

United States District Court,
E.D. Texas, Marshall Division.

QPSX DEVELOPMENTS PTY LTD,

v.

JUNIPER NETWORKS.

Civil Action No. 2:05-CV-268

Jan. 10, 2007.

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MEMORANDUM OPINION AND ORDER

T. JOHN WARD, United States District Judge.

I. Introduction

This opinion resolves the parties' claim construction disputes. Plaintiff QPSX Developments 5 Pty Ltd. ("QPSX") accuses Juniper Networks, Inc., Nortel Networks, Inc., Lucent Technologies, Inc., Cisco Systems, Inc., and Alcatel USA, Inc. of infringing United States Patent No. 5,689,499 ("the '499 patent") entitled "Method and Apparatus for Managing the Statistical Multiplexing of Data in Digital Communication Networks." The asserted claims are claims 1-3 and 11-13 of the '499 patent.

II. Background of the Technology

The '499 patent describes a method for the transfer of information through switches within an Asynchronous Transfer Mode ("ATM") network. ATM is a connection oriented technology where a connection is first established between two endpoints before the exchange of data actually begins. ATM is also a network protocol that defines how information in fixed-sized segments called "cells" is handled and transferred within the network. An ATM cell contains 53 bytes—a 5 byte header and a 48 byte payload, which contains the actual information. A set of cells make up a frame or packet of data.

A connection between the source and the destination must be established in order to transfer information across an ATM network. This connection is called a "virtual connection," which is established over existing physical structures, such as telephone cables or fiber optic cables. The "virtual connection" can be characterized in terms of a "virtual path" (VP) and a "virtual channel" (VC). The actual physical structure, sometimes called a transmission path, may contain several virtual paths. In turn, one virtual path may consist of a group of virtual channels.

Each virtual path is assigned a unique Virtual Path Identifier ("VPI"). Each virtual channel is assigned a unique Virtual Channel Identifier ("VCI"). Each cell's header contains a VPI and a VCI which indicates to the ATM switch the VP and VC to which the cell belongs.

An ATM switch typically has multiple input and output ports. Switching occurs at both the VP and the VC levels. The ATM switch reads and updates the VPI and/or VCI label of a cell entering an input port before transferring that cell to the appropriate output port. This takes time and can cause congestion when many cells enter the ATM switch. Therefore, a buffer is used to help relieve the congestion by temporarily storing cells. However, buffers have a limit on how much they can store. If that limit is reached, then the buffer will overflow. As a result, cells are lost and data corruption results.

The '499 patent provides, among other things, a method for detecting the threat of buffer overflow and discarding entire frames or packets, instead of individual cells. When the threat of buffer overflow is detected, cells are not allowed through the device unless at least one cell from that same frame has already entered the buffer. As a result, an entire frame is discarded if none of its cells have entered the buffer. By discarding an entire frame, only that frame would need to be re-transmitted. In comparison, discarding individual cells would result in the corruption of multiple frames, and would require the retransmission of all of those corrupted frames.

III. General Principles Governing Claim Construction

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed.Cir.1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed.Cir.1995) (en banc), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. Under the patent law, the specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. A patent's claims must be read in view of the specification, of which they are a part. *Id.* For

claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed.Cir.2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee's claims. Otherwise, there would be no need for claims. *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed.Cir.1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics*, 952 F.2d 1384, 1388 (Fed.Cir.1992). And, although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed.Cir.1994).

This court's claim construction decision must be informed by the Federal Circuit's decision in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed.Cir.2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the *claims* of a patent define the invention to which the patentee is entitled the right to exclude." *Id.* at 1312 (emphasis added) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed.Cir.2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e. as of the effective filing date of the patent application." *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention. The patent is addressed to and intended to be read by others skilled in the particular art. *Id.*

The primacy of claim terms notwithstanding, *Phillips* made clear that "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims." *Bates v. Coe*, 98 U.S. 31, 38, 25 L.Ed. 68 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed.Cir.1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. The prosecution history helps to demonstrate how the inventor and the PTO understood the patent. *Phillips*, 415 F.3d at

1317. Because the file history, however, "represents an ongoing negotiation between the PTO and the applicant," it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence. That evidence is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims.

