United States District Court,
W.D. Wisconsin.

EXTREME NETWORKS, INC,
Plaintiff and Counter Defendant.
v.
ENTERASYS NETWORKS, INC,
Defendant and Counter Plaintiff.

No. 07-C-229-C

Nov. 21, 2007.

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OPINION AND ORDER

BARBARA B. CRABB**, District Judge.**

This patent infringement suit is before the court for claim construction, which requires the court to get inside the mind of the ever-elusive "person of ordinary skill in the art." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed.Cir.2005). Plaintiff Extreme Networks, Inc. owns three closely related patents for "managing, monitoring and prioritizing traffic within a network": U.S. Patent Nos. 6,104,700; 6,678,248; and 6,859,438. Plaintiff contends that defendant Enterasys Networks, Inc. has infringed each of these patents.

Not too surprisingly, defendant was not one to take things lying down. It has filed counterclaims against plaintiff, asserting infringement of three other computer-related patents: U.S. Patent Nos. 6,041,042; 5,195,181; and 5,430,727.

Having reviewed the parties' eight briefs (totaling 324 pages) and considered the parties' arguments and presentation materials at the claim construction hearing, I conclude that the parties have failed to show that the following terms would benefit from their proposed constructions: current network performance, message

receiving processor, message transmitting processor, first module, second module, local area network, user data packets, port, ingress device, egress device, mirror-from-port, encapsulating and means for transmitting the encapsulated MAC frame packets to the remotely located device in the network. The terms in dispute are construed below.

OPINION

I. EXTREME'S PATENTS

The parties seek construction for the following terms: quality of service, minimum QoS, minimum bandwidth and current bandwidth metric. Many of these terms appear in more than one patent, but the parties agree that the terms have the same meaning in each of the patents plaintiff is asserting in this case. (Each patent shares the same specification.) The inventions relate to prioritizing traffic within a computer network. In other words, the inventions determine when and where different kinds of information are sent in order to maximize network performance.

The language of each of the asserted claims is set forth below. Disputed terms are in bold.

'700 Patent**:**

10. A method of bandwidth management and traffic prioritization for use in a network of devices, the method comprising the steps of:
defining at a packet forwarding device information indicative of one or more traffic groups;

defining at the packet forwarding device information indicative of a **quality of service (QoS)** policy for at least one of the one or more traffic groups;

receiving a packet at a first port of a plurality of ports;

identifying a first traffic group of the one or more traffic groups with which the packet is associated;

providing a plurality of **QoS** queues;

mapping the first traffic group to a first **QoS** queue of the plurality of **QoS** queues; and

scheduling the packet for transmission from a second port of the plurality of ports based upon the **QoS** policy for the first traffic group, and wherein the scheduling is independent of end-to-end signaling; said scheduling including:

determining a **current bandwidth metric** for each of the plurality of **QoS** queues;

dividing the plurality of **QoS** queues into at least a first group and a second group based upon the **current bandwidth metrics** and a minimum bandwidth requirement associated with each of the plurality of **QoS** queues; and

if the first group includes at least one **QoS** queue, then transmitting a packet from the at least one **QoS** queue; otherwise transmitting a packet from a **QoS** queue associated with the second group.

13. A method of bandwidth management and traffic prioritization for use in a network of devices, the method comprising:

receiving at a packet forwarding device information indicative of one or more traffic groups, the information indicative of the one or more traffic groups including Internet Protocol (IP) subnet membership;

receiving at the packet forwarding device information defining a **quality of service (QoS)** policy for at least one of the one or more traffic groups, the **QoS** policy including at least a **minimum bandwidth;**

providing a plurality of queues at each of a plurality of output ports;

associating the one or more traffic groups with the plurality of queues based upon the **minimum bandwidth;** and

scheduling a packet for transmission from one of the plurality of queues onto the network.

14. A method of bandwidth management and traffic prioritization for use in a network of devices, the method comprising:

providing a plurality of **quality of service (QoS)** queues at each of a plurality of output ports, each of the plurality of **QoS** queues associated with a minimum queue bandwidth requirement;

adding a packet to one of the plurality of **QoS** queues based upon a traffic group with which the packet is associated; and

scheduling a next packet for transmission onto the network from one of the plurality of **QoS** queues at a particular output port of the plurality of output ports by:

determining a **current bandwidth metric** for each of the plurality of **QoS** queues,

dividing the plurality of **QoS** queues into at least a first group and a second group based upon the **current bandwidth metrics** and the minimum queue bandwidth requirements, and

if at least one **QoS** queue of the plurality of **QoS** queues, so divided, is associated with the first group, then transmitting a packet from the at least one **QoS** queue; otherwise transmitting a packet from a **QoS** queue of the plurality of **QoS** queues associated with the second group.

21. A packet forwarding device for use in a network employing a non-deterministic assess protocol, the packet forwarding device comprising:

a filtering and forwarding engine configured to forward received packets based upon a traffic group with which the packet is associated; and

a plurality of ports coupled to the filtering and forwarding engine, each port of the plurality of ports configured to receive packets from the filtering and forwarding engine, each port of the plurality of ports having a plurality of **Quality of Service (QoS)** queues associated with a **minimum queue bandwidth** requirement, each port of the plurality of ports further configured to schedule a packet for transmission onto

the network by determining a **current bandwidth metric** for each of the plurality of **QoS** queues,

dividing the plurality of **QoS** queues into at least a first group and a second group based upon the **current bandwidth metrics** and the **minimum queue bandwidth** requirements, and

if at least one **QoS** queue of the plurality of **QoS** queues, so divided, is associated with the first group, then transmitting a packet from the at least one **QoS** queue; otherwise transmitting a packet from a **QoS** queue of the plurality of **QoS** queues associated with the second group.

