United States District Court,
N.D. California, San Jose Division.

UTSTARCOM, INC,
Plaintiff.
v.
STARENT NETWORKS CORP,
Defendant.

No. C-04-1122 PVT

Aug. 11, 2005.

Adam Pierre Michael Noah, Vicki Susan Veenker, Shearman & Sterling LLP, Menlo Park, CA, Brian C. Cannon, Quinn Emanuel Urquhart Oliver & Hedges, LLP, Redwood Shores, CA, Jenna F. Leavitt, Venable, LLP, Los Angeles, CA, for Plaintiff.

Christopher S. Shutz, Lawrence R. Robins, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Cambridge, MA, E. Robert Yoches, Pedro F. Suarez, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Washington, DC, Scott Richard Mosko, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Palo Alto, CA, for Defendant.

ORDER RE: CLAIM CONSTRUCTION OF UNITED STATES PATENT NO. 6,628,671

PATRICIA V. TRUMBULL**, United States Magistrate Judge.**

I. INTRODUCTION AND FACTUAL BACKGROUND

The proper construction of U.S. Patent No. 6,628,671 ("the '671 patent") is currently before the Court. Plaintiff UTStarcom, Inc. ("UTStarcom") alleges that Defendant Starent Networks Corp. ("Starent") infringes claims 1 and 2 of the '671 patent by making and selling the ST-16 Intelligent Mobile Gateway device (the "accused device.")

The '671 patent involves a communications device (or mobile unit), such as a laptop or cell phone, accessing a network using a point-to-point protocol ("PPP"). PPP is a protocol or standard originally designed to allow dial up access to the internet, but also used to allow wireless access to the internet. The accused device is a "Network Access Server", a computer server that allows for wireless devices to connect to the internet. The patent also refers to the network access server as an IWU. FN1 The network access server translates between the wireless protocols used by radio equipment and the packet protocols used by the internet. (Francis PI Decl. para. 14.) The wireless device connects through a radio tower to a Base Station and a Central Base Station Controller ("CBSC"). The CBSC interfaces between the radio tower and the network access server. The connection between the Base Station and the network access server is called a frame relay interface. FN2

FN1. The technology is now in "3G" or Third Generation Technology. In the 3G terminology the Network Access Server is known as a "PDSN" a Packet Data Serving Node. (Francis PI Decl. para. 36.) ("Francis PI Decl." refers to the declaration of Dr. Paul T. Francis submitted by UTStarcom in support of its motion for Preliminary Injunction.)

FN2. In 3G technology, the Base Station and Central Base Station Controller have been replaced by a "PCF" or Packet Control Function and the connection between the PCF and the network access server is now an "R-P Session." (Francis PI Decl. para.para. 27, 31.)

Information enters the network access server from the frame relay on a T1 line that connects to one of four physical ports on a Quad Tl card. The Quad Tl card links up to a "system bus" that allows all of the pieces of the network access server to communicate with each other. The information then passes to an MCP ("Mobile Call Processor") card. The MCP card forwards PPP packets over the system bus to a MARC ("Mobile Access Router Card"). The MARC card is where PPP state is stored and higher level protocol processing is done to allow for routing packets over the internet. (Ennis Decl. para. 12.) The MARC card sends and receives packets to and from the internet through a Dual Ethernet NIC card. (*See also* figure 2 of the '671 patent.) In the preferred embodiment of the patent, each MARC card can support a number of MCP cards. ('671 Patent Col. 10 lines 43-46.) FN3

FN3. A11 further references to patent columns and lines are to the ' 671 patent unless otherwise noted.

A "Negotiation" or exchange of information establishes parameters for the transmission and reception of data packets between a mobile unit and a Network Access Server. The information resulting from the negotiation is called "PPP State." (Francis PI Decl. para. 17.) "PPP state" is "a set of parameters negotiated pursuant to PPP sufficient for a PPP session." (Jt. Claims Construction Chart at 1.) A "PPP Session" is the time during which a communications device and a network access server are maintaining a negotiated PPP state. (Id.)

Claim 1 and dependent Claim 2 of the '671 patent state:

1. A method of connecting a communications device to a packet switched network, comprising the steps of:

initiating a Point-to-Point Protocol (PPP) session between said device and a network access server, said network access server providing access to said packet switched network for said device, said session associated with a PPP state and with a first port in said network access server, wherein said PPP session thereafter becomes dormant but said PPP state is not removed from said network access server;

receiving, after said PPP session has become dormant, at said network access server a new call set-up message associated with said device, said new call set-up message arriving at a second port in said network access server;

switching said PPP state from said dormant PPP session associated with said first port to a session associated with said new call set-up message associated with said device at said second port,

wherein said PPP state is transferred to said session associated with said new call setup message and the negotiation of link control protocols or network control protocols between said device and said network access server may be avoided.

2. The method of claim 1, wherein said PPP session becomes dormant due to movement of said device relative to a first radio tower linking said device to a wireless communications network, and wherein said new call set-up message is initiated in response to said device coming within range of a second radio tower in said wireless communications network.

(Col. 18 line 52-Col. 19 line 16.)

The dispute involves the process by which a wireless device re-connects to the internet after going "dormant," a state in which there is no active data transfer. UTStarcom claims that, in the prior art, when calls went dormant the re-connection required "renegotiation of PPP state." The patented invention covers a means to hand-over between the two connections to provide the user with uninterrupted access to the internet. The '671 patent describes a means to store PPP state information in the memory of the network access server when the device was not sending or receiving information and switching the PPP state to the new, active session.

The Court held a claim construction hearing on June 30, 2005.

