UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSEPH ZELIKOVITZ

Appeal No. 2006-0697
Reexamination Control No. 90/006,402
Patent No. 5,555,478[1]

HEARD March 20, 2006

Before LEE, HANLON and LANE, Administrative Patent Judges.

LEE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 and § 306 from the examiner's rejection of the patentee's claims 1-20 in the patent reexamination proceeding.

References relied on by the Examiner

Chan et al. (Chan)	5,351,146	September 27, 1994
Smith et al. (Smith)	5,559,625	September 24, 1996
Bales	5,386,466	January 31, 1995

[1] Issued September 10, 1996, and based on application filed June 7, 1995. Request for reexamination filed October 4, 2002. The real party in interest is Red River Optic Corporation, Inc.

Tanenbaum “Computer Networks”, Prentice-Hall, 1981, pp. 12-13 and 187-197

The Rejections on Appeal

Claims 1-7, 10-13 and 16-17 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chan in view of Tanenbaum.

Claims 8, 14, and 18-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chan, Tanenbaum and Smith.

Claims 9 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chan, Tanenbaum and Bales.

The Invention

The invention is directed to a fiber optic data transmission method and apparatus for transmitting data packets which include header and tail information from one subscriber station to another subscriber station. There are three levels of routing devices placed in a matrix of fiber optic cables, which together shunt the data packets to the intended destination throughout the fiber optic cable matrix. The first level of routing device is called an intelligent communication platform (ICP); the second is called an intelligent line module (ILM); and the third is called an intelligent routing card (IRC). An interface device called a data processor line card is located at the first subscriber station and is capable of forming data packets with head and tail information. A second data processor line card is located at the second subscriber station. The ICP connects to the data processor line card of the first subscriber station, receives a data transmission packet therefrom, determines the appropriate route for sending that packet, and shunts the packet onto an appropriate fiber optic line to an ILM. The ILM is coupled to an IRC

and the IRC is located at the junction of at least two fiber optic lines. The IRC receives a transmitted data packet, determines the appropriate route for the packet and shunts the packet toward or away from the ILM. A second data processor line card is located at the second subscriber station and is coupled to the IRC to receive the transmitted data packet.

The independent claims are claims 1, 10 and 16. Claim 1 is reproduced below:

1. A fiber optic transmission system comprising:

a plurality of fiber optic lines, subscriber locations, intelligent communication platforms, and at least one intelligent routing card;

a first source of data at a first subscriber location;

a first data processor line card at said first subscriber location capable of forming a plurality of data transmission packets with data, header and tail information;

a first intelligent communication platform coupled to said first data processor line card by fiber optic lines wherein said first intelligent communication platform is capable of receiving any one of said transmission packets, determining the appropriate route for said one transmission packet and is capable of shunting said one transmission packet onto the appropriate fiber optic line to a first intelligent line module;

a first intelligent routing card at the junction of at least two fiber optic lines and coupled to said first intelligent line module wherein said first intelligent routing card is capable of receiving any one of said transmission packets, determining the appropriate route for said transmission packet and shunting said transmission packet onto the appropriate fiber optic line to or away from said first intelligent line module; and

a second data processor line card at a second subscriber location coupled to said first intelligent routing card capable of receiving said transmission packet and decoding the data within said packet.

A more specific embodiment is covered by method claim 16, which requires a first and a second ILM and a first and a second ICP in addition to at least one IRC and which refers to two intelligent line card data processors that are called data processor line cards in the context of claim 1. The first ICP determines the destination of the transmission packet, makes a routing determination, and routes the packet to a first ILM. The transmission packet is routed from the first ILM to the IRC where destination of the packet is again determined and another routing determination is made. The transmission packet is routed from the IRC to the second ILM where destination of the transmission packet is again determined and a further routing determination is made. The transmission packet is routed from the second ILM to the second ICP where destination of the transmission packet is again determined and still a further routing determination is made. The transmission packet is routed from the second ICP to the second intelligent line card data processor where the packet can be decoded.

