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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TELES AG INFORMATIONSTECHNOLOGIEN
Appellant

Appeal 2010-000115
Reexamination Control 90/010,017
Technology Center 3900
Patent No. 6,954,453

Before ROBERT E. NAPPI, SCOTT R. BOALICK, and
KEVIN F. TURNER, *Administrative Patent Judges.*

BOALICK, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" shown on the PTOL-90A cover letter attached to this decision.

Teles AG Informationstechnologien ("Teles")[2] appeals under 35 U.S.C. § 134(b) and 35 U.S.C. § 306 from a final rejection of claims 34-36 and 38. Claims 1-33 and 37 are not subject to reexamination. We have jurisdiction under 35 U.S.C. §§ 134(b) and 306.

An oral hearing was held on December 2, 2009. The record includes a written transcript of the oral hearing.

We affirm.

STATEMENT OF THE CASE

Reexamination Proceedings

A request for *ex parte* reexamination of U.S. Patent No. 6,954,453 (the '453 patent) was filed on August 30, 2007, and was assigned Reexamination Control No. 90/010,017. The '453 patent, entitled "Method for Transmitting Data in a Telecommunications Network and Switch for Implementing Said Method," issued October 11, 2005, to Sigram Schindler, Andreas Illg, Karsten Lüdtke, and Frank Paetsch, based on Application No. 09/147,970, filed October 7, 1997. The '453 patent claims the benefit, under 35 U.S.C. § 119, of two German patent applications. The effective filing date of the '453 patent is said to be October 7, 1996. (App. Br. 1.)

Related Litigation

The Brief (App. Br. 6, n. 3; *see also* Oral Hr'g Tr. 2:21 to 3:11) indicates that the '453 patent is involved in litigation.

[2] Teles is said to be the real party in interest and assignee of the patent under reexamination. (App. Br. 2.)

Appellant's Invention

The '453 patent relates to a switching apparatus that transfers data from a first switch to a second switch selectively by either line-switching or packet-switching. (Abstract; col. 1, ll. 7-10.) A line-switching connection is expensive but is free of time delay and has a fixed bandwidth. (Col. 1, ll. 39-48.) A packet-switching connection is inexpensive but has a time delay that can become so great that certain applications are no longer possible. (Col. 1, l. 52 to col. 2, l. 21.) The switching apparatus can change-over to a line-switching connection from a packet-switching connection, or vice versa, without interrupting the connection. (Col. 3, ll. 15-18.) Thus, "data transfer can be interchanged dynamically between line switching and packet switching." (Col. 3, ll. 57-58.) Two "important uses" of the invention are Internet telephony and downloading of files from a web server. (Col 7, ll. 24-26.) The invention "allows flexible data transfer between the switches and more particularly cost-effective data transfer with real time properties." (Col. 3, ll. 12-14.)

Independent claim 34, with emphasis and reference numerals added by Appellant (App. Br. 12), is reproduced below:

34. Switching apparatus for **routing a telephone call** comprising non-packetized data from a first end terminal located at a user's premises to a second end terminal located at another user's premises, **selectively by line switching or packet switching**, the switching apparatus comprising:

[1] means for establishing a connection through a line-switching network to the second end terminal;

[2] means for line-switching transferring data received from the first end terminal as non-packetized data over the line-switching network to the second end terminal;

[3] means for establishing a connection through a packet-switching network to the second end terminal;

[4] means for packet-switching transferring data received from the first end terminal as non-packetized data over the packet-switching network to the second end terminal; and

[5] **means** responsive to a control signal **for transferring to a line-switching transfer or a packet-switching transfer** to the second end terminal;

[6] **said means** responsive to a control signal **changing-over** to a line-switching data transfer or a packet-switching transfer **during the existing transfer** with the presence of said control signal.

The Rejection

Claims 34-36 and 38 stand rejected under 35 U.S.C. § 103(a) as being obvious over White (U.S. Patent 6,069,890) in view of Jonas (U.S. Patent 6,137,792) or Farese (U.S. Patent 4,996,685).