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed.Cir.2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Id.* at 1319-24. The approach suggested by *Tex. Digital*-the assignment of a limited role to the specification-was rejected as inconsistent with decisions holding the specification to be the best guide to the meaning of a disputed term. *Id.* at 1320-21. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of "focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of the claim terms within the context of the patent." *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.* What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* The definitions found in dictionaries, however, often flow from the editors' objective of assembling all of the possible definitions for a word. *Id.* at 1321-22.

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

IV. Terms in Dispute

The court will now address the disputed terms in the '499 patent. Claim 1 of the '499 patent is an independent method claim. It provides:

A method for supporting a plurality of virtual channel connections within a single virtual path in a digital communications network operating in the Asynchronous Transfer Mode (ATM), where said virtual channel connections have no guarantees of rate at which cells on that connection can be transmitted, but also have no constraint on said rate save that inherent on said virtual path connection, said method comprising the steps of:

storing cells arriving for transmission on said virtual path in a buffer for transmission of cells on said virtual path in conformance with said constraint on said rate;

detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on said virtual path; and,

while buffer overflow is threatened, admitting for storage in said buffer cells only on such of said virtual

channel connections on which the previous cell admitted was not indicated by the header of said previous cell as being end of transmission on said virtual channel; and,

at all times not admit for storage in said buffer any cells on said virtual channel connections for which since the previous indication of said end of transmission on said virtual channel connection there has been any rejection of cells for storage.

'499 patent, claim 1.

Claim 11 is an independent apparatus claim. It provides:

An apparatus for supporting a plurality of virtual channel connections within a single virtual path in a digital communications network operating in the Asynchronous Transfer Mode (ATM), where said virtual channel connections have no guarantees of rate of which cells on that connection can be transmitted, but also have no constraint on said rate save that inherent on said virtual path connection, where said constraint on said virtual path connection is in terms of a specified shortest allowed time interval between successive cells on said virtual path, said apparatus comprising:

means for storing cells arriving for transmission on said virtual path in a buffer for transmission of cells on said virtual path in conformance with said constraint on said rate;

means for detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on said virtual path; and,

means for admitting for storage in said buffer while buffer overflow is threatened cells only on such of said virtual channel connections on which the previous cell admitted was not indicated by the header of said previous cell as being the end of transmission on said virtual channel, and wherein said admitting means at all times does not admit for storage in said buffer any cells on said virtual channel connections for which since the previous indication of said end of transmission on said virtual channel connection there has been any rejection of cells for storage.

'499 patent, claim 11.

A. Agreed Constructions

The parties have stipulated to the construction of the following terms in the asserted claims:

1. "Virtual Channel Connection" means "logical connection characterized by the unidirectional flow of ATM cells, each cell containing a unique combination of virtual channel identifier ("VCI") and virtual path identifier ("VPI") for a given link in the connection."
2. "Virtual Path Connection" means "logical connection for aggregating VCCs having ATM cells containing a unique VPI for a given link in the connection."
3. "Cells" means "fixed size segments of information used in an ATM network, each having a header field (containing a VCI, a VPI, and an end of frame indicator) and a payload field."

4. "Buffer" means "physical device for storage of data, or a logical division thereof."

B. Disputed Constructions

1. Preambles as Limitations in Claims 1 and 11

One of the principal issues in this case is whether the preambles of Claims 1 and 11 limit the claims and, if so, to what extent. "[W]hether to treat a preamble as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent." *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed.Cir.2006) (*quoting* *Storage Tech. Corp. v. Cisco Sys. Inc.*, 329 F.3d 823, 831 (Fed.Cir.2003)). When the preamble language provides antecedent basis for claim terms, cases have held that the preamble language limits the scope of the claims. *See* *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620 (Fed.Cir.1995); *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1340 (Fed.Cir.2003).