Claim 10, in apparatus form, substantially corresponds to method claim 16. However, the first ILM is said to shunt the data packet onto an appropriate fiber optic line to or away from the first ICP; the IRC is said to shunt the data packet onto an appropriate fiber optic line to or away from the first ILM; the second ILM is said to shunt the data packet onto an appropriate fiber optic line to or away from the IRC; and the second ICP is said to shunt the data packet onto an appropriate fiber optic line to or away from the second ILM.

Discussion

A. The rejection of patent claims 1-7, 10-13, and 16-17 under 35 U.S.C. § 103 over Chan and Tanenbaum

The appellant informs us that the claims on appeal had already been once interpreted by a U.S. District Court in a patent infringement civil litigation identified as Red River Fiber Optic Corp., Inc. v. Level 3 Communications, LLC, Cause No. 2:01-cv-208, Eastern District of Texas.

At oral argument on March 20, 2006, in response to the panel's inquiry, counsel for the appellant indicated that the parties settled that litigation and the district court never did enter judgment either on infringement or validity. According to the appellant (Appeal Brief at 2), "[s]everal limitations in the claims, as construed by the [U.S. District] Court, are not disclosed, taught or suggested in the art relied upon by the Examiner to support his rejection." At oral hearing on March 20, 2006, however, counsel for the appellant acknowledged to the panel that the Board might not be bound by the district court's interpretation of the claims, although he thought the appellant must not urge a different interpretation than that reached by the district court.

Neither the examiner nor the board is bound by the district court's claim interpretation. As the examiner in this case stated (Answer at 26), during examination, even reexamination, claim terms are given their broadest reasonable interpretation consistent with the specification, citing In re Yamamoto, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1994). The same does not apply to a U.S. District Court in a patent infringement litigation. The rationale for that distinction is that during proceedings before the U.S. Patent and Trademark Office, a party may

amend their claims to obviate or render inapplicable any broader interpretation. Note that in pertinent part, 35 U.S.C. § 305 states as follows:

> In any reexamination proceeding under this chapter, the patent owner will be permitted to propose any amendment to his patent and a new claim or claims thereto, in order to distinguish the invention as claimed from the prior art cited under the provisions of section 301 of this title, or in response to a decision adverse to the patentability of a claim of a patent. No proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding under this chapter.

At issue is the meaning of "Intelligent Communication Platform (ICP)," "Intelligent Line Module (ILM)," and "Intelligent Routing Card (IRC)." In that regard, note the following text in the Summary of the Invention section of the specification:

> Routing devices strategically placed on this matrix of fiber optic cables shunt packeted information to the intended destination throughout the fiber optic cable matrix. These shunting devices are known as shared intelligent communication platforms (ICP), intelligent line modules (ILM), and intelligent routing cards (IRC).

Based on the strategic placement disclosed in the specification, it is evident that the ICP is a routing device directly connected to a subscriber station, the ILM is a routing device one level removed from the ICP; and the IRC is a routing device a further level removed from the ICP. See Figure 1A in the appellant's specification. Also, it is evident that these routing devices are characterized as "intelligent" because they make decisions on which way to shunt a data packet based on routing information contained within the data packet being transmitted. See for example appellant's specification in column 4, lines 52-57. Consequently, to the extent that the appellant's claims require the ICP, ILM, and/or IRC to determine an appropriate route for a

received data packet and shunt it to an appropriate fiber optic line, the determination must be made based on routing or address information contained within the data transmission packet.