26. A method of bandwidth management and traffic prioritization for use in a network of devices, the method comprising:

receiving at a packet forwarding device information indicative of one or more traffic groups, the information indicative of the one or more traffic groups including a virtual local area network (VLAN) identifier;

receiving at the packet forwarding device information defining a **quality of service (QoS)** policy for at least one of the one or more traffic groups, the **QoS** policy including at least a **minimum bandwidth;**

providing a plurality of queues at each of a plurality of output ports;

associating the one or more traffic groups with the plurality of queues based upon the **minimum bandwidth;** and

scheduling a packet for transmission from one of the plurality of queues onto the network.

28. A machine-readable medium having stored thereon data representing sequences of instructions, said sequences of instructions which, when executed by a processor, cause said processor to:

define at a packet forwarding device information indicative of one or more traffic groups;

define at the packet forwarding device information indicative of a **quality of service (QoS)** policy for at least one of the one or more traffic groups;

receive a packet at a first port of a plurality of ports;

identify a first traffic group of the one or more traffic groups with which the packet is associated;

provide a plurality of **QoS** queues;

map the first traffic group to a first **QoS** queue of the plurality of **QoS** queues; and

schedule the packet for transmission from a second port of the plurality of ports based upon the **QoS** policy for the first traffic group, and wherein the scheduling is independent of end-to-end signaling; said scheduling including:

determining a **current bandwidth metric** for each of the plurality of **QoS** queues;

dividing the plurality of **QoS** queues into at least a first group and a second group based upon the **current bandwidth metrics** and a minimum bandwidth requirement associated with each of the plurality of **QoS** queues; and

if the first group includes at least one **QoS** queue, then transmitting a packet from the at least one **QoS** queue; otherwise transmitting a packet from a **QoS** queue associated with the second group.

29. A machine-readable medium having stored thereon data representing sequences of instructions, said sequences of instructions which, when executed by a processor, cause said processor to:

provide a plurality of **quality of service (QoS)** queues at each of a plurality of output ports, each of the plurality of **QoS** queues associated with a minimum queue bandwidth requirement;

add a packet to one of the plurality of **QoS** queues based upon a traffic group with which the packet is associated; and

schedule a next packet for transmission onto the network from one of the plurality of **QoS** queues at a particular output port of the plurality of output ports by:

determining a **current bandwidth metric** for each of the plurality of **QoS** queues,

dividing the plurality of **QoS** queues into at least a first group and a second group based upon the **current bandwidth metrics** and the minimum queue bandwidth requirements, and

if at least one **QoS** queue of the plurality of **QoS** queues, so divided, is associated with the first group, then transmitting a packet from the at least one **QoS** queue; otherwise transmitting a packet from a **QoS** queue of the plurality of **QoS** queues associated with the second group.

'248 Patent**:**

1. A method for bandwidth management in a packet forwarding device, comprising:
identifying a **quality of service (QoS)** metric corresponding to a traffic group, the **QoS** metric defining a minimum **QoS** for the traffic group;

receiving a data packet associated with the traffic group;

placing the data packet into one of a plurality of queues;

identifying a current measure of network performance with respect to parameters specified in the **QoS** metric; and

removing the data packet from the queue if a difference between the current measure and the **minimum QoS** falls within a threshold.

15. An article of manufacture comprising a machine accessible medium having content that when accessed provides instructions to cause an electronic system to:

identify a **quality of service (QoS)** metric corresponding to a traffic group, the QoS metric defining a **minimum QoS** for the traffic group;

receive a data packet associated with the traffic group;

place the data packet into one of a plurality of queues;

identify a current measure of network performance with respect to parameters specified in the QoS metric; and

remove the data packet from the queue if a difference between the current measure and the **minimum QoS** falls within a threshold.

'438 Patent**:**

1. A method of data communications, comprising:
receiving a data packet having classification information;

identifying a **Quality of Service (QoS)** to associate with the data packet based at least in part on the classification information;

placing the data packet in a **QoS** queue corresponding to the associated **QoS;** and

scheduling the data packet to be transmitted with other data packets from the **QoS** queue at or above a **minimum bandwidth** allocation corresponding to the associated **QoS.**

5. A network device comprising:

a receive port to receive a data packet having classification information;

a logic circuit to identify a **Quality of Service (QoS),** to associate with the data packet based at least in part on the classification information, and place the data packet in a **QoS** queue corresponding to the associated **QoS;** and

a scheduler to dequeue the data packet with other data packets from the **QoS** queue and allocated at least a **minimum bandwidth** corresponding to the associated **QoS** for transmission.

A. ***Quality of Service (claims 10, 13-14, 21, 26 and 28-29 of the*** '700 patent***, claims 1 and 15 of the*** '248 patent ***and claims 1 and 5 of the*** '438 patent)

Plaintiff's Proposed Construction: A quantifiable measure of service provided

Defendant's Proposed Construction: A quantifiable measure of service provided, the measure of the service being provided in terms of a packet loss rate, a maximum delay, a committed minimum bandwidth, or a limited maximum bandwidth.

The parties agree that this term can be defined in part as "a quantifiable measure of service provided,"

which is how it is defined in the specifications. *E.g.,* '700 pat., col. 3, lns. 39-41 (" 'Quality of Service' in this context essentially means that there is a quantifiable measure of the service being provided."). Although there is some tension in defining "quality" as "quantity," neither party takes issue with that part of the construction, making it unnecessary to consider that point further.

The only dispute is whether the ways in which "quality of service" may be measured are limited to those provided in defendant's proposed construction. Although those types of measurement are identified in the specification, they are identified as *examples* and not as a restricting definition. '700 pat., col. 3, lns. 42-44("The measure of service being provided may be in terms of a packet loss rate, a maximum delay, a committed minimum bandwidth, or a limited maximum bandwidth, *for example*.") (Emphasis added.) Because examples may not be read into the claims, In re Omeprazole Patent Litigation, 483 F.3d 1364, 1372 (Fed.Cir.2007), I must reject defendant's proposed construction and adopt plaintiff's: "a quantifiable measure of service provided."