Appellant relied upon the following[3] in rebuttal to the Examiner's rejection:

> Declaration under 37 C.F.R. § 1.132 of Sigram Schindler, dated April 28, 2008 ("Schindler Declaration" or "Schindler Decl.").

[3] This opinion only addresses arguments made by Appellant. Arguments not made are considered waived. *See* 37 C.F.R. § 41.37(c)(1)(vii). We have considered the declaration evidence to the extent raised by Appellant's arguments.

Declaration under 37 C.F.R. § 1.132 of Frank Paetsch, dated June 27, 2008 ("Paetsch Declaration" or "Paetsch Decl.").

McNiff (U.S. Patent 6,807,150).

Thornton (U.S. Patent 6,363,065).

ISSUES

The following dispositive issues are presented:

1. Has the Examiner properly applied 35 U.S.C. § 112, ¶ 6?

2. Does the combination of White and Jonas or Farese teach or suggest a "means responsive to a control signal for transferring to a line-switching transfer or a packet-switching transfer to the second end terminal; said means responsive to a control signal changing-over to a line-switching data transfer or a packet-switching transfer during the existing transfer with the presence of said control signal"?

3. Has the Examiner properly combined White and Jonas or Farese?

4. Has the Examiner properly considered Appellant's proffered evidence of non-obviousness?

FINDINGS OF FACT

'453 Patent

1. In the BACKGROUND OF THE INVENTION section, the '453 patent teaches that "[l]ine-switching connections use line switches, alias line switching equipment, between the individual line sections." (Col. 1, ll. 17-18) A line switch "is called telecommunications apparatus (TK apparatus) in the private sector, and exchanges of the network supplies in the public sector." (Col. 1, ll. 29-32.) "Line switching connections are synchronous, i.e., data transfer is carried

out substantially without any time delay from one line section to an adjoining line section through a switch (here, a line switching apparatus)." (Col. 1, ll. 34-37.) "Line-switching connections are expensive, particularly during telephone conversations since the costs accumulate irrespectively of the information actually transferred. The advantage of a line switching connection is that it is free of any time delay and has a fixed bandwidth." (Col. 1, ll. 43-47.)

2. The BACKGROUND OF THE INVENTION section of the '453 patent further teaches that "[p]acket-switching connections use packet switches, alias packet switching equipment, between the individual line sections of a network." (Col. 1, ll. 20-22.) A packet switch "is also called a router, an IP switch or a host computer." (Col. 1, ll. 32-33.) "With packet exchange, data, e.g., audio data, video data or computer files, are packeted and transferred as data packets." (Col. 1, ll. 50-52.) "Packet switching works in the asynchronous transfer mode, i.e., data is transferred time-delayed between two adjoining line sections by a switch (here, a packet switching apparatus)." (Col. 1, ll. 52-55.) "In the case of packet-switching exchanges, and quite differently from line-switching exchanges, a fixed connection does not have to be maintained. It is connection-less, i.e., each packet is treated individually and not in conjunction with others." (Col. 1, ll. 55-59.)

3. The BACKGROUND OF THE INVENTION section of the '453 patent discusses Farese, stating that "a method and device are known which allow in an ISDN communications network, during an existing connection between a user and a host computer, a dynamic change between a line switching connection through an ISDN B channel and a packet-switching connection through an ISDN D channel." (Col. 2, ll. 22-27.) "A command to change between a line-switching and a packet-switching connection thereby always emanates from the Host computer." (Col. 2, ll. 27-30.) The '453 patent characterizes Farese, stating that it "is restricted to undertaking on an ISDN connection a change between a line-switching and a packet-switching data transfer whereby a line-switching transfer is carried out on a B channel and a packet-switching transfer is carried out on the D channel." (Col. 2, ll. 31-36.)