II. LEGAL STANDARDS

Claim construction is a matter of law for the court, which is empowered and obligated to construe the meaning of the language used in the patent claim. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995)(en banc), *affd,* 517 U.S. 370 (1996). In interpreting disputed claim terms, the court should look first to the intrinsic evidence of record. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). Intrinsic evidence includes the language of the claims, the specification, and the file history, if in evidence. *Id.*

"Claim language generally carries the ordinary meaning of the words in their normal usage in the field of invention" at the time of invention. Invitrogen Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1367 (Fed.Cir.2003); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002) (There is a " 'heavy presumption' that a claim term carries its ordinary and customary meaning.") A court determines the meaning of a technical term in a patent claim "in accordance with its usage in the specification, elaborated if appropriate by the prosecution history and with due consideration to usage in the field of the invention." Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1326 (Fed.Cir.2004). Dictionaries can be helpful in ascertaining the plain and ordinary meaning of claim language. Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed.Cir.2002). However, the Federal Circuit recently clarified the roll of dictionary definitions in claim construction, finding that the Texas Digital line of cases too often has been "improperly relied upon to condone the adoption of a dictionary definition entirely divorced from the context of the written description." Phillips v. AWH Corp., 415 F.3d 1303, 2005 WL 1620331 at (Fed.Cir. July 12, 2005) (en banc). The Federal Circuit explained that: "The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive." *Id.*

The Federal Circuit reaffirmed that the specification is the "single best guide to the meaning of a disputed term" and "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." *Phillips* at *13, *quoting* Vitronics, 90 F.3d at 1582. The Federal Circuit cautioned that starting with a broad dictionary definition and requiring explicit narrowing in specification is inconsistent with its prior rulings. *Phillips* at *13, *citing* Bell Atl. Network Servs., Inc. v. Covad Comms. Group, Inc., 262 F.3d 1258, 1268 (Fed .Cir.2001) ("[A] claim term may be clearly redefined without an explicit statement of redefinition.")

The challenge still remains to use the specification properly. "On the one hand, claims 'must be read in view of the specification, of which they are a part.' On the other hand, it is improper to read a limitation from the specification into the claims ." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904-05 (Fed.Cir.2004) (citations omitted.) Where the specification explicitly refers to the invention in a manner that makes clear that the invention is narrower than the claim language might imply, it is "entirely permissible and proper to limit the claims." Alloc. Inc. v. International Trade Commission, 342 F.3d 1361, 1370 (Fed.Cir.2003). However, the law "does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention." Superguide Corp. v.. DirectTV Enters., Inc., 358 F.3d 870, 880 (Fed.Cir.2004), *quoting* SRI Intern. v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121 (Fed.Cir.1985).

The court may also consider the file history of the patent, if it is in evidence. Vitronics, 90 F.3d at 1582. The file history is often of critical significance in determining the meaning of the claims. *Id*. Any interpretation that is provided or disavowed in the file history shapes the claim scope. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249 n. 3 (Fed.Cir.1998). Finally, the court may also consider extrinsic evidence in the form of expert testimony, but should not accept conclusory assertions or expert testimony at odds with the intrinsic evidence. Phillips, at * 10, *citing* Key Pharms v. Hercon Labs Corp., 161 F.3d 709, 716 (Fed.Cir.1998).

III. DISCUSSION

The parties dispute the construction of the following terms: 1) Port: 2) Dormant/Dormant PPP session; 3) Switching/ Transferring; and 4) Session.

A. Port

UTStarcom asserts that a "port" is "a defined physical or logical connection where data enters or leaves a network device." Starent asserts that "port" is "a physical connection point in a telecommunications device for communication with other devices." (Jt. Claims Construction Statement at 2.) The dispute is whether port is limited to physical connection points or can include logical connections.

The claim language using port is: "said session associated with a PPP state and with a first port in said network access server"; "said new call set-up message arriving at a second port in said network access server"; and "switching said PPP state from said dormant PPP session associated with said first port to a session associated with said new call set-up message associated with said device at said second port." Thus, the claim language uses the word port without referring to physical or logical connections.

1. *The Specification*

Starent argues that the specification describes only physical ports. UTStarcom disagrees, arguing that the

specification also references logical ports. UTStarcom also argues that, more importantly, the specification discloses no intent to limit the definition of port to physical ports.

Starent points to several places where it argues that the specification refers to physical ports. For example, Starent quotes: "An object of the invention is to provide a method to allow a PPP session to go dormant and then dial back into a different port on the same network access server" without requiring renegotiation. (Col. 2, lines 52-54.) Starent argues that "dial back" is a phrase referencing a physical port. (Ennis PI Decl. para. 18, Ennis Decl. para. 11.) UTStarcom disagrees, arguing that "dialing" refers to the fact that one end of this communication is a person on a phone and does not refer to whether the data enters the network access server on a physical or logical port.

Similarly Starent quotes language in the specification that a new call set-up message is received "at a second port in the Network Access Server." (Col. 7 lines 19-20.) Starent offers the opinion of expert Ennis that the claim's use of the phrase "arriving at a port" (Col 18 line 66) "implies physicality since the network access server is piece [sic] of physical hardware having physical ports 'at' which messages arrive." (Ennis Decl. para. 10.) However, all the proffered definitions of port involve the concept of entrance or exit point and Starent offers no argument why the network access server could not also have logical ports "at which" messages arrive.

Starent also points to a reference in the specification to the RS-232 port, a physical port in the network access server that receives a T1 line. (Ennis Decl. para. 11, *quoting* Col. 15 line 6.) This part of the specification describes one embodiment of the invention, when the new call arrives on a T1 interface on the same MCP ("Mobile Call Processor") card in the network access server. The specification states that the "configuration database can also be modified through different mechanisms" including "Local command line interface over RS-232 port on the MCP network interface card." (Col. 15 lines 3, 6.)

UTStarcom argues that the specification also references "port" in a manner that suggests a software construct or logical port. UTStarcom points to the following language relating to the process in the preferred embodiment when the device comes into range of a new tower and a new call set-up message is sent to the network access server: "The new call set-up message is assigned to a certain port in the second network access server." (Col. 8 lines 24-25.) UTStarcom argues that "assigned" suggests a logical port as opposed to a physical port.