B. *Minimum QoS (claims 1 and 15 of the* '248 patent)

Plaintiff's Construction: Minimum quantifiable measure of service provided

Defendant's Construction: This term is indefinite. In the alternative, "minimum bandwidth."

The parties agree that "minimum QoS" is equivalent to "minimum quality of service." Defendant argues inexplicably that this term cannot be construed, despite acknowledging that there is no difficulty in construing "quality of service." Defendant fails to explain how adding the word "minimum" makes the term so much more confusing.

Defendant's alternative construction of "minimum bandwidth" fares no better. To say that "minimum quality of service" means "minimum bandwidth" is to equate quality of service with bandwidth, but defendant conceded at the claim construction hearing that the terms were not interchangeable. Cl. Const. Tr., dkt. # 48, at 47. In looking for support for its construction, defendant again relies on parts of the specification that serve as examples only. I will adopt plaintiff's construction of this term: "minimum quantifiable measure of service provided."

C. *Minimum Bandwidth (claims 10, 13, 26 and 28 of the* '700 patent***; claim 5 of the*** '438 patent)

Plaintiff's Construction: Smallest amount of transmission capacity

Defendant's Construction: A minimum number of bits sent in a defined time period

The parties disagree about three issues: (1) whether bandwidth measures the capacity of data to be sent or the data actually sent; (2) whether the data must be measured in bits; and (3) whether a particular time period is at issue.

I agree with plaintiff that bandwidth measures what *can* be sent, not what *has* been sent. Even the dictionary definitions defendant cited at the claim construction hearing support this view. Each of those dictionaries defines "bandwidth" as "data transfer capacity" or data "that can be transmitted." Defendant cites no other intrinsic or extrinsic evidence suggesting that bandwidth is a backward looking measurement of data that already has been sent.

Defendant relies on the same dictionary definitions to support its contention that bandwidth must be measured in "bits per second." Although those definitions suggest that bandwidth is "usually" so measured, the patent is not so constrained. Rather, the patent specification says that bandwidth may be measured in bits per second "or any other convenient representation." '700 pat., col. 8, lns. 5-8.

However, I agree with defendant to the extent it argues that bandwidth is measuring *something*. Plaintiff's proposed construction says only that bandwidth is transmission capacity without identifying what is being transmitted. Because plaintiff admitted at the claim construction hearing that bandwidth is about data transfer, Cl. Const. Tr, dkt. # 48, at 18, I will add that to the construction.

The specification provides support for defendant's third suggested limitation: "Minimum bandwidth indicates the minimum amount of bandwidth a particular traffic group needs to be provided *over a defined time period*." '700 pat., col. 8, lns. 9-11. Because plaintiff failed to advance any argument either in its briefs or at the claim construction hearing that "minimum bandwidth" is not measured over a defined time period, I will adopt that part of defendant's proposed construction.

Accordingly, I construe "minimum bandwidth" to mean "smallest amount of data transmission capacity over a predefined period of time."

The parties dispute the constructions of "minimum queue bandwidth" and "minimum bandwidth allocation" as well, but these disputes mirror those with respect to "minimum bandwidth," so it is unnecessary to define these separately.

D. *Current Bandwidth Metric (claims 10,14, 28 and 29 of the* '700 patent)

Plaintiff's Construction: The present measurement of a moving average of transmission capacity

Defendant's Construction: The moving average over a preselected number of measuring time periods of the bandwidth achieved by a particular queue. The measuring time period is some preselected number of packets transmitted by all queues from the port

At the claim construction hearing, defendant withdrew its proposed limitation "achieved by a particular queue," Cl. Const. Tr., dkt. # 48, at 39, so I need not consider plaintiff's arguments that the limitation is improper. In addition, plaintiff said that it had "removed" the term "capacity" from its construction (without explaining why). Id. at 27. This still leaves several disputes.

The precise nature of the parties' remaining disputes is somewhat elusive with respect to this term because each party characterizes the disputes differently. For example, plaintiff says that defendant's construction omits any reference to "metric," which plaintiff addresses in its construction with the word "measurement." Plaintiff stated repeatedly at the claim construction hearing that it was adopting the ordinary meaning of "metric" even while acknowledging that the ordinary meaning of "metric" is not a "measurement" but a *standard* of measurement. (Neither side proposed a construction that reflected that understanding of "metric." Plaintiff came closest when it explained at the hearing that "you have to take a measurement of that ... moving average" in order to "compare that moving average to the minimum bandwidth as the claim contemplates." Cl. Constr. Tr., dkt. # 48, at 30.) In any event, it is nonsensical to speak of a "measurement" of an average; an average is not "measured" but calculated.

Although defendant recognized that the average is calculated, the construction it proposed does not simply replace "present measurement" with "present calculation" of the average. Apparently (defendant did not make the argument explicitly), defendant believes that "current" does not mean simply "present." Rather, defendant's construction assumes the relevant time is a "preselected number of measuring time periods." Defendant says it is taking this part of its construction from a portion of the specification that states "[t]he current bandwidth should not be mistaken for a bandwidth at an instant in time, rather the current bandwidth is a moving average that is updated periodically upon the expiration of a predetermined time period." '700 pat., col. 10, lns. 3-7.

There are number of problems with defendant's reliance on this passage. First, as plaintiff points out, this is a description of "current bandwidth," not "current bandwidth metric." Defendant never distinguishes these two terms but treats them as interchangeable. Second, the passage refers to a "predetermined time period" (singular) not a "preselected number of measuring time periods" (plural). Third, the passage addresses only how often the moving average is updated; it says nothing about the time interval for *calculating* the moving average.