In the present case, the preamble acts as a limitation on the claims because it provides antecedent basis for the claim terms. The preamble refers to "a plurality of virtual channel connections within a single virtual path" and further describes "said virtual channel connections" as those which "have no guarantees of rate at which cells on that connection can be transmitted, but also have no constraint on said rate save that inherent on the virtual path connection." The claim language recites "*said* virtual channel connections" and, in doing so, incorporates the specific virtual channel connections described in the preamble. The plaintiff's argument that the various limitations contained in the preamble are statements of intended use is not persuasive. Accordingly, the preamble limits the scope of claims 1 and 11.

a. "where said virtual channel connections have no guarantees of rate at which cells on that connection can be transmitted"

This phrase appears in the preamble of claims 1 and 11. The plaintiff proposes that this phrase is a non-limiting statement of intended use and is not a limitation on the VCC. To the contrary, the court has held that the preamble acts as a limitation and this statement describes a particular type of virtual channel connection that is incorporated into the claims. The court further concludes that no additional construction of this phrase is required.

b. "but also have no constraint on said rate save that inherent on said virtual path connection"

Again, the plaintiff proposes that this phrase is a non-limiting statement of intended use. The court rejects that position and holds that this phrase describes the particular type of VCC described in the claim language. The defendants urge additionally that the rate inherent on the virtual path connection should be construed to mean the limitation allocated by the user/network traffic contract. This argument is rejected. Read in the context of the specification, the term "inherent" is broad enough to include the physical capacity of the VPC.

2. "storing cells arriving for transmission on said virtual path in a buffer for transmission of cells on said virtual path in conformance with said constraint on said rate"

The plaintiff contends that no construction is needed because all the technical terms ("buffer," "cells," and "virtual path") have agreed definitions. The defendants seek a two-part construction for the first limitation of Claim 1.

For the first part, the defendants propose "storing cells arriving for transmission on the VPC in the buffer for that VPC." The dispute is whether a specific buffer is required for each virtual path. The court agrees with the plaintiff that the plain language of the claim requires "a buffer," and not "a buffer for that VPC." Accordingly, the court rejects the defendants' attempt to limit this claim element.

For the second part, the defendants propose that the phrase "when in accordance with said constraint on said rate" modifies, and thus limits, the word "storing," as opposed to the word "transmission." The plaintiff contends that the syntax of the claim language requires the phrase to modify "transmission" and not "storing." Given the claim language, the plaintiff has the better argument. The limitation requires that cells arriving for transmission on the virtual path are stored in a buffer "for transmission of cells on said virtual path in conformance with said constraint on said rate." In the context of the patent, the word "rate" suggests a transmission rate, not a storage rate. As a result, the court holds that the rate constraint portion of this phrase modifies "transmission" as opposed to "storing."

3. "buffer overflow/buffer overload"

The second limitation of claim 1 of the '499 patent requires "detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on said virtual path." The term "buffer overflow" is used in claim 1, and the term "buffer overload" is used in various dependent claims. The parties agree that the terms mean the same thing. The plaintiff argues that these terms are common and therefore there is no need to construe them. The defendants propose that the term means "exceeding the maximum capacity of the buffer for that VPC." The court has previously rejected the defendants' argument that the buffer be assigned to a particular VPC. The court agrees with the plaintiff that the terms "buffer overflow" and "buffer overload" need no additional construction, in light of the agreed construction of "buffer."

4. "detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on said virtual path"

The plaintiff contends that no construction is needed because all the technical terms ("buffer," "cells," and "virtual path") have agreed definitions. In the alternative, the plaintiff proposes that the phrase, as a whole, means "detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on the virtual path." Defendants have proposed three different constructions, set forth below.

a. Nortel, Lucent, and Alcatel's construction

Defendants Nortel, Lucent, and Alcatel propose that the phrase means "detecting whether the storage of arriving cells would exceed a selected level of occupancy less than the maximum capacity of the buffer for that VPC." The court has previously rejected the argument that the claim limitation should be construed to require a "buffer for that VPC." With respect to the remaining portions of the definition proposed by these defendants, the plaintiff argues that limiting the claim to detecting "a selected level of occupancy less than the maximum capacity" is too restrictive because the specification allows for detecting 1) whether a ceiling has been exceeded, and 2) whether the number of unoccupied locations has fallen beneath a floor. The plaintiff also invokes the doctrine of claim differentiation, urging that because dependent claims 2 and 3 describe assessing the number of unoccupied locations falling below a threshold, the court should construe claim 1 broadly enough to cover the situation of falling below a floor.