UTStarcom also argues that the description of embodiments in the patent states "Each card is configured to receive four T1 digital telephone lines, comprising twenty four time division multiplexed channels" refers to a logical port (Col. 9 line 67-Col. 10 line 2). Data from multiple calls arriving over the same physical line need to be separated by the network access server. UTStarcom argues that the patent refers to logical ports because the process of sorting the data involves both physical and logical ports. (Boyle Decl. Exh. B, Perkins Depo. 51:24-52:18; Boyle Decl. Exh. D, Francis Depo. Tr. 178:14-179:7). Starent argues that this reference is not persuasive because it is not tied to how "port" is used in the rest of the specification or the claims. The question, however, is not whether the patent intended to limit "port" to the logical sense, but rather whether the patent evinces an intent to limit "port" to the physical sense.

In sum, Starent does point to an example that is, without debate, a physical port, and the parties disagree over whether other references are limited to physical ports or refer to logical ports. However, Starent points to no language that it argues can be construed as intending to limit the definition of "port" to physical ports.

2. ***Dictionary Definitions***

At the hearing, UTStarcom presented three contemporaneous dictionary definitions for the word "port": 1) "A computer interface capable of attaching to a modem for communicating with a remote terminal; the logical entrance and exit through which data traffic flows into and out of a network." *Dictionary of Communications Technology* at P. 412 (3rd ed.1998); 2) "An entrance to, and/or an exit from a network." *Newton's Telecom Dictionary* at p. 509 (12th ed.1997); and 3) "A Network entry or exit point." *Wireless Technology, A Reference Guide* at p. 169 (Premier ed.1998). Starent presented a definition of: "the physical interconnection point or an access point for a communication link." *IEEE Standard Dictionary of Electrical and Electronics Terms* (6th ed.1997).FN4 Thus, the parties have presented contemporaneous definitions which both include and exclude logical connections. Accordingly, the dictionary evidence demonstrates that the understanding of port of one or ordinary skill in the art in 1999 included both logical and physical connections.

FN4. A11 four of the dictionary definitions were admitted into evidence at the hearing without objection. UTStarcom also asserted the definition of port in Starent's on-line glossary published in 2004. This definition is not relevant because it is not contemporaneous with the patent application (filed in 1999) and is not intended for common usage. ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082,1089-90 (Fed.Cir.2003).

3. Expert Testimony

UTStarcom cites expert Dr. Francis, who opined: "In the context of computer networking and in these patent claims, [port] means a defined physical or logical connection where data enters or leaves a network device." (Francis PI Decl. para. 43.) Dr. Francis stated: "I understand that claim terms are to be interpreted and understood as they would be interpreted and understood by those of ordinary skill in the field in light of the patent specification and its file history" and that he would "provide the understanding that would be given to the terms by those of ordinary skill in the field." (*Id*. at para. 36.) Dr. Francis does not, however, indicate that he was opining as to the understanding as of 1999. Thus, the credibility of his testimony is lessened by this failure.

UTStarcom next asserts that Starent has conceded that the "ordinary meaning" of "port" is not limited to physical ports. (Opening Br. 5:19-20.) Starent's expert, Ennis declared: "Claim 1 also refers to the term 'port', which I think a person of ordinary skill in 1999 would have considered a physical connection point in a device for communication with other devices, because that is (and was in 1999) the most common meaning of the term in the industry." (Ennis PI Decl. para. 18.) FN5 Although Ennis does not concede that the ordinary meaning included logical connections, he does concede that other meanings of port were known in 1999.

FN5. "Ennis PI Decl." refers to the declaration submitted by Gregory B. Ennis in opposition to UTStarcom's motion for preliminary injunction.

4. ***The Court Construction***

In sum, the contemporary dictionary definitions show logical connections were included in the common meaning of port. The specification contains no contrary definition of the word "port." Although the examples in the specification mostly refer to physical ports, the specification also refers to logical ports.

More importantly, the specification discloses no clear use of the term in a limiting manner and no disavowal of the use of the word "port" to refer to logical connections. Accordingly, the court construes port as "a defined physical or logical connection where data enters or leaves a network device."

B. Dormant/Dormant PPP Session

Starent proposed dormant be defined as: "a state of no active data transfer for a predetermined period of time allowing reallocation of resources, but from which active data transfer can resume more efficiently than it could from an inactive state." (Supp. Jt. Claims Constr. Stmt. at 3.) At the hearing, UTStarcom agreed with Starent's definition. (Claim Construction Hearing Transcript at 52:21-22.) (hereinafter "CC Hearing Tr.") The Court finds this a reasonable construction and construes "dormant" as "no active data transfer for a predetermined period of time allowing reallocation of resources, but from which active data transfer can resume more efficiently than it could from an inactive state."

UTStarcom proposed "dormant PPP session" be defined as "no active data transfer, but the PPP session is maintained." Starent proposed: "A PPP session assigned a 'dormant' state because no active data transfer has occurred for a predetermined period of time and resources have been reallocated, and during which, the PPP state is not removed." (Supp. Jt. Claims Constr. Stmt. at 5.) The specification defines "dormant PPP session" as "no active data transfer but the PPP session is still active." (Col. 2 lines 29-30 .) At the hearing, the parties agreed upon a construction of: "a PPP session in a dormant state." (CC Hearing Tr. at 60-61.) The Court finds this a reasonable construction and construes "dormant PPP Session" as "a PPP session in a dormant state."

C. Switching/Transferring

The claim language using switching and transferring is: "switching said PPP state from said dormant PPP session associated with said first port to a session associated with said new call set-up message associated with said device at said second port" (Col. 19 lines 1-4) and "wherein said PPP state is transferred to said session associated with said new call set-up message" (Col. 19 lines 5-6).