Nevertheless, as plaintiff acknowledges in its brief, by its nature, an "average" must take into account some notion of time because it is the result of multiple figures. Even if the calculation is the "present" one, any construction must include the time period over which the average is calculated. Accordingly, I will adopt the following construction: "the present calculation of a moving average of bandwidth over a predetermined time period."

II. ENTERASYS PATENTS

A. '727 Patent

Invention: Combining a router and a bridge in a single device that acts as a bridge in certain circumstances to prevent messages from being discarded.

Asserted Claims:

1. A method of enabling user data packets to be forwarded from one local area network to another by a device which is capable of **acting as a router to recognize and forward to and from end systems user data packets which conform to a first protocol suite** and is capable of **acting as a bridge to recognize and forward between networks user data packets which conform to at least a second protocol suite,** said method comprising
for a user data packet which conforms to said first protocol suite and is addressed to a single address which is not an address of the device, causing the device to **act as a bridge rather than as a router.**

5. A device which is capable of **acting as a router to forward to and from end systems user data packets** and is capable of **acting as a bridge to forward between networks user data packets,** said device comprising

router circuitry causing said device to act as a router recognizing and forwarding user data packets conforming to a first protocol suite,

bridge circuitry causing said device to act as a bridge recognizing and forwarding user data packets conforming to at least a second protocol suite,

control circuitry causing said device to act as a bridge rather than as a router for a user data packet which conforms to said first protocol suite and is addressed to a single address which is not an address of the device.

7. The device of claim 6 wherein said router circuitry causes said device to **act as an IP router when forwarding IP packets.**

1. ***Acting as a router to recognize and forward to and from end systems user data packets which conform to a first protocol suite and acting as a bridge to recognize and forward between networks user data packets which conform to at least a second protocol suite (claim 1)***

Plaintiff's Construction:

-> *acting as a router ...:* This term is indefinite. Alternatively, it means the device must perform all the functions of a router, including when forwarding user data packets to and from end systems which conform to a first predefined protocol suite. The decision to act as a router depends on the device identifying the protocol suite of the user data packets.
-> *acting as a bridge ...:* This term is indefinite. To the extent the term can be defined, it means the device must perform all functions of a bridge, including when forwarding user data packets between networks which conform to a second predefined protocol suite. The decision to act as a bridge depends on the device identifying the protocol suite of the user data packets.

Defendant's Construction:

-> *acting as a router ...:* Performing certain functions and operations typically associated with a router to recognize and forward to and from end systems user data which conform to a first protocol suite.
-> *acting as a bridge ...:* Performing certain functions and operations typically associated with a bridge to recognize and forward between networks user data packets which conform to at least a second protocol suite

Although the parties identified a handful of disputed terms regarding the ' 727 patent in their briefs, they discussed only "acting as a router" and "acting as a bridge" at the claim construction hearing. From that discussion, it appears that the rest of the disputed terms in the '727 patent rise and fall with these two.

The parties focused on two issues: (1) whether "acting as" a bridge or a router means that the device must perform *all* the functions of such a device; and (2) whether the invention must determine which protocol suite is at issue before deciding whether to act as a router or a bridge.

I do not find persuasive plaintiff's argument that "acting as" means "performing all the functions of." As a general matter one thing may "act as" another thing without behaving in exactly the same manner in all respects. Defendant gave the example of a person who may "act as" a lawyer without simultaneously conducting an oral argument, writing a brief and drafting a contract. Similarly, a babysitter may "act as" a child's guardian while the parents are away but this does not mean that the babysitter assumes the functions of saving for the child's college tuition. As an inanimate example, a pile of books may "act as" a stool even though the books do not possess all the qualities that one would normally associate with a stool.

Plaintiff made a valid point during the hearing that it is not enough that the device act as a router or a bridge

in any random manner. It must act as those devices in a manner that satisfies the requirements of the patent. To some extent, the manner in which the device must act as a router or bridge is already specified in the claim itself. With respect to "acting as a router," the device must emulate a router in a manner that allows it "to recognize and forward to and from end systems user data packets which conform to a first protocol suite." With respect to "acting as a bridge," the device must be able "to recognize and forward between networks user data packets which conform to at least a second protocol suite."

At the hearing, plaintiff emphasized that "acting as" a router must mean that the device operates on the network layer and that "acting as" a bridge must mean that the device operates on the data link layer because these are the defining functions of bridges and routers. Defendant did not deny this. In fact, it included these functions in its proposed constructions of "bridge" and "router." Accordingly, I will incorporate those functions into the court's construction: "acting as a router" means "operating at the network layer to forward a message" and "acting as a bridge" means "operating at the data link layer to forward a message."

The second issue disputed by the parties is more complicated but is even more easily resolved. Plaintiff wishes to include an additional sentence in both of its constructions: "The decision to act as a [router or bridge] depends on the device identifying the protocol suite of the user data packets." In other words, plaintiff argues that the device cannot decide whether to act as a bridge or a router until it has identified whether it is dealing with a "first protocol suite" or a "second protocol suite." (The parties agree that a "protocol suite" is "a comprehensive set of protocols that is designed to work together to coherently provide complete communication capabilities." The patent provides the examples of TCP/IP packets as one type of protocol suite and OSI packets as another kind of protocol suite.) Despite the substantial amount of time at the claim construction hearing plaintiff devoted to this issue, it never identified the language in the claim that was the basis for its construction. Obviously, this is a fatal deficiency; plaintiff is not entitled to a "claim" construction that has no basis in the claim. I will not add plaintiff's proposed additional sentence to the constructions.