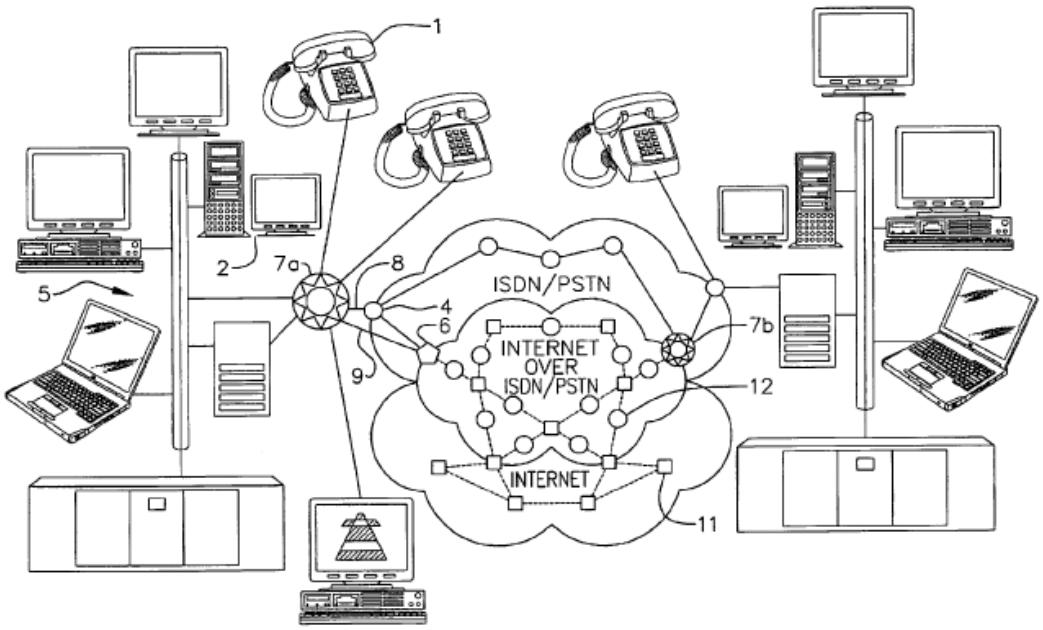
4. The '453 patent states that "the present invention is concerned with the problem of providing a method for transferring data from a first switch to a second switch and providing a switching for carrying out the method which, depending on the data origin and headers of a user or network management system, allows flexible data transfer between the switches and more particularly cost-effective data transfer with real time properties." (Col. 3, ll. 7-14.) "The solution according to the present invention makes it possible during pocket-switching [sic] connection between two switches to achieve a dynamic change-over to line-switching connection without interrupting the connection."

(Col. 3, ll. 15-18.) This change-over is advisable if there is a data build up of data packets before the switches of the packet-switching network. (Col. 3, ll. 18-20.) The establishment of a line-switching connection between the switches produces a bypass over which data can be transferred with fixed bandwidth and slight time delays substantially in real time in order to bypass the data blockage. (Col. 3, ll. 21-25.) "Since a line switching connection is established only when required, i.e., when a packet-switching data transfer no longer has the desired bandwidth, the invention allows a flexible, most cost-effective data transfer." (Col. 3, ll. 25-30.)

5. "A switch according to the present invention has . . . a control device which directs incoming data either to the IP switching device or to the line switching device depending on the control signals." (Col. 3, ll. 41-47.) The '453 patent teaches that "[t]he corresponding control signals are triggered by a user, or at the command of a network management system and are transferred together with other signaling data to the switch. Alternatively, the switch itself automatically produces a corresponding control command upon exceeding a certain bandwidth of the packet-switching transfer." (Col. 3, ll. 48-54.)