UTStarcom proposes that switching and/or transferring be construed as "shifting or reassociating PPP state to another session associated with the new call set-up message." Starent proposes "moving PPP state parameters for one session to a new location for use in another session associated with a new call set-up message." (Supp. Jt. Claims Const. Statement at 4.) The dispute is whether switching and transferring include reassociation (as UTStarcom argues) or a physical copying is required (as Starent argues.)

1. ***Specification***

Starent argues that the specification implies an intent to limit the term to physical relocation. Starent first points to the specification's reference to "context-switching" between different network access servers. "The 'context-switching' in multiple different network access servers/InterWorking Units is as follows." (Col. 8 lines 9-10) and "A similar process can be used for transferring an active PPP state among different network access servers, as described above." (Col.9:33-35.) Starent correctly points out that switching and transferring between different network access servers must involve physical copying. Starent also points to the following example:

The network access server 24A then 'context-switches' the PPP state from the dormant Point-to-Point Frame Relay interface to the active Frame Relay Point-to-Point interface. The PPP module that is controlling the

newly-opened connection has its PPP 'state' variables populated with copies of those variables in the dormant PPP session.

(Col. 7 lines 60-65.) Thus, Starent argues that context switching "must" be physical.

However, examples in which context switching is physical does not demonstrate an intent to require physical movement in every instance in which switching is used. In fact, UTStarcom points to two examples in the specification where switching and transferring do not involve physical copying. One embodiment involves the hand-over that occurs when the call comes into the same MCP card. If the new call comes in on the same MCP card, the MCP card handles the hand-over. Because the MARC card holds PPP state and is not involved in this hand-over, there is no physical copying of PPP state. The specification states that, when the MCP card identifies the new call set-up message with an existing dormant session:

A path between the frame relay task 116 and the existing system bus session (which must already exist if an IMSI is found in the DCD) is then established. PPP offloading state procedures and ACCM (negotiated encoding rules for control sequences) are then reapplied to the data path. At this point the data path is opened and the PPP relay module 134 transfers new data packets as usual.

(Col. 14 lines 43-49.) UTStarcom argues that, because PPP state is not renegotiated for a new call, PPP state must be switched: "The PPP is not moved off of the MARC card. The PPP is not renegotiated. But the mobile user now uses the PPP that was previously associated with the first call. And that is an example of switching." (CC Hearing Tr. at 107:22-108:2.)

Starent argues, supported by expert opinion, that this section of the specification does not refer to switching of PPP state and does not practice the method of claim 1 of the '671 patent. Starent asserts that PPP state is not switched because PPP state is stored on the MARC card and the MARC card is, by definition, not involved in the hand-over handled entirely by the MCP card. (Ennis Decl. para. 16.) UTStarcom responds that Starent's expert opinion is dependent upon Starent's construction of the terms switching and transferring as requiring physical copying. UTStarcom further argues that, under its proposed construction of "shifting or reassociating PPP state to another session associated with the new call set-up message," the example cited describes switching because the PPP state is reassociated from the first session to the second session.

When a call goes dormant, the MCP card drops the connection to the mobile device while maintaining the system bus connection to the MARC card. (Col. 16 lines 27-30.) The MARC card supports the hand-overs by suspending the existing system bus connections to the MCP cards. (Col. 16 lines 40-41). A suspended system bus connection maintains the connection between the MARC card and the MCP card as well as the PPP context associated with the connection. (Col. 16 lines 41-44.) If a new call from the same mobile device comes into the same MCP card, the MCP will open a pathway from the new call to the existing system bus connection. (Col. 14 lines 40-49.) In this way, the PPP state from the first session is reassociated to the second session and used to allow for the transmission of data. Thus, the MCP's establishment of a path for the new call (from the second session) to use the existing system bus session (maintaining PPP state from the first session) is an example of switching PPP state under UTStarcom's construction.

A construction that would exclude one of the preferred embodiments of the specification is rarely correct. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996) (such a construction is rarely, if ever, correct and would require highly persuasive evidentiary support). At the hearing, Starent argued that *Vitronics* only referred to the situation where all embodiments were excluded. However, the Federal Circuit

rejected a construction under which "a preferred (and indeed only) embodiment in the specification would not fall within the scope of the patent claim. Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support." *Id*. Thus, the exclusion of a single preferred embodiment is disfavored. *See also* Microsoft v. Multi-Tech Sys, Inc., 357 F.3d 1340, 1353-54 (Fed.Cir.2004) (declining construction that would exclude one of three preferred embodiments); Invitrogen Corp. v. Biocrest Mfg., L .P., 327 F.3d 1364, 1369 (Fed.Cir.2003); (declining construction that would exclude some, but not all, embodiments).

Additionally, UTStarcom also points to a second example where the specification discloses transfer of PPP state that would fall outside the preferred embodiment under Starent's proposed construction. When the second call comes into a different MCP card, but one associated with the same MARC card as the first call, the MCP card signals the MARC card that there is a new call. The MARC card then determines:

if a system bus/PPP session already exists for this mobile. If it does the old system bus connection is dropped and a new one is established with the MCP. The existing PPP context or "state" is transferred to the new SBUS connection and PPP traffic flows as if nothing ever happened.

(Col. 17 lines 1-6.) In this example, there is no physical movement of PPP state off the MARC card, but the PPP state is "transferred" to the new call.

2. *Dictionary Definitions*

Starent does not argue that the dictionary definition of switching implies physical movement. Instead, Starent argues that transfer implies physical movement and that, because switching and transferring are used interchangeably in the claim, both terms must involve physical movement. Starent relies upon the Merriam-Webster definition of transfer: "to convey from one person, place, or situation to another: TRANSPORT." (Francis PI Decl. Exh E, Merriam-Webster's Collegiate Dictionary (Tenth ed.2001). UTStarcom relies upon a different definition from the same dictionary "to cause to pass from one to another: TRANSMIT." (*Id*.) In this case, transfer is being applied in a virtual context. Thus, the general definition, especially when used as "transport," is not helpful because it has no relation to the context in which the patent uses the word. Ferguson Beauregard v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed.Cir.2003) ("Dictionary definitions, while reflective of the ordinary meanings of words, do not always associate those meanings with context or reflect the customary usage of words by those skilled in a particular art.")