B. '181 Patent

Invention: A system on a computer for alleviating the necessity of redoing certain tasks in the context of transmitting and receiving messages

Asserted Claims:

1. A computer system for transmitting messages in a computer network, which comprises:
a **message receiving processor** adapted to receive messages from the computer network;

a separate **message transmitting** processor **coupled to** the **message receiving processor;**

the message receiving processor operating to perform first preselected processing of a message received by the message receiving processor and to generate a digest of information relating to the message, the **digest** containing **network protocol processing information** for message transmit processing;

the **message receiving processor** transmitting the message and the **digest** [t]o the **message transmitting processor;**

the **message transmitting processor** operati[ng] to perform second preselected processing of the message using the network protocol processing information in the **digest.**

2. The computer system of claim 1, further comprising:

a common memory comprising a plurality of buffers for storing messages [a]nd associated digests from the **message receiving processor** [t]o the **message transmitting processor;**

each of the **message receiving processor** and the **message transmitting processor** being **coupled to** the common memory;

a **pointer memory coupled to** each of the **message receiving processor** and the **message transmitting processor,** the **pointer memory** having a set of locations for storing pointers to buffers of the common memory, preselected one of the locations each storing a pointer to a buffer of the common memory that is available for use to store a message; and

a **pool of pointers** to buffers of the common memory that are available for use to store messages;

the **message receiving processor** storing a pointer to at least one of the plurality of buffers and operating to transfer a message and associated **digest** to the **message transmitting processor** by writing the message and associated **digest** to the at least one of the plurality of buffers, reading a pointer to a buffer available for use from a preselected location of the **pointer memory** and writing the pointer to the one of the plurality of buffers to the preselected location of the **pointer memory;**

the **message transmitting processor** operating to read the pointer to the one of the plurality of buffers from the preselected location of the **pointer memory** and to thereafter remove a pointer to a buffer available for use from the **pool of pointers** and to write the removed pointer to the preselected location of the **pointer memory.**

6. A **message receiving processor** adapted to receive messages from a computer network, and to transmit received messages to a separate **message transmit processor,** which comprises:

a **first module** operating to perform first preselected processing of a message received by the message receiving processor and to generate a **digest** of information relating [t]o the message, the **digest** containing **network communication protocol information** for second preselected message transmit processing; and

a second module adapted to communicate the message and the digest [t]o the message transmit processor.

7. A message transmit processor adapted for coupling to a separate message receive processor to receive messages from the message receive processor for transmission to a computer network, which comprises:

a **first module** adapted to receive a message and a digest relating to the message from the message receiving processor, the **digest** containing **network communication protocol information** for message transmit processing; and

a **second module** operating to perform preselected processing of the message using the **network communication protocol information** in [the] **digest.**

8. A method of transmitting a message through a computer system comprising the steps of:

receiving a message at a **message receiving processor;**

operating the **message receiving processor** to perform first preselected processing of the message to generate a **digest** of information relating to the message, the **digest** containing **network protocol processing information** for message transmit processing;

operating the **message receiving processor** to transmit the message and the **digest** to a separate message transmitting processor;

operating the **message transmitting processor** to perform second preselected processing of the message using the **network protocol processing information** in the **digest.**

1. ***Message (claims 1-2 and 6-8)***

Plaintiff's Construction: a data packet

Defendant's Construction: a unit of transmission

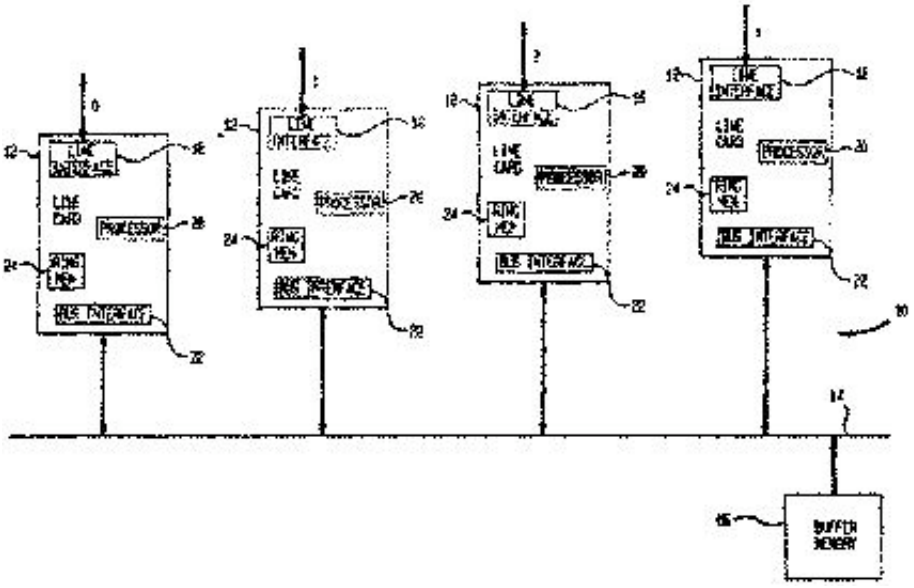
Plaintiff relies on the specification for its construction of "message"; defendant offers no support for its construction other than its belief that plaintiff's construction is wrong. But even defendant agrees that the patent specification uses "message" and "data packet" interchangeably throughout. Although defendant may be correct that "message" normally has a broader meaning than "data packet," an inventor "may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning." Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed.Cir.2001). Accordingly, I will adopt plaintiff's construction: "a data packet ."

2. ***Coupled to (claim 1)***

Plaintiff's Construction: directly connected

Defendant's Construction: connected indirectly or directly

This term raises only one question: to be "coupled to" each other, how close must the connection be between the message transmitting processor and the message receiving processor? I agree with defendant that the two processors do not have to be adjoining; there may be an intermediate link in between them. This is shown in the specification, which states that different items may be "coupled to one another *by* the backplane bus," '181 pat., col. 2, lns. 66-68 (emphasis added). Figure 1 below provides an example of this in which one processor 20 is "coupled to" another processor 20 by a backplane bus 14:



Any further construction at this point would be both unnecessary and unhelpful. The terms "direct" and "indirect" are themselves ambiguous. Thus, adopting one of the parties' constructions would only invite further debate at summary judgment regarding the meaning of those terms.