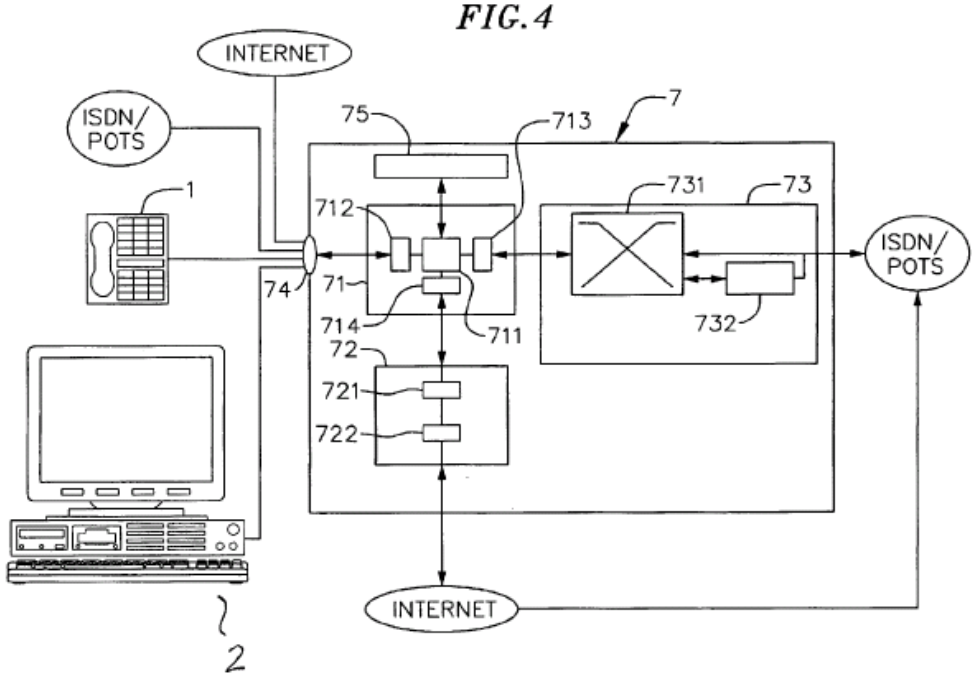
6. Figure 1 (reproduced below) "shows a telecommunications network according to the present invention with switches 7a and 7b according to the present invention." (Col. 7, ll. 13-15.)

FIG. 1



7. Figure 4 (reproduced below) "shows diagrammatically the establishment of a switch 7 according to the present invention." (Col. 8, ll. 16-17.) "The switch 7 is part of both a packet-switching network (internet) and a line-switching network (telephone network), i.e., it is connected through lines to further network junctions to which it can transfer or receive line-switched or packet-switched data." (Col. 8, ll. 17-22.)

FIG. 4



8. The switch 7 has a control device 71 that produces internal control commands as to whether packet-switching is to take place through the IP switch 72 or line switching is to take place through the line-switching device 73. (Col. 8, ll. 53-56.) "The device 71 is substantially a switch which forwards the incoming data either as data packets to the IP switch 72 or as bit flow to the line switching device 73." (Col. 8, ll. 56-59.) Control device 7 has a change-over control unit 711 that "monitors and controls which open connections are present (i.e., which and how many data channels are connected) and which bandwidth the individual data channels require." (Col. 8, ll. 60-64; *see also* col. 8, l. 65 to col. 9, l. 22.)

9. "Through a control command which is sent by an end terminal or another switch and for example triggered by a user by pressing a

certain button on the terminal or by the network management system, the type of communication is switched over to line-oriented or packet-oriented communication." (Col. 9, ll. 23-28.) "A corresponding signaling command for changing between packet and line switching is, for example, represented by a certain bit sequence wherein the switching unit 71 stores the detailed incoming data in an intermediate register 712 and compares it with stored bit sequences. If a certain bit sequence exists, then a change over to a different type of switching is carried out." (Col. 9, ll. 29-35.) "Alteratively, [sic] it can also be possible for the change-over control device 711 to monitor the bandwidth of a transfer and on understepping or exceeding a certain bandwidth and/or in the event of a time delay when forwarding IP data packets to automatically release a control command to change over to the relevant other type of transfer." (Col. 9, ll. 35-41.)