b. Cisco's construction

Defendant Cisco proposes that the phrase means "determining whether the storage of cells arriving on the specified VPC might cause the buffer to exceed its maximum storage capacity." Cisco contends that this construction applies the ordinary meaning of "threatened," which means that a possible future adverse event is likely to occur. In addition, Cisco contends that this limitation requires an assessment of whether the buffer for that virtual path is likely to overflow.

The plaintiff argues that Cisco is rewriting "detecting" with "determining." According to the plaintiff, there is no ambiguity in the claim that would necessitate a rewriting. Furthermore, the plaintiff argues that Cisco's construction improperly adds a limitation about the connection on which the cells arrive, i.e., "the specified VPC." The plaintiff contends that there is no basis for adding this requirement.

c. Juniper's construction

Finally, Juniper suggests that the claim limitation means "detecting whether the storage of arriving cells would exceed a selected level of occupancy less than the maximum capacity of the buffer storage for that virtual path whereby the level is selected to allow for storage sufficient to accommodate the continuation of frames that have cells which were already stored in the buffer at the time the threshold is exceeded." Juniper argues that the threat of buffer overflow cannot simply be indicated by an arbitrary threshold below the maximum capacity of the buffer, but sufficient space must be available to admit cells from a frame already admitted into the buffer.

In response, the plaintiff argues that the attempt to tie buffer storage to a particular VPC and restricting the detection to a "ceiling" is improper. Furthermore, the plaintiff argues that Juniper is attempting to limit the claim unnecessarily with language from the specification. *See* '499 Patent, 9:26-29.

d. Conclusion

The court has previously rejected the defendants' attempt to limit the claim language to a buffer assigned to a particular VPC. In light of the parties' constructions of the technical terms, the court concludes that no additional construction of this phrase is appropriate. In doing so, the court rejects the defendants' efforts to restrict the "detecting" step to a particular manner of detecting, such as detecting "a selected level of occupancy less than the maximum capacity." As the plaintiff observes, dependent claims 2 and 3 call out additional limitations that restrict the manner in which the detecting step must be performed.

5. "while buffer overflow is threatened, admitting for storage in said buffer cells only on such of said virtual channel connections on which the previous cell admitted was not indicated by the header of said previous cell as being end of transmission on said virtual channel"

The plaintiff contends that no construction is needed because the technical terms ("virtual channel," "cells," "buffer," "header" (appears in the agreed definition of "cells"), and "end of transmission" (synonymous with "end of frame indicator")) have been defined, and the other terms need no further construction. In the alternative, the plaintiff proposes "while buffer overflow is threatened, admitting for storage in the buffer cells only on such of the virtual channel connections on which the previous cell admitted was not indicated by the header of the previous cell as being end of transmission on the virtual channel." The defendants propose "while buffer overflow is threatened, storing cells from each VCC in the buffer when the previous cell stored in the buffer for that VCC did not contain an end-of-frame designation, and rejecting all other cells." After considering the parties' submissions, the court agrees with the plaintiff that no additional

construction of this phrase is warranted.

6. "at all times not admit for storage in said buffer any cells on said virtual channel connections for which since the previous indication of said end of transmission on said virtual channel connection there has been any rejection of cells for storage"

The plaintiff again argues that all of the agreed technical terms have been defined; therefore, no further construction is needed. In the alternative, the plaintiff argues that the phrase as a whole means "whether or not buffer overflow is threatened, not admit for storage in the buffer any cells on the virtual channel connection for which since the previous indication of the end of transmission on the virtual channel connection there has been any rejection of cells for storage." Under the plaintiff's construction, the cell rejection that occurs as a result of the fourth step of the method is tied to and follows the rejection of the first cell of a frame in a threatened buffer overflow situation following the admission of an end-of-transmission cell, as specified by the third step of the method. As a result, under the plaintiff's proposed construction, the only cell rejection required by the fourth step is the rejection of the remaining cells in a frame whose first cell was not admitted under the threat of buffer overflow as a result of the third step.