3. ***Digest (claims 1-2, 6-8) / network protocol processing information (claims 1 and 8)***

Plaintiff's Construction:

-> *digest:* A predefined portion of a message which is generated by a receiving processor and transmitted to a transmitting processor instead of the entire data link layer and which contains preselected network protocol processing information for the particular message, obtained via sequential byte processing of the message at the time of the reception of the message, which is necessary to permit the transmitting processor to process each byte of the data packet in sequence.

-> *network protocol processing information:* All network protocol information that is necessary for the completion of the processing tasks to be performed by the processor of the transmitting processor.

Defendant's Construction:

-> *digest:* Collected information relating to network protocol processing of a particular message.
-> *network protocol processing information:* Information utilized when employing a particular network protocol for message transmit processing.

I will consider these two terms together because they are so closely related. As discussed further below, the central dispute for both of these terms is whether the digest must contain all of the information necessary to perform certain tasks.

Plaintiff's proposed construction of the term "digest" is its most massive. It contains so many clauses and limitations that even plaintiff does not try to justify some parts of it. Although many patent lawyers might be reluctant to admit it, Occam's Razor applies no less in the context of claim construction than it does to

any other walk of life. It is clear that plaintiff has struggled with this term; originally it proposed an even longer construction with now abandoned limitations such as "compliant with all IEEE 802 standards" and "the digest is not sent to the management processor ." With such a bloated and fluid construction, a skeptical judge might think that plaintiff's proposal is not a genuine effort to explain an ambiguous term, but merely an attempt to define the term around its own products.

Defendant's proposed construction of "digest" suffers from the opposite problem: it says nothing at all. Claim 1 itself says that the digest "contain [s] network protocol processing information for message transmit processing." The only real change in defendant's construction is to unjustifiably broaden the contents of the digest to include not just "network protocol processing information" but also information "relating to" network protocol processing. But that is not what the claim says. Although defendant points to parts of the specification and prosecution history that use the "relating to" language, these references cannot expand the scope of the claims. United States v. Adams, 383 U.S. 39, 48-49(1966) ("the claims of a patent limit the invention, and specifications cannot be utilized to expand the patent monopoly").

The question remains whether any part of plaintiff's construction is appropriate for adoption. Plaintiff devoted much of its argument to the proposition that the digest must contain all the necessary information so that certain tasks may be performed. I say "certain" tasks because the precise nature of these tasks changed throughout plaintiff's briefs and at the hearing. In the context of its "digest" construction, plaintiff says that digest must include all "network protocol processing information ... necessary to permit the transmitting processor to process each byte of the data packet in sequence." But as plaintiff points out, that alleged limitation comes from one embodiment in the specification, '181 pat., col. 11, lns. 31-33. It is not part of the invention as a whole.

Plaintiff changes the type of information the digest must contain in the context of its construction for "network protocol processing information" to information that is "necessary for the completion of the processing tasks to be performed by the processor of the transmitting processor." In support of its argument, plaintiff cites a passage that appears in both the abstract and the summary of the invention: "The information placed into the digest is information that is necessary for the completion of the processing tasks to be performed by the processor of the transmitting line card ." '181 pat., abstract; col. 4, lns. 62-65. But this passage says only that the information in the digest is necessary for completing the processing tasks; it does not say that the digest contains *all* the necessary information for completing those tasks. In other words, plaintiff's argument is that the information in the digest must be sufficient to perform the task but the cited passage supports only the proposition that the information in the digest is necessary to perform the task.

Plaintiff suggested another alternative, not included in its construction, that the digest must include all the information needed to "permit it [the invention] to process and transmit the message." Plt.'s Br., dkt. # 31, at 28. *See also* Cl. Const. Tr ., dkt. # 48, at 100 ("[T]he digest has to contain all of the information necessary to allow the transmitting processor to forward the message.") Plaintiff argues that this construction is necessary because (1) one of the steps of the invention is to forward the message; (2) without the information necessary to forward the message, the invention fails; (3) if the invention fails, it is not patentable.

Plaintiff's argument fails on its third premise. It is true, as the case plaintiff cites says, that an invention is not patentable if is not "operative," *In re Lemuel* Woody, 331 F.2d 636, 639 (CCPA 1964), but there is a significant and obvious difference between a device that does not work as intended in all instances and a device that never works at all. The specification makes it clear that "in most instances" there is sufficient

information to allow the transmitting processor to route the message. '181 pat., col. 5, lns. 7-10. Because the patent does not require perfection, I cannot read such a limitation into the claims.

Plaintiff' repeats the same arguments in the context of its construction for "operating to perform the first preselected processing of a message received by the message receiving process." I conclude that the parties have failed to show that any of these three terms would benefit from judicial construction.

4. ***Pointer memory (claim 2)***

Plaintiff's Construction: This term is indefinite. In the alternative, it is a memory used to store pointers until the processor can perform a read bus transaction to read the full message from the central memory.

Defendant's Construction: A memory for storing pointers, i.e., a variable that indicates the memory location (e.g., address) of some data, rather than the data itself.

Although plaintiff argued half-heartedly in its opening brief that this term was indefinite, it abandoned that argument in its response brief and at the claim construction hearing. (In fact, plaintiff failed to meaningfully develop any of its arguments that various terms are indefinite. Accordingly, I consider such arguments waived.) At the hearing, the parties agreed that a pointer is a variable that contains the address of a message or other data. Plaintiff continued to object to defendant's construction, but it provided no reasoned basis for doing so. Its own alternative construction comes from a description in an embodiment of "ring memories," which are only one kind of pointer memory. Accordingly, I will adopt defendant's construction with a slight modification: "a memory for storing variables that indicate the memory location of some data, such as by an address."