3. Expert Opinion

UTStarcom argues that one of ordinary skill in software and computer networking would understand "switching" to include logical movement within a data structure and would not require physical copying of data. (Francis PI Decl. para. 52.) For example, when one moves a file from one directory to another, the file contents are normally not copied, instead, the new directory is associated with the file. (Francis PI Decl. para. 53.) UTStarcom also argues that in the virtual context things are moved or transferred without physical relocation. For example, money is transferred between bank accounts without the movement of bags of money. Starent argues that Dr. Francis' definition is limited solely to the software context and is thus inapplicable to this patent where both software and hardware are involved. Dr. Francis, however, specifically ties his definition to the invention and to transfer of PPP state within a network access server.

Starent expert Perkins opines "context-switching" refers to physical movement of data. However, Perkins did not agree that this understanding would have been shared in 1999 by one of ordinary skill in the art.

Instead, Perkins opined that context switching was not widely discussed at the time. (Mosko Deck Sealed Exh F, Perkins Depo Tr. at 59:7-22.) Accordingly, this testimony is not persuasive of how the term would have been understood by one of ordinary skill in the art in 1999. Moreover, UTStarcom expert Francis disagreed, stating that context switching could include two methods; one where the data is not moved and "some other data structure is modified to indicate that the data that was there is now to be associated with something new" and one that would include copying. (Cannon Deck Sealed Exh. D, Francis Depo. at 173-74.) FN6 Dr. Francis, however, also did not opine as to how one of ordinary skill in the art in 1999 would have understood the phrase.FN7

FN6. Starent argues that Dr. Francis conceded that the description of context switching limits it to physical copying. The deposition testimony, however, is clear that Dr. Francis finds the language referring to a single description of a process that could involving either copying or reassociation.

FN7. As noted above, Dr. Francis' declaration does refer to the understanding of one skilled in the art in light of the specification, but is not specific to 1999.

4. *The Court Construction*

In sum, the specification discloses two examples of the preferred embodiment which would be excluded from the claims of the patent under Starent's proposed construction, but which would be included under UTStarcom's construction. Starent has not pointed to any language in the specification that purports to limit the definition of switching or transferring to only physical copying. Starent has also not produced evidence that one skilled in the art in 1999 would have understood switching and transferring to be limited to physical copying. Thus, Starent has not produced any highly persuasive evidence that would justify its exclusionary construction. Accordingly, the Court construes "switching" and "transferring" as "shifting or reassociating PPP state to another session associated with the new call set-up message."

D. Session

On May 24, 2005, the parties added the term "session" as a term in need of construction. UTStarcom proposed that ' "a session' is not limited to a PPP session and 'said session' is not limited to a PPP session." Starent proposed ' "a session' means 'a PPP session' and 'said session' means 'said PPP session.' " (Add. to Supp. Jt. Claims Constr. Chart.) At the hearing, UTStarcom proposed that a "session" mean "a communication path from one device to another and not a PPP session." (CC Hearing Tr. at 31:14-15.) UTStarcom supports this construction with the following definition of "Session" as: "a related set of communications transactions between two or more network devices." (Boyle Decl. Exh. F., *McGraw-Hill Illustrated Telecom Diction* (2nd ed.2000) at p. 527 .) UTStarcom also cites deposition testimony of Starent expert Ennis:

Very generally, the term 'session,' you know, can refer to a-some kind of a established communication path from one device to another that is established, used for some period of time, and then is terminated.

(Boyle Decl Exh E., Ennis Depo. Tr. at 48.) Thus, UTStarcom argues that session should be construed as used in this patent to require no more than a communication path. Communication, however, requires the establishment of parameters for the exchange of data. (*See* Transcript of Tutorial held May 11, 2005 (hereinafter "Tutorial Tr.") at 31:4-32:18) (describing how a PPP session requires a negotiation of

parameters to allow for data transfer); Ennis Depo. Tr. at 48:20-25 (indicating that specific protocols are used in providing the communication.) FN8 Thus, the proposed construction of session is troubling because it does not provide for any protocols or methods that would allow for data exchange.

FN8. Unfortunately, page 49 of the Ennis Deposition transcript is not in the record, so the import of the Ennis testimony is not clear.

However, the parties do not dispute that the general definition of "session" is not limited to a PPP session. The dispute here is the proper definition of "session" in the context of the patent. Accordingly, whether the proposed definition would be sufficient in a vacuum is of no import and the Court turns to proper definition in the context of the '671 patent.

1. ***The Claim Language***

a. Claim language does not uniformly use PPP in each reference to the PPP session

UTStarcom argues that the claim language expressly refers to any session that had to be a PPP session as a PPP session. Thus, any reference to a session without the modifier "PPP" refers to a session that is not a PPP session. However, the claim language is not that precise. Instead, the claim language states:

initiating a Point-to-Point Protocol **(PPP) session** [1st] between said device and a network access server, said network access server providing access to said packet switched network for said device, said **session** [2nd] associated with a PPP state and with a first port in said network access server, wherein said PPP session [3rd] thereafter becomes dormant but said PPP state is not removed from said network access server;

receiving, after said **PPP session** [4th] has become dormant, at said network access server a new call set-up message associated with said device, said new call set-up message arriving at a second port in said network access server;

switching said PPP state from said dormant **PPP session** [5th] associated with said first port to a session [6th] associated with said new call set-up message associated with said device at said second port,

wherein said PPP state is transferred to said session [7th] associated with said new call set-up message and the negotiation of link control protocols or network control protocols between said device and said network access server may be avoided.