The defendants propose that the phrase as a whole means "at all times, if there has been any rejection of cells on a VCC since receipt of a cell on that VCC that contains an end-of-frame designation, reject all cells arriving on that VCC for storage in the buffer." Under the defendants' construction, the terms "at all times" and "any rejection of cells" language operates to include not only the rejection of cells because of threatened buffer overflow, but also the rejection of cells for violation of the preferred embodiment's "pre-storage scheduling check." The defendants point to Figure 9 and observe that Figure 9 describes a second method for rejecting cells, based on the pre-storage scheduling check. *See* Fig. 9, Step 110.

In addition, the defendants argue that the "said end of transmission" language cannot refer to the same "end of transmission" indication called out by step 3. If this were the case, then once a cell on a VC has been rejected after the admission of an end-of-transmission cell, all subsequent cells must also be rejected, thus shutting down that VC. According to the defendants, this would render the claim indefinite or useless.

The claim language at issue is not a model of clarity; nevertheless, the court disagrees that the claim is indefinite and incapable of construction. The court construes this limitation to mean "at all times, if there has been any rejection of cells on a virtual channel connection since the receipt of a cell on that virtual channel connection that contains an end of transmission indication, not admit any cells arriving on the virtual channel connection for storage in said buffer. Despite the plaintiff's arguments to the contrary, the language "at all times" and "any rejection" are broad terms that suggest that the claim limitation encompasses rejections for reasons unrelated to buffer overflow. As a consequence, the court rejects the plaintiff's alternative construction that "at all times" means "whether or not buffer overflow is threatened."

7. Means-plus-function issues

There is no dispute that the three elements of Claim 11 are means-plus-function limitations. 35 U.S.C. s. 112 para. 6. The parties dispute the identification and construction of the claimed functions as well as the corresponding structure.

a. "means for storing cells arriving for transmission on said virtual path in a buffer for transmission of cells on said virtual path in conformance with said constraint on said rate"

(1) Function

The plaintiff construes the function to mean "storing cells arriving for transmission on the virtual path in a buffer." The plaintiff argues that the words following "buffer" describe an intended purpose and, therefore, should not be part of the function. According to the plaintiff, the "storing" function is accomplished when the arriving cells are stored in a buffer. The defendants urge that this would be an improper deletion of claim language.

Alternatively, the plaintiff proposes that the function means "storing cells arriving for transmission on the virtual path in a buffer for transmission of cells on the virtual path in conformance with the rate constraint inherent on the virtual path." The defendants contend that the court should describe the function as "storing cells arriving for transmission on said virtual path in a buffer for transmission of cells on said virtual path in conformance with said constraint on said rate." The defendants' construction accurately recites the function required by the claim language, and the court adopts it.

(2) Corresponding Structure

The parties also dispute what structure corresponds to the function. The plaintiff contends that the corresponding structure is the Admission and Write Controller (AWC) 68 performing: Read VPI, VCI of step 106 of Figure 9, Fetch C_ Addr from Addr_Res of step 120 of Figure 9, and step 122 of Figure 9. The defendants contend that the corresponding structure is the Admission and Write Controller 68 performing steps 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132 in Figure 9 and steps 205, 207 in Figure 10A; Delay 72, Mux 74; Schedule & Read Controller 70 performing steps 224, 226, 228, 230, 232, 233 in Figure 11; 9:1-10:17; 10:39-52; 11:26-12:12; Figure 8.

The plaintiff argues that the defendants' identification of structure includes more functions, such as detecting buffer overflow at step 110, than what is claimed by this storing element. Under the plaintiff's argument, other limitations of claim 11 cover those additional functions. In addition, the plaintiff argues that Delay 72 and Mux 74 merely enable storing but do not actually perform the storing function. As a result, the plaintiff contends that these items are not part of the corresponding structure. Finally, the plaintiff argues that the Schedule and Read Controller performs steps that involve cells that have already been stored. Therefore, the plaintiff argues that the defendants' proposal would be the same as rewriting and expanding the claim element.