5. ***Pool of pointers (claim 2)***

Plaintiff's Construction: This term is indefinite. In the alternative, a collection of pointers located at a discrete location within the memory.

Defendant's Construction: More than one pointer

At the claim construction hearing, plaintiff more or less adopted defendant's alternative construction with the only caveat being that the location of the pool of pointers is not fixed. But saying that the pool is at a "discrete" location does not necessarily mean that the location cannot change. Nevertheless, plaintiff does not offer any specific support for its inclusion of the word "discrete"; it simply seeks a construction that prohibits the pool from being at two places at once, an idea that defendant does not dispute. Accordingly, I will adopt plaintiff's proposed construction with a slight modification: "a collection of pointers in a particular location at any given time."

C. '042 Patent

Invention: Allows remote monitoring of information going into and out of a computer port

Asserted Claims:

1. A method of remote monitoring of a device port in a **connectionless communications network** having a plurality of **IEEE 802 compliant devices** coupled together, the method comprising steps of:

selecting a first port of a first device to be monitored and from which to mirror **MAC frame packets;**

selecting a second port of the first device to which to mirror the **MAC frame packets;**

selecting a first port of a second device **remotely located** from the first device and connected to said **connectionless communications network,** said first and second devices being **IEEE 802 compliant devices;**

selecting a second port of the second device and connecting an analyzer to the second port of the second device;

mirroring the **MAC frame packets** from the first port of the first device to the second port of the first device;

encapsulating the MAC frame packets of the first port of the first device by appending an **IEEE 802 MAC header** including an address of the second port of the second device;

sending the encapsulated **MAC frame packets** through the **connectionless communications network** to a remote location of the second device; and

monitoring the first port of the first device by the MAC frame packets received at the second port of the second device by employing said analyzer.

3. A method of converting an **IEEE 802 compliant network device** to an **ingress device** for remote port monitoring over a **connectionless communications network** including a plurality of **IEEE 802 compliant devices,** the method comprising steps of:

selecting a first port to be monitored on the **ingress device** as a mirror-from-port;

selecting a second port on the **ingress device** as a mirror-to-port;

enabling, on the **ingress device, means for mirroring MAC frame packets from the mirror-from-port to the mirror-to-port;** and

activating an encapsulation logic for encapsulating the **MAC frame packets** by appending an **IEEE 802 MAC header** including an address of monitoring device and enabling transmission of the encapsulated packets from the second port through the communications network to the monitoring device located remotely from the **ingress device.**

4. A method of remote port monitoring in a **connectionless communications network** from a **egress device** coupled to the network, the method comprising steps of:

selecting a mirror-from-port to be monitored on an IEEE 802 compliant **ingress device** coupled to the network;

selecting a mirror-to-port on the **ingress device;**

selecting an analyzing port on an IEEE 802 compliant **egress device** for remote monitoring of the mirror-from-port, the **egress device** being **remotely located** from the **ingress device** and connected over the network including a plurality of **IEEE 802 compliant devices;**

encapsulating **MAC frame packets** received or transmitted on the mirror-from-port by appending an **IEEE 802 MAC header** including an address of the analyzing port and sending the encapsulated packets out the mirror-to-port through the network to a remote location of the analyzing port of the remote **egress device;** and

de-encapsulating and monitoring the packets received at the analyzing port.

5. An **IEEE 802 compliant ingress device** for remote port monitoring in a **connectionless communications network** including a plurality of **IEEE 802 compliant devices** coupled together, the **ingress device** comprising:

a mirror-from-port to be monitored at which MAC frame packets are transmitted or received;

a mirror-to-port;

an encapsulation logic for encapsulating all **MAC frame packets** that are monitored at the IEEE 802 compliant **ingress device,** the encapsulation logic encapsulating the MAC frame packets of the mirror-from-port by appending an **IEEE 802 MAC header** including an address of a **remotely located IEEE 802 compliant device;** and

means for transmitting the encapsulated MAC frame packets to the remotely located device in the network.

1. ***IEEE 802 compliant device (claims 1, 3-6)***

Plaintiff's Construction: A device which complies with all standards set forth in IEEE 802, as those standards existed on May 27, 1997.

Defendant's Construction: Any device which is capable of transmitting or forwarding data packets in accord with any of the networking standards of IEEE 802.

The first dispute on this term is whether the device must be compliant with *all* standards set forth in IEEE 802 (as plaintiff says) or whether it is sufficient to comply with *any* IEEE 802 standard (as defendant says). Defendant's view borders on the nonsensical: how would one determine which standard was the relevant one? If it truly means "take your pick," how is that a meaningful limitation?

Also, defendant's view is not consistent with the natural reading of what it means to be compliant with a set of rules. For example, if an employer were to say that it was "Title VII compliant," this would not mean that the employer was compliant with just any part of the statute. If the employer was not discriminating on the basis of race but was discriminating on the basis of gender, the employer would not be "Title VII compliant." It may be that certain parts of the statute are inapplicable (for example, because all of the applicants for a job are members of a particular protected class), but that would not mean that the employer could pick and choose which portions of the law to follow, only that not all parts of the statute would be

relevant in a particular situation. Similarly, if some standards of IEEE 802 have no application to the '042 patent, as defendant argues, this means only that those particular standards may be disregarded, not that compliance is established by any one standard.

The next question is which version or versions of the IEEE standards apply. There are three possibilities: (1) any version of the standards; (2) the standards that applied when the claims were amended to include this limitation; or (3) the standards that applied when the inventor filed the application for the '042 patent. This first option may be rejected quickly. An invention cannot comply with standards not yet in existence. Defendant argues that limiting the standards to a particular version could render the invention obsolete as the standards change. Defendant is correct, but that is not an argument for expanding the reach of a claim beyond what could have been anticipated by the inventor; it is an argument for not including as an element in a claim a set of standards that change over time. Defendant cites no authority to the contrary.