The examiner relied on Chan to meet all of the features of the appellant's independent claims 1, 10 and 16, except for the formatting of each data transmission packet into a header section, a data section, and a tail section, for which the examiner relied on Tanenbaum. Chan discloses an all-optic transmission network with three levels of network switching, Level-0, Level-1, and Level-2. (Chan, column 2, lines 3-10 and 31-49). The disclosed system provides three types of basic transmission services, as is stated in Chan, column 2, lines 11-22:

> The network allows frequency division multiplexing to access the 25 THz (200 nm) of fiber bandwidth and can support three basic services of: A) Point-to-point or point-to-multipoint high speed circuit switched multi-Gbps digital or analog sessions; B) Time division multiplexed circuit switched sessions in the range of a few Mbps to the full channel rate of multi-Gbps; and, **C) A service** used internally for control, scheduling and network management **that can also be used for datagram services**. These services each have all-optical data paths, but can use some electronics for set up and control. (Emphasis added.)

Similarly, in column 6, lines 5-11, Chan states:

> The basic types of transmission services provided at the user interfaces (henceforth identified as an Access Ports (AP) of the all-optical network) are classified into three service types: Type A, which is a physical circuit service; Type B, which is scheduled time division multiplexed (TDM) service; and **Type C, which is unscheduled datagram service**. (Emphasis added.)

The examiner agreed with the appellant that Type A and Type B transmission service of Chan do not meet the appellant's claim features requiring routing information to be included or appended to each data packet being transmitted. (Answer at page 19, lines 1-6). However, the examiner correctly notes that Type C service of Chan, in addition to providing a service used

internally for control, scheduling and network management, also is an unscheduled datagram service and can be used for datagram services.

"Datagram" and "datagram service" are not defined in Chan. However, the examiner cited to numerous literature in the art and thus has established that the term "datagram" is a well known term of art which refers to individual portions of an entire message for transmission, each of which is a data packet containing within it sufficient routing or address information for that packet to be routed from source to destination independently of all other data packets. The examiner has also established that "datagram service" is a well known term of art meaning that an entire message is divided into multiple datagrams which are transmitted independently of each other and routed respectively based on destination address information contained within them.

The examiner cited to "8th Newton's Telecom Dictionary, The Official Dictionary of Computer Telephony, Telecommunications, Networking, Data Communications, Voice Processing and the Internet" by Harry Newton, as defining "datagram" as follows (Answer pp. 19-20):

> A transmission method in which sections of a message are transmitted in scattered order and the correct order is re-established by the receiving workstation . . . "A single unacknowledged packet of information that is sent over a network as **an individual packet without regard to previous or subsequent packets**." . . . A finite-length **packet with sufficient information to be independently routed from source to destination**. In packet switching, **a self-contained packet, independent of other packets, that [carries] information sufficient for routing from the original data terminal equipment to the destination data terminal equipment, without relying on earlier exchanges between the equipment and the network. . . . Datagram** transmission typically **does not involve end-to-end**

> **session establishment** and may or may not entail delivery confirmation acknowledgment. **A datagram** is the basic unit of information passed across the Internet. **It contains a source and destination address along with data**. Large messages are broken down into a sequence of IP **datagrams**. (Emphasis added by Examiner).

Similar citations are made to seven other reference works on pages 20-24 of the examiner's answer. All eight references are listed on page 16 of the appellant's reply.

The appellant has failed to discredit or successfully rebut the examiner's determination of what "datagram" and "datagram service" would mean to one with ordinary skill in the art. The appellant mainly discusses that part of Type C transmission service which provides internal control, scheduling and network management, rather than that part of Type C transmission service which provides an unscheduled datagram service. The latter is what the examiner relied on for making the rejection, not the former.

Regarding datagrams, the appellant argues that it has no single uniform definition and "does not carry all the content meaning attributed by the Examiner" (Reply at 16). But the appellant does not point out where in any one of the eight reference works referred to by the examiner there is a meaning for "datagram" or "datagram service" contrary to that established by the examiner. Nor has the appellant submitted any declaration testimony or additional reference work which demonstrates the contrary to the examiner's position. While the appellant's reply brief does cite to Tanenbaum, a prior art reference underlying the rejections on appeal, the appellant did not provide with its reply brief those pages of Tanenbaum on which it relies, i.e., pages 198-214. Those pages of Tanenbaum are not in the administrative record.

Only those pages relied on by the examiner in support of the rejections are in the record.