(Col 18 line 55-Col. 19 line 9.) (emphasis and bracketed numerical references added).FN9 In the second reference (referring to the first session), the claim merely states "said session associated with a PPP state." Moreover, this is similar to both the sixth and the seventh references (referring to the second session). The sixth reference involves "switching said PPP state" to a session associated with said new call set-up message and the seventh reference states "PPP state is transferred to said session." Accordingly, the claim language does not expressly use "PPP session" for any session that is a PPP. Thus, the language is, at best, ambiguous.

FN9. The parties agree that references 1-5 are to the first session and references 6 and 7 are to the second session.

b. Patent Parlance does not clarify that the second session is not a PPP session

UTStarcom next argues that, as a matter of patent parlance, the claim language discloses that the second session is not a PPP session. UTStarcom cites Landis on Mechanics of Patent Claim Drafting (4th Ed.1996) at s. 23 for the proposition that the first time an element is mentioned it should be preceded by an indefinite article "a" or "an" and should not be preceded by a definite article such as "the or "said." Thus, when an indefinite article is used, it suggests that a new element is being identified. UTStarcom then argues that the first time the second session is referred to in the claims language [the sixth reference], it is preceded by the indefinite article "a", suggesting a new element. Starent agrees that the second session is a new element; it is different from the first session and thus, could not have been referred to as "said session" or "the session." However, the use of the indefinite article sheds no light on the specific nature of the new, second session.

UTStarcom also argues that construing the second session as a PPP session would lead to ambiguity in the claim 2. Claim 2 states:

The method of claim 1, wherein said PPP session becomes dormant due to movement of said device relative to a first radio tower linking said device to a wireless communications network, and wherein said new call set-up message is initiated in response to said device coming within range of a second radio tower in said wireless communications network.

(Col. 19 lines 10-16.) UTStarcom argues that "said PPP session" would be ambiguous if there are two PPP sessions in claim 1. However, the reference to "wherein said PPP session becomes dormant" is clear because only the first PPP session becomes dormant.

c. Construction requiring a second PPP session is consistent with the invention

UTStarcom next argues that construing session to mean PPP session would not be consistent with the invention. UTStarcom argues that a PPP session must have a negotiated PPP state. UTStarcom draws two conclusions from this fact: 1) a second PPP session would require two negotiations, which would be contrary to the invention; and 2) a second PPP session would render the switching element meaningless because it would make no sense to transfer PPP state to a second PPP session. (Opening Brief at 10-11.) UTStarcom's arguments, however, fail to recognize that the patent describes the switching of PPP to a second PPP session in order to avoid a second negotiation.

The patent specification states:

An object of the invention is to provide a method to allow a PPP session to go dormant and then dial back into a different port on the same network access server without needing to go through the standard LCP and NCP negotiations to bring the new PPP session active.

(Col. 2 lines 53-57.) As the Court noted in the Order denying Preliminary Injunction:

Thus, the patent describes the invention as using two PPP sessions without renegotiation. While it is true that negotiation is necessary for a PPP session to exist, the point of the invention is to save and transfer the PPP state to allow the second PPP session to become active without the second negotiation. Thus, the second PPP session starts after the transfer of the state instead of after the negotiation.

(June 17, 2005 Order Denying Preliminary Injunction at 7:19-23). This finding is consistent with UTStarcom's position expressed in its Reply Brief on Claim Construction issues (filed on June 16, 2005): "The second session, however, cannot be a PPP session until either PPP state is switched or PPP is renegotiated." (Reply at 6:17-18.)

UTStarcom also argues that the agreed definition of "PPP Session" of "the time during which a communications device and a network access server are maintaining a negotiated PPP state," is inconsistent with two PPP sessions because the negotiated PPP state is maintained throughout the hand-over. Because PPP state is maintained, UTStarcom argues that only one PPP session can be present.

Starent responds that nothing in the definition of PPP Session requires that the reuse of negotiated PPP state inevitably results in the continuation of a single session. Starent's logic is correct. Just as a new PPP session can start when PPP state is transferred, the prior PPP session can end at the transfer of PPP state.

The specification specifically describes multiple PPP sessions sharing a single negotiated PPP state. In the section describing hand-overs between calls, the process by which PPP state is transferred from an old call to a new call, the specification describes the hand-over between MARC cards in a single IWU as follows: "The MARC card 60 (FIG.2) handles hand-overs when the mobile node moves about the wireless network such that new PPP sessions are set up between different MCP cards within the same IWU." (Col 14 lines 29-32.) (emphasis added). Additionally, the specification describes a hand-over as involving the end of one PPP session and the start of a new PPP session. The specification describes the hand-over when the new call set-up message is received by a different IWU as follows:

If the RADIUS server determines that the mobile device already has authenticated at another MARC, the RADIUS server will send a resource-reclaim to the old MARC and then send an access-accept to the new MARC. This tears down the PPP connection on the old MARC card and establishes **a new PPP session** from the new MARC card to the mobile.

(Col. 17 lines 12-18.) (Emphasis added.) Thus, the specification does not support UTStarcom's argument that maintenance of PPP state precludes the possibility of multiple PPP sessions.

Moreover, multiple PPP sessions using a single PPP state is consistent with the technology available when the patent application was filed. Under the older legacy system, the frame-relay circuit that connected the Base Station Controller to the network access server was completely dedicated to the single call. (Tutorial Tr. at 37-38.) Under this system, two PPP sessions were required when a user moved from tower to tower because the available technology did not allow for a single subscriber session to have simultaneously two points of attachment in a wireless network. (Ennis PI Decl. para. 27.)

Finally, UTStarcom's own expert, Dr. Francis, accepted transfer of PPP state between two PPP sessions when he asserted that the accused device: "will transfer the PPP state from the PPP session associated with its PCFl port to the PPP session associated with its PCF2 port." (Francis PI Decl. para. 70.) FN10

FN10. The Court expresses no opinion as to whether the accused devices performs as asserted, but merely notes Dr. Francis' opinion that transfer of PPP state between PPP sessions is possible.