10. "To change from packet switching to line switching, first at the command of the control unit 71, a connection is made via the line-switching unit 73 (bypass) with another switch (destination switch)." (Col. 9, ll. 42-45.) "After the connection is established, all the incoming data of the communications connection considered are no longer directed through the IP-switch 72 but through the line-switching unit 73" (col. 9, ll. 47-51) and "[t]he data are now transferred by line-switching with fixed bandwidth through the established bypass to the other switch" (col. 9, ll. 51-53). "The change-over control unit 711 thereby checks, within the scope of the

change-over process and prior to sending the data to the device 73, whether they are IP packets and whether unpacketing is to take place in the packeting/unpacketing device 713." (Col. 9, ll. 54-58.) "The decision on this is made dependent on control signals of the network management system or the end terminal or alternatively by the change-over control unit 711 itself dependent on the data arrival." (Col. 9, ll. 58-61.) "For the channel or sub-channel considered, a line-switching transfer takes place to the switch which represents the other side of the line-switching connection until a control command again reaches the device 71 to switch over again to packet-switching." (Col. 11, ll. 24-28.) "This command is in turn coded by a certain bit sequence or is produced automatically. Then through the control device, the switched-through line is broken off and the incoming data are then again directed to the IP switch 72." (Col. 11, ll. 28-32.)

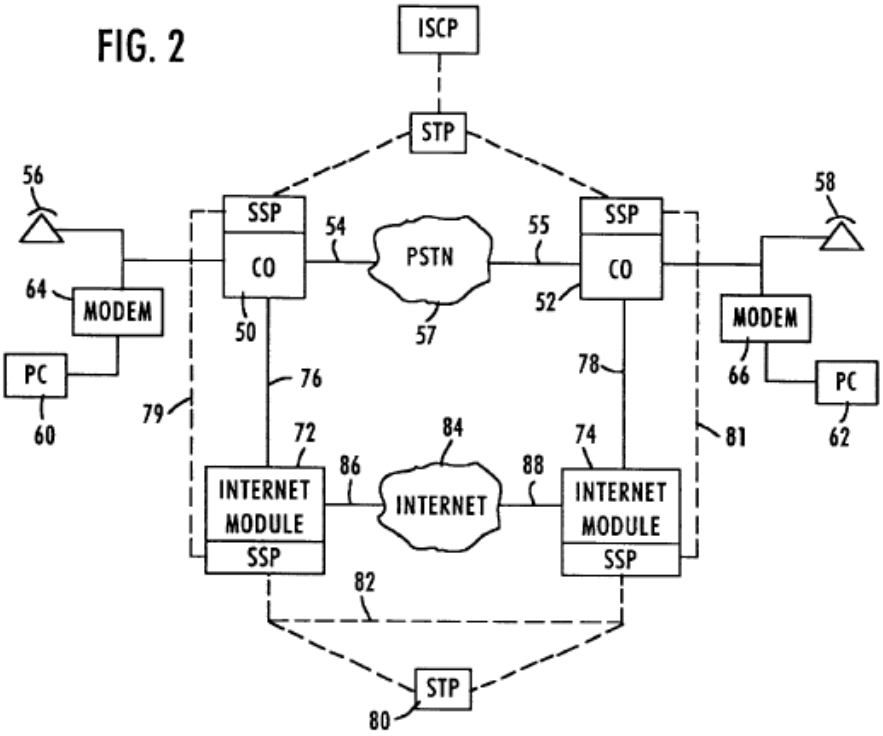
White

11. White relates to an Internet telephone service where calls can be made over the Internet from telephone to telephone, telephone to computer, or computer to telephone. (Abstract; col. 4, ll. 5-24.) One "object of the invention [is] to provide voice service over public telephone systems via the Internet where the use of the Internet is optional to the Telco and transparent to the customer." (Col. 3, ll. 57-60.) White teaches that "[p]ublic switched telephone networks utilizing program controlled switching systems are arranged in an architecture with the Internet to provide a methodology for facilitating telephone use of the

Internet by customers on an impromptu basis." (Col. 4, ll. 8-12.) The system allows "a caller to set-up and carry out a telephone call over the Internet from telephone station to telephone station without access to computer equipment, without the necessity of maintaining a subscription to any Internet service, and without the requiring Internet literacy or knowledge." (Col. 4, ll. 12-17.) In one implementation, the call may be routed over the Internet by the user dialing a special access code (e.g., *82). (Col. 5, ll. 51 to col. 6, l. 1.)