Based on the foregoing, the examiner's position stands unrebutted with regard to the meaning of "datagram" and "datagram service" as would be understood by one with ordinary skill in the art. In any event, and in the alternative, even assuming as the appellant has argued that a datagram structure may be different for a variety of transmission methods all of which may use a datagram for transmission, that is not inconsistent with the examiner's determination that a datagram is a packet that includes both data and routing or address information and that a datagram service provides transmission of data packets by individually routing each packet based on the routing or address information in the packet. For instance, nothing precludes a transmission method that is not a datagram service from using a datagram for transmission. In that case, a datagram packet would simply be regarded as an ordinary data packet without the routing and address information. The routing or address information need not be used.

Nonetheless, the rejections on appeal cannot be sustained. The claims on appeal are more specific than merely requiring the sending of data packets by use of a datagram service. The claims on appeal all require three levels of intelligent routing devices, which in this case means that each of the three must read destination address information contained in a received data packet and make a decision on where to route the packet based on the destination address information. If Chan can properly be relied on to satisfy this feature then at each of the Level-0, Level-1, and Level-2 routing networks of Chan a datagram being transmitted must be examined for its routing and address information in order for subsequent routing to be determined. The

examiner did not point out the specifics of how Chan describes its implementation of a datagram service. Nothing which the examiner has cited from Chan goes into sufficient detail. The particulars of implementing a datagram service with the Level-0, Level-1, and Level-2 networks of Chan are left largely to one's imagination or speculation. The examiner has resorted to several findings which are unsupported.

On page 48 of the answer, in lines 18-22, the examiner concludes that each packet or datagram under Type C communications in Chan must be examined by each of the Level-0, Level-1, and Level-2 intermediate networks in order to figure out the route toward the destination and forward the datagram along the route, based solely on the fact that a datagram itself would carry sufficient address information for routing, independent of other packets, and does not rely on earlier exchanges. Similarly, on page 50 of the answer, the examiner concludes that each of the Level-0, Level-1, and Level-2 routers in Chan definitely has the ability to perform intelligent routing based on the address information within each transmission packet, because each datagram is a self-contained packet, independent of other packets, which carries sufficient address information for routing from source to destination without relying on earlier exchanges. The reasoning is misplaced. The fact that each data packet contains enough destination address information for it to be routed independently of other packets without need to rely on other packets or earlier exchanges is not enough to demonstrate that "each" of the Level-0, Level-1, and Level-2 routers must necessarily read that destination address and perform intelligent routing based on the destination address just read from the data packet or datagram.

The meaning of datagram service as established by the examiner is broad and does not require that the routers at each level be "intelligent" such that they all would read the destination address information from the data packet being transmitted and use it to determine subsequent routing. It is merely the examiner's own opinion, unsupported by evidence, that each level of routers must be "intelligent" in order to provide a datagram service. Of the three levels of intermediate networks Level-0, Level-1, and Level-2, in Chan, not all three must be "intelligent" for routing a datagram for the result to be consistent with providing a datagram service. For instance, the examiner has not explained why it is not possible that Level-0 networks can continue to be broadcast networks which share everything within a local area network without regard to destination and that Level-1 and Level-2 networks will provide all the intelligence that is necessary. The examiner has skipped a step in the analysis and arrived without sufficient basis at the conclusion that there is only one way Chan's disclosed network can be used to provide or be adapted to support a datagram service.

The deficiency is the same even considering, as noted by the examiner, that independent claims 1 and 10 recite only that the various intelligent routers are "capable of" performing certain functions. Although it is true that where the structure is the same between a claimed apparatus and something preexisting in the prior art, a different intended use for the invention does not distinguish it from the prior art, the examiner has not shown that Chan discloses the identical physical structure as that claimed by the appellant. Insofar as each intelligent router claimed by the appellant requires corresponding programming within an associated data

processor, the examiner has not shown that such programming necessarily exists in each of Chan's Level-0, Level-1 and Level-2 networks. Two differently programmed processors are ordinarily not considered to have identical structure, especially if they accomplish different results. The examiner has not pointed to where the same programming exists in Chan and is capable of being run whenever there is desire to do so.