Thus, although maintenance of PPP state is necessary for continuation of a PPP session, it does not

necessarily result in continuation of the same PPP session.FN11 Accordingly, a construction that results in two PPP sessions and one negotiated PPP state is consistent with the invention.

FN11. At the hearing, UTStarcom argued that the agreed upon definition of PPP Session would need to be modified to add "over a given pathway" in order to be consistent with two PPP sessions and one maintained PPP state. Because the maintenance of PPP state is consistent with multiple PPP sessions, it is not necessary to modify the jointly agreed upon definition of PPP session.

2. ***The Specification***

UTStarcom and Starent both argue that portions of the specification support their proposed constructions. Additionally, UTStarcom argues that the references in the specification to two PPP sessions are consistent with its proposed construction that the second session is not a PPP session.

a. References to two PPP sessions and references to the second session without use of the PPP modifier

In explaining the Background of the Invention, the specification states:

The known prior art has failed to recognize that if a PPP session for a user goes dormant and the user then connects to a different IWU (or to a different port in the same IWU) that the PPP negotiated parameters and the state for a call which is currently going dormant can be used to make the **new PPP connection,** without repeating the lengthy PPP negotiations.

(Col. 2 lines 14-20.) (emphasis added.) Similarly, the specification also states:

When a **new PPP circuit** is established from the mobile device, via the new base station, to the network access server, the network access server/IWU would go through the PPP protocol negotiation procedure in accordance with the prior art approach. In **our invention,** however, the PPP state from the dormant PPP session (i.e., no active data transfer but the PPP session is still active) is switched over to the **new, active PPP session,** without requiring re-negotiation of the PPP parameters. *Moreover, the switching of PPP state can occur without the mobile communications device having to disconnect and reconnect its PPP session.*

(Col. 2 lines 23-34.) (emphasis added.) This reference to "our invention" as involving a new PPP session is particularly telling as a limitation of the invention. *See* Alloc, Inc. v. International Trade Commission, 342 F.3d 1361, 1368-69 (Fed.Cir.2003) (Specification description of "the invention" referred to the invention as a whole, not merely a preferred embodiment.) Nonetheless, UTStarcom argues that the last two lines of the quoted section shows that the patent involves only one PPP session. The reference in the line immediately prior the new, active PPP session, however, belies this argument.

Similarly, UTStarcom also quotes:

The invention is especially useful in wireless networks .... the PPP state from **the dormant session** can be used in the **new session** without the user having to renegotiate the PPP protocols.

(Col. 2 lines 40, 49-51) (emphasis added). The specification's very next words (albeit in a new paragraph) again show two PPP sessions:

An object of the invention is to provide a method to allow a PPP session to go dormant and then dial back into a different port on the same network access server without needing to go through the standard LCP and NCP negotiations to bring the **new PPP session** active.

(Col. 2 lines 52-57) (emphasis added.)

The Summary of Invention section also contains insight into the second session:

Rather than re-negotiate the PPP protocols (LCP and NCP) for the new session, the PPP state is switched from the dormant PPP session associated with the first port to the session associated with the second port in the network access server. Thus, the PPP state is transferred to **the PPP session** associated with the new call set-up message and the negotiation of link control protocols or network control protocols between the device and the network access server may be avoided.

(Col. 3 lines 33-41) (emphasis added.) Thus, the summary of the invention specifically limits the second session to a PPP session. C.R. Bard. Inc. v. United States Surgical Corp., 388 F.3d 858, 864 (Fed.Cir.2004) ("Statements that describe the invention as a whole are more likely to be found in certain sections of the specification, such as the Summary of the Invention.")

The specification also provides:

When the device comes into range of radio tower 18B, **a new PPP link** is established between the device 14, tower 18B and a second port in the network access server 24A in accordance with a preferred embodiment of this invention .... *Rather than renegotiate the PPP, LCP and NCP protocols, the present invention takes advantage of the fact that the PPP state for the dormant session can be switched to the new session associated with new call set-up message received at the second port.*

(Col. 7 lines 14-26) (emphasis added.) UTStarcom quotes the portion in italics and argues that the "new session" is not specifically designated as a PPP session. However, the use of the phrase "a new PPP link" in the same paragraph shows that, in context, two PPP sessions are contemplated.

Finally, UTStarcom quotes the abstract on the cover of the patent as evidence that only one PPP session is contemplated.

The network access server does not get rid of the PPP state for the dormant session, but rather switches that PPP state to a **new session,** such as when the client moves into range of a different radio tower and associated base station and initiates **a new active session** on the interface to the wireless network.

(abstract, p. 1)

UTStarcom argues that, because PPP is not used to modify the "new session" or the "new active session," the new session is not a PPP session. However, the abstract describes switching PPP state to the "new session" and a person of ordinary skill would understand that a PPP session is the only type of session to have any use for a PPP state. (Ennis Decl. para. 7.) Additionally, the specification describes transfer of PPP state to a new PPP session multiple times. (Col. 2 lines 19, 30, 57; Col. 3 lines 37-38; Col. 7 line 15). Thus, the reference to a new session, when considered in context, refers to a new PPP session.