12. Figure 2 (below) shows one implementation of a system for providing telephone service over the Internet. (Col. 4, ll. 58-62.)

FIG. 2



13. A calling telephone 56, which may be a Plain Old Telephone Service (POTS) telephone, is connected to a central office switch 50 which is

in turn connected to the PSTN 57. (Col. 5, ll. 8-23, 51-63.) Similarly, a second central office switch 52 is connected to the PSTN 57 and to a destination telephone 58. (Col. 5, ll. 8-23, 51-63.) The central office switch 50 is also connected to an Internet Module 72, which is connected to the Internet 84. (Col. 5, ll. 24-50.) The second central office switch 52 is also connected to an Internet Module 74 which is connected to the Internet 84. (Col. 5, ll. 24-50.) A conventional telephone call can be made over the PSTN using conventional dialing or a telephone call can be made over the internet by dialing the special prefix that identifies the call as an Internet call. (Col. 5, ll. 8-16, col. 5, l. 51 to col. 6, l. 45.)

Jonas

14. Jonas relates to a system and method that enables data packets to be transmitted over a bypass circuit-switched telephone network between two computers connected to a public packet-switched network, such as the Internet. (Abstract; col. 1, ll. 8-12.) The source computer designates data packets to be transmitted over the bypass network. (Abstract.) The source router detects these data packets, establishes a connection to the destination router via the bypass network, and transmits the data packets to the destination router via the bypass network. (Abstract.) The destination router then transmits the data packets to the destination computer. (Abstract.)

15. Jonas explains that security is one problem associated with transmitting data packets over the Internet. (Col. 2, l. 1 to col. 3, l. 3.)

"An additional problem which occurs when communicating across public packet-switched networks, such as the Internet, is the presence of 'delays' or pauses which occur when a packet must wait for transmission-related resources to become available at individual routers or nodes along its path" (Col. 3, ll. 4-9.) These delays can be caused by network congestion. (Col. 3, ll. 9-11.) "A user transmitting or receiving critical data across a network may not be willing to tolerate these delays. Accordingly, there exists a need for a method and system to enable computer users connected to a public packet-switched network to transmit at least a portion of a communication between hosts on a circuit-switched network with minimal delay time" (Col. 3, ll. 13-20.) "Although such a method may require additional costs and resources, as compared to transmitting solely over the Internet, these costs may be justified in light of the critical nature of the data being transmitted." (Col. 3, ll. 20-23.) Jonas further explains that one "object of the present invention to provide a method and system for avoiding the delays inherent in a public packet-switched network by providing a bypass mechanism for secret and/or critical data traffic which requires minimal transmission delay." (Col. 3, ll. 30-34.)