After considering the positions of the parties, the court largely agrees with the plaintiff. The court concludes that the corresponding structure includes the Admission and Write Controller (AWC) 68 performing step 106 of Figure 9, step 120 of Figure 9, and step 122 of Figure 9. In addition, the corresponding structure includes Mux 74, because it is included in Figure 8 as part of the means for storing.

b. "means for detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on said virtual path"

(1) Function

The court construes this phrase to mean "detecting whether buffer overflow is threatened by the storage of further cells arriving for transmission on said virtual path."

(2) Corresponding Structure

The defendants contend that there is no corresponding structure and therefore claims 11-13 are indefinite. According to the defendants, the patent discloses only the use of a buffer threshold, but the threshold does not perform a detecting function. The threshold only triggers the discarding algorithm; it does not detect whether there is any threat of actual buffer overflow. The defendants further argue that the patent does not disclose any other structure that can be used to detect whether buffer overflow is threatened.

Alternatively, the defendants propose that the corresponding structure is the Admission and Write Controller (AWC) 68 performing: steps 110 and 120 of Figure 9, and steps 204, 206 and 208 of Figure 10; 9:29-34; 9:47-64; 10:27-38. The plaintiff proposes that the corresponding structure is the Admission and Write Controller (AWC) 68 performing: Compare Res with Limit of step 110 of Figure 9, Update Res after Write to Buffer of step 120 of Figure 9, and Update Res after Read from Buffer of steps 204/208 of Figure 10.

The dispute centers around whether Step 206 of Figure 10 is included in the corresponding structure. Step 206 involves the updating of the address reserve list, which is the list of available addresses in the buffer. The plaintiff argues that this updating is the result of the detecting function, but not part of it. The defendants argue that adding the address to the reserve list is necessary for determining whether buffer overflow is threatened. In addition, the defendants argue that the specification does not disclose an AWC that does not perform these steps. The court agrees with the defendants that the updating step is properly included as corresponding structure. Accordingly, the court concludes that the corresponding structure is the Admission and Write Controller (AWC) 68 performing steps 110 and 120 of Figure 9, and steps 204, 206 and 208 of Figure 10.

c. "means for admitting for storage in said buffer while buffer overflow is threatened cells only on such of said virtual channel connections on which the previous cell admitted was not indicated by the header of said previous cell as being the end of transmission on said virtual channel, and wherein said admitting means at all times does not admit for storage in said buffer any cells on said virtual channel connections for which since the previous indication of said end of transmission on said virtual channel connection there has been any rejection of cells for storage"

(1) Function

The court construes the recited function to mean "admitting for storage in said buffer while buffer overflow is threatened cells only on such of said virtual channel connections on which the previous cell admitted was not indicated by the header of said previous cell as being the end of transmission on said virtual channel, and wherein said admitting means at all times, if there has been any rejection of cells on a virtual channel connection since receipt of a cell on that virtual channel connection that contains an end of transmission indication, does not admit any cells arriving on the VCC for storage in said buffer."

(2) Corresponding Structure

The plaintiff proposes that the corresponding structure is the Admission and Write Controller (AWC) 68 performing: Read VPI, VCI, and Frame Delineation Indicator of step 106 of Figure 9 Compare Res with Limit of step 110 of Figure 9, steps 108, 112, 114, 116, 118, 126, 128 and 130 of Figure 9. The defendants propose that the corresponding structure is the Admission and Write Controller 68 performing steps 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128 and 130 in Fig. 9; Delay 72; and Mux 74.

After considering the parties' positions, the court identifies the corresponding structure as the AWC 68 performing steps 106, 108, 110, 112, 114, 116, 118, 126, 128, and 130 of Fig. 9, together with the Delay 72

and Mux 74, both of which are found to be necessary to perform the recited function.

V. Conclusion

The court adopts the constructions set forth in this opinion for the disputed terms in the '499 patent. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the court.

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QPSX Developments 5 Pty Ltd. v. Juniper Networks

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