Defendant says also that it would be "illogical" to use the standards as they existed as of the date of the invention (1997) rather than the date the patent was amended to include "IEEE compliant" limitation (1999). To the extent that this is so, defendant may take that issue up with the Court of Appeals for the Federal Circuit, which has held that it is the date of the invention and not the date of the amendment that controls for the purpose of claim construction. Phillips, 415 F.3d at 1313. I will adopt plaintiff's construction of this term: "a device which complies with all standards set forth in IEEE 802, as those standards existed on May 27, 1997."

The dispute surrounding the terms "IEEE 802 MAC header" and "MAC frame packets" is the same: whether a requirement to comply with IEEE standards means any standard from any date or whether it means all relevant standards as of the date of the invention. Because defendant advances no other arguments regarding these terms, I will adopt plaintiff's construction of "MAC frame packets" as "a connectionless Media Access Control frame packet, described in the IEEE 802.3, as that standard existed on May 27, 1997" and "an IEEE 802 MAC header" as a "Media Access Control header compliant with all IEEE 802 standards, as those standards existed on May 27, 1997."

2. ***Means for mirroring MAC frame packets from mirror-from-port to the mirror-to-port (claim 3)***

Plaintiff's Construction: The function is to mirror (i.e., send copies of) MAC frame packets from the mirror-from-port to the mirror-to-port.

This term is indefinite because no corresponding structure is disclosed and linked to the claimed function.

Defendant's Construction: The function is to mirror (i.e., send copies of) MAC frame packets from the mirror-from port to the mirror-to-port.

The structure includes special hardware (and/or software) in the ingress device defining one port as a "mirror-from-port" and a second port as a "mirror-to-port," as well as the various structures identified in Col. 8, ln. 20-50 for carrying out the mirroring function.

The question on this means-plus-function claim is whether the patent adequately discloses a structure as required by 35 U.S.C. s. 112 para. 6. Because that is a question of validity, Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 296 F.3d 1106, 1114 (Fed.Cir.2002), a determination will have to wait until summary judgment.

3. ***connectionless communications network (claims 1and 3-5)***

Plaintiff's Construction: A network in which data packets are routed through devices independently, based on a destination address for the packet

Defendant's Construction: A network in which data packets are forwarded through devices independently, based on a destination address for the packet.

The parties dispute one word: are data packets "routed" or "forwarded" in a connectionless communications network? Neither party explains the difference between these two terms; presumably, "routed" means that a router is used and "forwarded" is used as a more general verb that includes "routing" but is not limited to that method. In any event, the specification supports plaintiff's construction: "in a connectionless communications network, data packets are *routed* through devices ..." '042 pat., col. 3, lns. 35-36. Defendant cites other passages in the patent discussing other methods of sending messages, but none of them is defining a "connectionless communications network" as is the passage cited by plaintiff. Accordingly, I will adopt plaintiff's construction: "a network in which data packets are routed through devices independently, based on a destination address for the packet ."

4. ***remotely located (claims 1, 3-6)***

Plaintiff's Construction: Not directly physically attached, and at a different location

Defendant's Construction: Not located within the same physical device.

Are two devices "remotely located" only if they are at different locations or is it sufficient that they not be part of the same device? Certainly, the common understanding of "remote" would suggest that there must be some distance between the two devices and that two devices are not "remotely located" if they are in the same closet, as defendant suggests. If the inventor wanted to convey the simple requirement that the two devices be separate, he could have said so much more clearly. Defendant points to no language in the claims or the specification suggesting a special meaning of "remote"; its arguments relying on the prosecution history are not persuasive. Further, as plaintiff points out, the purpose of the invention is to permit monitoring of a port from a location other than where the port is. Thus, defendant's reading of this term could render the invention meaningless. I agree with plaintiff that "remotely located" means "at a different location." (Plaintiff's additional proposed phrase of "not directly physically attached" is redundant and therefore unnecessary.)

ORDER

IT IS ORDERED that the terms disputed by plaintiff Extreme Networks, Inc. and defendant Enterasys Networks, Inc. in U.S. Patent Nos. 6,104,700; 6,859,438; 6,678,248; 5,195,181; 5,430,727; and 6,041,042 are construed as follows:

-> "quality of service" means "a quantifiable measure of service provided";

-> "minimum quality of service" means "minimum quantifiable measure of service provided";

-> "minimum bandwidth" means "smallest amount of data transmission capacity over a predefined period of

time";

-> "current bandwidth metric" means "the present calculation of a moving average of bandwidth over a predetermined time period";

-> "acting as a router" means "operating at the network layer to forward a message";

-> "acting as a bridge" means "operating at the data link layer to forward a message";

-> "message" means "data packet";

-> "coupled to" does not require the two objects to be adjoining; they may be connected by an intermediate link;

-> "pointer memory" means "a memory for storing variables that indicate the memory location of some data, such as by an address";

-> "pool of pointers" means "a collection of pointers in a particular location at any given time";

-> "IEEE 802 compliant device" means "a device which complies with all standards set forth in IEEE 802, as those standards existed on May 27, 1997";

-> "MAC frame packets" means "a connectionless Media Access Control frame packet, described in the IEEE 802.3, as that standard existed on May 27, 1997";

-> "an IEEE 802 MAC header" means a "Media Access Control header compliant with all IEEE 802 standards, as those standards existed on May 27, 1997";

-> "connectionless communications network" means "a network in which data packets are routed through devices independently, based on a destination address for the packet";

-> "remotely located" means "at a different location."

W.D.Wis.,2007.
Extreme Networks, Inc. v. Enterasys Networks, Inc.