16. Figure 1 (below) shows a block diagram of a typical system architecture. (Col. 4, ll. 1-3.)

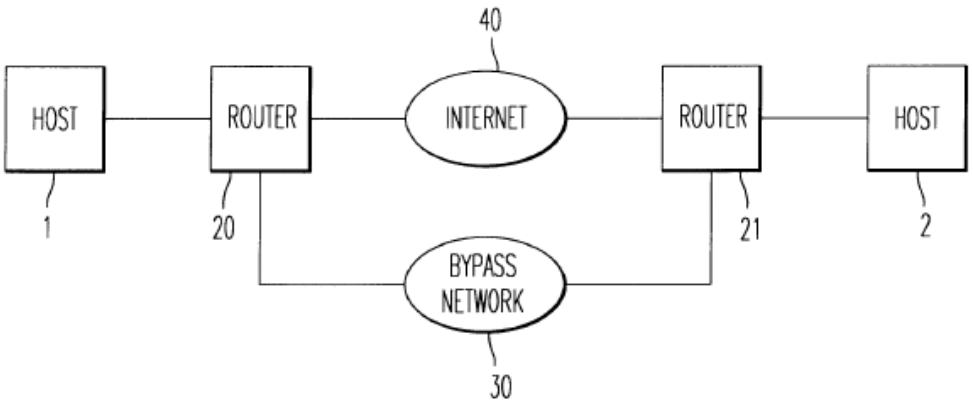


FIG. 1

17. In normal operation, hosts 1 and 2 transmit data to each other through routers 20 and 21 over the Internet 40. (Col. 4, ll. 13-14.) However, on occasion the transmitting host may wish to transmit secret data over the bypass circuit-switched telephone network 30. (Col. 4, ll. 14-16.) The host "may also wish to transmit via the bypass network if the delay time over available paths on the Internet is unacceptable, such as for interactive or other time-critical applications." (Col. 4, ll. 17-20.)

18. Jonas states that several methods may be used for designating a packet to be sent over the bypass network 30. (Col. 4, ll. 41-51.) "Preferably, packets to be transmitted over the bypass network 30 are so designated in the IP header 100." (Col. 4, ll. 42-44.) "Alternatively, specialized applications for transmitting secret or time critical data may connect to a specific port of the router's 20 operating system. This port is preconfigured to reliably route the data over the

bypass network." (Col. 4, ll. 44-48.) "A third method for designating a packet for the bypass network is to transmit the message to the router with a special internet source address or destination address." (Col. 4, ll. 48-51.)

19. Jonas teaches that "[o]nce a connection between source and destination routers 20 and 21 has been established, the source router 20 will monitor the data packet traffic between the source and destination routers." (Col. 5, ll. 45-48.) If there is no activity for a preset amount of time, the source router 20 will disconnect the circuit-switched connection. (Col. 5, ll. 48-52.)

20. Jonas further teaches that:

> Certain applications, may wish to dynamically take advantage of both the inherent cost benefit of using the packet-switched Internet and the minimal delay time of circuit-switched telephone networks. This is accomplished by having the system monitor the transmission delay between the source router 20 and destination router 21. If this delay rises above a threshold value the source router 20 will establish a connection over the bypass network 30. The source router 20 may detect the transmission delay to the destination router 21 using a variety of measures known to those skilled in the art, including topological delay time for the transmission, cost, or the number of gateways through which the network path traverses ("hops"). While transmitting over the bypass network 30, the source router 20 may continue to monitor the delay time between the source router 20 and destination

> router 21 by sending occasional "ping" messages to the destination router 21 and monitoring delay times of any response packets.

(Col. 5, l. 53 to col. 6, l. 3.)

Farese

21. Farese relates to a technique for use in an ISDN (Integrated Services Digital Network) communications system that permits a "host computer to dynamically change the ISDN access path between a packet switched connection and a circuit switched connection during an ongoing host session with the user in order to provide a particular ISDN connection that is most suited to the communication requirements of a current task being executed by the host computer during the session." (Col. 1, ll. 11-18; *see also* col. 6, ll. 35-42; col. 6, l. 58 to col. 7, l. 13; col. 11, ll. 53-62; col. 13, ll. 3-10.) A multitude of users can dynamically change between circuit and packet switched connections in accordance with communication requirements of each user. (Col. 13, ll. 3-10.) The dynamic changing of the ISDN access path "does not disrupt the host session and is substantially transparent to the user." (Abstract; *see als*o col. 6, ll. 45-50.)

22. Farese teaches that ISDN provides both voice and data telephonic services. (Col. 1, ll. 20-23.) "Within the ISDN, an ISDN access line connects each caller and an ISDN switch located at a central office." (Col. 1, ll. 27-28.) "In one configuration, i.e[.] basic access, an ISDN access path consists of two ISDN 'B' digital channels and one ISDN

'D' digital channel." (Col. 1, ll. 28-31.) "The 'D' channel can only carry packets; while each of the 'B' channels can carry either packets or continuous (circuit switched) signals." (Col. 1, ll. 33-36.) Farese further teaches that, "[w]ith this arrangement, an ISDN switch can provide either a circuit switched connection or a packet switched connection to a caller." (Col. 1, ll. 47-49.) A circuit switched connection can only occur on the "B" channel. (Col. 1, ll. 49-54.) "In contrast, a packet switched connection merely relies on queuing packets of data at an ISDN switch for transmission between a caller, frequently a user, and a called party, typically a host computer, and then sequentially transmitting those packets, from point to point within the packet network that forms part of the ISDN as transmission capacity becomes available therebetween." (Col. 1, ll. 56-63.) Regarding Figure 1, Farese states that "[a]lthough a single ISDN switch [32] is shown at one central office [30], this switch would in actuality likely be replaced by an ISDN network that contains multiple ISDN switches inter-connected by appropriate end-to-end transport and toll switching facilities."