For the foregoing reasons, the examiner has not properly identified all the differences between the appellant's claimed invention and Chan's disclosure. Also, the Tanenbaum reference, as applied by the examiner, does not make up for the deficiencies of Chan.

Accordingly, the rejection of claims 1-7, 10-13, and 16-17 under 35 U.S.C. § 103 as unpatentable over Chan and Tanenbaum is improper and cannot be sustained.

B. The rejection of claims 8, 14, and 18-20 under 35 U.S.C. § 103 as unpatentable over Chan, Tanenbaum, and Smith

Claim 8 depends from claim 3 which depends from independent claim 1. Claim 14 depends from independent claim 10. Claims 18 and 19 each depend from independent claim 16. Claim 20 depends from claim 19. The Smith reference, as applied by the examiner, does not make up for the deficiencies of Chan and Tanenbaum as discussed above in the context of the rejection of the independent claims. Accordingly, the rejection of claims 8, 14, and 18-20 under 35 U.S.C. § 103 as unpatentable over Chan, Tanenbaum, and Smith is improper and cannot be sustained.

C. The rejection of claims 9 and 15 under 35 U.S.C. § 103 as unpatentable over Chan, Tanenbaum, and Bales

Claim 9 depends from claim 3 which depends from independent claim 1. Claim 15 depends from independent claim 10. Tanenbaum and Bales, as applied by the examiner, do not make up for the deficiencies of Chan and Tanenbaum as discussed above in the context of the rejection of the independent claims. Accordingly, the rejection of claims 9 and 15 under 35 U.S.C. § 103 as unpatentable over Chan, Tanenbaum, and Bales cannot be sustained.

D. Counsel's Acknowledgment of Prior Art

At oral hearing on March 20, 2006, counsel for the appellant acknowledged (1) that the appellant is not the first to provide a datagram service for transmission of data packets each of which includes a destination address to be read by intelligent routers which determine the transmission path independently for each packet based on the destination address contained in each packet, and (2) that the differences between the appellant's invention and prior art datagram transmission networks are (a) that while the appellant's invention employs an all-optical data path, the prior art does not, and (b) that while the appellant's invention employs "three" levels of intelligent routers the prior art does not.[2] When asked immediately thereafter how many levels of intelligent routers such prior art used, if not three, counsel replied that it would depend on the

[2] Counsel for the appellant was informed that for purposes of the inquiry a datagram is a data packet for transmission which includes a data portion and a destination address portion.

particular prior art without identifying anything in particular. We suggest that the appellant specifically disclose and call the examiner's attention to the closest such prior art.

Conclusion

The rejection of claims 1-7, 10-13, and 16-17 under 35 U.S.C. § 103 as unpatentable over Chan and Tanenbaum is **reversed**.

The rejection of claims 8, 14, and 18-20 under 35 U.S.C. § 103 as unpatentable over Chan, Tanenbaum, and Smith is **reversed**.

The rejection of claims 9 and 15 under 35 U.S.C. § 103 as unpatentable over Chan, Tanenbaum, and Bales is **reversed**.

REVERSED

/Jameson Lee/
JAMESON LEE)
Administrative Patent Judge)
)
)
)
/Adriene Lepiane Hanlon/) BOARD OF PATENT
ADRIENE LEPIANE HANLON) APPEALS
Administrative Patent Judge) AND
) INTERFERENCES
)
)

/Sally Gardner Lane/)
SALLY GARDNER LANE)
Administrative Patent Judge)

By First Class Mail

Attorney for the appellant:

D. Scott Hemingway
460 Preston Commons West
8117 Preston Road
Dallas, Texas 75225

Gregory D. Caldwell, Esq.
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP
12400 Wilshire Blvd.
Seventh Floor
Los Angeles, CA 90025-1030