator is adduced by accessing a subdirectory within the MCI customer account data base-a data base which contains a listing of substantially all of MCI subscribers. Therefore, the MCI prior art reads on claims 4, 13, 19, and 40. The requirements of these claims are met despite the fact that the evaluation is made by accessing a subdirectory rather than the complete customer data base itself. The accessing of a

subdirectory is not precluded by the claim language. Moreover, the information contained within the subdirectory is extracted from the larger data base of MCI customer information; in effect, the complete customer data base is assessed in the process of evaluating the calls.

Dependent claims 6, 15, and 21 disclose the further step of billing "at least one[ ]" of said interexchange calls as a function of the value of the PIC indicator. The evidence of record establishes that the value of the MCI indicator in the message record is accessed in order to evaluate the discount to be applied when billing the subscriber. Consequently, the MCI Friends & Family program reads on dependent claims 6, 15, and 21.

Consistent with the above, the court concludes that the asserted claims of the '184 patent are anticipated by the MCI Friends & Family program. Accordingly, the '184 patent is invalid under 35 U.S .C. s. 102.

2. Obviousness

Notwithstanding the procedural history of this action and its finding that the '184 patent is anticipated by the MCI Friends & Family program, the court will address Excel's contention that the '184 patent is obvious in light of the prior art. A patent is invalid under 35 U.S.C. s. 103

if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

A finding of obviousness involves a determination that "the differences between the subject matter [of the patent] and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. s. 103. The ultimate determination of obviousness is a question of law based on underlying factual inquiries. *See* Richardson-Vicks Inc. v. UpJohn Co., 122 F.3d 1476, 1479 (Fed.Cir.1997). Those factual inquiries involve consideration of the four so-called *Graham* factors: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; FN27 (4) and any secondary considerations of nonobviousness, such as commercial success. FN28 *See* Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17-18 (1966); B.F. Goodrich Co. v. Aircraft Braking Sys. Corp., 72 F.3d 1577, 1582 (Fed.Cir.1996).

FN27. The factfinder must evaluate the invention, "not through the eyes of the inventor, who may have been of exceptional skill, but as by one of 'ordinary skill." ' Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138 (Fed.Cir.1985).

FN28. With respect to this last element, secondary considerations of commercial success, the court is not persuaded that any increase in Excel's revenue, customer base, or market standing is linked to the inclusion in its message records of a PIC indicator as disclosed in the '184 patent. Rather, any commercial success Excel enjoys is linked to the discount packages it offers, which are distinct from the operation of its rating and billing system. Therefore, the court finds this factor of little probative value to the discussion of obviousness.

"[T]he burden of showing, by clear and convincing evidence, the invalidity of [patent claims] is especially

difficult when the prior art was before the PTO examiner during the prosecution of the application." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1467 (Fed.Cir.1990) However, where there is "no PTO view ... on obviousness in view of [the asserted] references[,] the burden of proof ... is more easily carried." EWP Corp. v. Reliance Universal Inc., 755 F.2d 898, 905 (Fed.Cir.1985). Nevertheless, the burden of proof on invalidity remains with the party challenging the patent. *See* Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1375 (Fed.Cir.1986); American Hoist & Derrick Co. v. Sowa & Sons, Inc., 725 F.2d 1350, 1358 (Fed.Cir.1984).

To minimize the discussion, the court in assessing obviousness will consider only the MCI Friends & Family program and the Bellcore EMI standard, both of which are unquestionably prior art to the '184 patent.FN29 The question confronting the '184 inventors was how to provide in a message record generated for an interexchange call a PIC indicator the value of which, at a minimum, was a function of the PIC of the terminating subscriber, or of both the terminating and originating subscribers. Both of the prior art references are relevant to this discussion as they are directed to the subject matter at issue. The scope of the MCI Friends & Family program has already been addressed. The Bellcore EMI describes the standard format for EMI records "used for the interexchange of message information between Bellcore Client Companies and Interexchange Carriers for billing." (D.I. 201 at A3184) The reference teaches the use of an indicator in a message record that reflects the IXC associated with the called number in a 1-800 call. (D.I. 198 at A694-95; D.I. 201 at A3195-96, A3197, A3199)

FN29. The Bellcore EMI standard was published and offered for sale on August 16, 1990. (D.I. 198 at A764-65; D.I. 201 A3183-90) The court notes that AT & T has provided little, if any, probative evidence supporting its contention that the invention claimed in the '184 patent was conceived prior to the filing date of that patent much less by August 1990 (which the court will interpret as August 31, 1990). (D.I. 230 at 13 n. 5 and references cited therein) As noted previously, the MCI Friends & Family program was operational no later than May 7, 1991. The '184 patent application was filed in May 1992.

As noted above, there are very few differences between the prior art and the claimed subject matter of the '184 patent. Accordingly, the court will address in its obviousness analysis only that element not clearly anticipated by the MCI Friends & Family program, i.e., the provision of an "indication" or "PIC indicator" in "each interchange call ... for which a charge is to be imposed." (Emphasis added) With respect to this element, the competition in the telecommunications system to offer discounts in order to attract customers would have suggested to one of ordinary skill in the art to modify the MCI Friends & Family plan in order to provide a broader discount. One of ordinary skill in the art at the time of the invention FN30 would have known to combine the teachings of the MCI prior art with that of the Bellcore EMI prior art to insert a PIC indicator in a record which indicated for all calls the PIC of the terminating subscriber. Moreover, one of ordinary skill would have recognized from the teachings of the MCI Friends & Family program that the value of the PIC indicator could be determined from accessing a data base containing the telephone numbers of the subscribers of an IXC and that a discount could be assessed based on that value. Accordingly, the court concludes that the claimed invention, if not anticipated, is obvious in light of the prior art.

FN30. According to AT & T, one of ordinary skill at the time of the invention would have had a college degree and two to four years experience in developing plans and designing billing systems for interexchange carriers providing long-distance telephone services. (D.I. 201 at A2829) Excel asserts that the level of ordinary skill in the art is much higher than that asserted by AT & T but contends that even under AT & T's standard the claimed subject matter would have been obvious in light of the prior art. (D.I. 185 at 28)

VII. CONCLUSION

For the aforementioned reasons, the court finds that the 1993 Excel billing and rating system infringes the asserted claims of the '184 patent. However, the court further finds the '184 patent invalid and, therefore, unenforceable under 35 U.S.C. s.s. 102 and 103. An appropriate order shall issue.

D.Del.,1999.
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