Moreover, the abstract refers to the "dormant session" not the "dormant PPP session." Thus, the modifier PPP is not always used for either the first or second session. Indeed, the specification refers to the first session multiple times without using the modifier PPP. (See Col. 2 lines 47-49 ("the session goes dormant ... PPP state from the dormant session"), Col. 7 lines 31-32 ("the first session becomes dormant")). Thus the failure to use PPP as a modifier in every instance in which the specification refers to the second session does not indicate the second session is not a PPP session. Looking at the specification as a whole, the intent that the second session be a PPP session is clear and the failure to recite PPP before session every time does not mean that the specification discloses a second non-PPP session. C.R. Bard, Inc. v. United States Surgical Corp., 388 F.3d 858, 865-66 (Fed.Cir.2004.)

b. UTStarcom's proposed reconciliation of patent specification references to two PPP sessions with the second session not being a PPP session

UTStarcom argues that the specification's references to a second PPP session are "fully consistent with UTStarcom's interpretation-because the user ultimately will be using PPP to continue accessing the Internet after the user moves." (Reply at 6:16-17.) According to UTStarcom, "The second 'session' of the claims is the session initiated after movement, but before any PPP state transfer." (Reply at n. 5) UTStarcom then argues that, because the second session cannot be a PPP session until PPP state is either negotiated or switched, the second session is something other than a PPP session. UTStarcom notes that: "When the PPP is switched, the mobile user enjoys 'continuous, uninterrupted access' using the same PPP state." (Reply at 6:20-21.) Finally, UTStarcom argues that the access to the internet is via the original PPP session, because PPP is not renegotiated.

This attempted reconciliation fails to explain: 1) what happens to the second session after PPP state is transferred to it; 2) why the second PPP session referenced in the specification is not the second session referenced in the claims; and 3) how access to the internet is accomplished through the first PPP session. UTStarcom's only support appears to be the argument that the maintenance of PPP state mandates the continuation of the original PPP session. As discussed above, maintenance of PPP state does not mandate the continuation of a single PPP session. Additionally, the specification does not support the argument that the second session is not a PPP session and internet access continues via the first PPP session. If UTStarcom were correct, the specification would state that PPP state is transferred to the new "session", allowing the user to access the internet via the first PPP session. Instead, it states:

In our invention, however, the PPP state from the dormant PPP session (i.e., no active data transfer but the PPP session is still active) is switched over to the **new, active PPP session,** without requiring re-negotiation of the PPP parameters.

(Col. 2 lines 27-31) (emphasis added.) Moreover, the specification describes a second PPP session in multiple places (Col. 2 lines 14-31, 52-57; Col. 3 lines 33-41; Col. 7 lines 14-17), but never describes UTStarcom's second claim session-a session of undetermined type (but not a PPP session), existing only prior to transfer of PPP state, and disappearing without further mention.

3. *The Prosecution History*

On October 25, 2002, during prosecution of the application that became the ' 671 patent, UTStarcom submitted a response to the United States Patent and Trademark Office in an effort to overcome prior art rejections. The examiner had rejected claims 1-10 as obvious in light of U.S. Patent Nos. 6,421,714 ("Rai")

and 6,400,712 ("Phillips," Perkins PI Decl. Exh. D.) In arguing that the rejection of claim one was improper, UTStarcom described claim 1 as follows:

In the method of claim 1, a PPP session is established between the device and a first port of a network access server (NAS), which then becomes dormant. Subsequently, a new set-up message associated with the device is received on a second port of the NAS. The dormant PPP session is then transferred to a **PPP session** associated with the second port, avoiding the negotiation of link control protocols.

(Response, Perkins PI Decl. Ex. C. at 2-3). Thus, in order to obtain the patent, UTStarcom specifically described claim 1 as having a second session that is a PPP session. Microsoft v. Multi-Tech Sys. Inc., 357 F.3d 1340, 1349 (Fed.Cir.2004.) (Binding patentee to summary of invention provided as preface to response to rejection for obviousness.)

UTStarcom claims that the prosecution history supports its construction and cites to the same document as Starent. UTStarcom points to two sections of the response wherein the second session is described without the modifier PPP. (Response at 6, 7.) The first reference asserts that the Rai patent does not disclose switching that dormant PPP session to **a session** associated with a new call set-up message associated with a communications device at a second port of the network access server." (*Id*. at 6.) (emphasis added.) The second reference states that the combination of the Phillips and Rai patents does not include "switching PPP state from a dormant PPP session associated with a communications device and a first port in a NAS to **a session** associated with a new call set-up message associated with the communications device at a second port in the NAS." (*Id*. at 7) (emphasis added.) There is nothing, however, in these passages that indicates that the second session is not a PPP session. In light of the earlier statement that the invention included transfer to a "PPP session associated with the second port," the prosecution history supports Starent's construction that the second session is a PPP session.

4. ***The Court Construction***

In short, UTStarcom's argument that a session is not a PPP session asks the court to impermissibly interpret the term in a vacuum. Slimfold Mfg. Co v. Kinkead Indus, Inc., 810 F.2d 1113, 1116 (Fed.Cir.1987). At the hearing, the Court asked UTStarcom what the session is, if not a PPP session. UTStarcom responded:

It's a session which is-it could be different things in different technologies. It could be a preexisting-we've talked about the R-P sessions, but generally the reason we've defined "session" broadly is it's a communications pathway.

(CC Hearing Tr. at 47:15-22.). Thus, UTStarcom asks this court to do exactly what the Federal Circuit recently cautioned against, to start with the broadest definition possible, without reference to the context of the patent. Phillips v. AWH Corp., 415 F.3d 1303, 2005 WL 1620331 at *13-15 (Fed.Cir. July 12, 2005) (en banc). Accordingly, the Court construes "session" to be "a PPP session."

IV. CONCLUSION

For the foregoing reasons, It Is hereby Ordered that:

1. The court construes "port" as "a defined physical or logical connection where data enters or leaves a network device"

2. The Court construes "dormant" as "no active data transfer for a predetermined period of time allowing reallocation of resources, but from which active data transfer can resume more efficiently than it could from an inactive state"

3. The Court construes "dormant PPP Session" as "a PPP session in a dormant state"

4. The Court construes "switching" and "transferring" as "shifting or reassociating PPP state to another session associated with the new call set-up message" and

5. The Court construes "session" to be "a PPP session."

IT IS SO ORDERED.

N.D.Cal.,2005.
UTStarcom, Inc. v. Starent Networks Corp.

Produced by Sans Paper, LLC.