23. Farese teaches that circuit switched and packet switched connections each provide different advantages and drawbacks. (Col. 2, ll. 4-7.) "[A] circuit switched connection provides a continuous transmission path from the caller to the called party throughout the duration of a call. Such a connection imparts relatively little, if any, transmission delay to any communication carried over the path." (Col. 2, ll. 7-12.)

> "Therefore, circuit switched connections are used in those communication applications, such as illustratively conversational voice traffic or highly interactive data traffic, where any appreciable transmission delay can not be tolerated." (Col. 2, ll. 12-16.) However, Farese teaches that using a circuit switched connection tends to be quite expensive. (Col. 2, ll. 24-31.) In contrast, "by virtue of the potential sharing inherent in packet switched connections . . ., packet switched connections provide a highly economical though delay prone point-to-point transport media." (Col. 3, ll. 33-37.)

ANALYSIS

Claim interpretation

Claim interpretation necessarily precedes the addressing of questions of patentability. *See, e.g., Gechter v. Davidson*, 116 F.3d 1454, 1457 (Fed. Cir. 1997) ("Implicit in our review of the Board's anticipation analysis is that the claim must first have been correctly construed to define the scope and meaning of each contested limitation."). Patent claims in a reexamination proceeding in the USPTO are given their broadest reasonable interpretation consistent with the patent disclosure. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

Interpretation of means-plus-function limitations

Means-plus-function claim language must be construed in accordance with 35 U.S.C. § 112, ¶ 6 by "look[ing] to the specification and interpret[ing] that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the

specification provides such disclosure." *In re Donaldson Co., Inc.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc). "Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations." *Golight, Inc. v. Wal-Mart Stores*, 355 F.3d 1327, 1334-35 (Fed. Cir. 2004) (quoting *Asyst Techs., Inc. v. Empak, Inc*., 268 F.3d 1364, 1370 (Fed. Cir. 2001)).

> The first step in construing a means-plus-function limitation is to define the particular function of the claim limitation . . . .
>
> The next step in construing a means-plus-function claim limitation is to look to the specification and identify the corresponding structure for that function. "Under this second step, 'structure disclosed in the specification is "corresponding" structure only if the specification clearly links or associates that structure to the function recited in the claim.'"

Id. at 1333-1334 (citations omitted).

A structure in the prior art may be equivalent to a corresponding structure described in a specification if the structure in the prior art performs the identical function recited in the "means-plus-function" limitation in substantially the same way as in the corresponding structure with substantially the same result. *Kemco Sales, Inc. v. Control Papers Co., Inc.*, 208 F.3d 1352, 1364 (Fed. Cir. 2000).

"Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function . . . . Further, [using] the word 'means' in a claim limitation creates a presumption that 35 U.S.C. § 112 paragraph 6 applies." *Welker Bearing Co. v. PHD, Inc*., 550 F.3d 1090, 1095-96 (Fed. Cir. 2008) (internal citations and quotation marks omitted).

Interpretation of specific claim limitations

The interpretation of the following limitations of claim 34 is at issue (with emphasis and reference numerals added by Appellant (App. Br. 12)):

[5] **means** responsive to a control signal **for transferring to a line-switching transfer or a packet-switching transfer** to the second end terminal;

[6] **said means** responsive to a control signal **changing-over** to a line-switching data transfer or a packet-switching transfer **during the existing transfer** with the presence of said control signal.

Appellant argues that the Examiner has misapplied 35 U.S.C. § 112, ¶ 6. (App. Br. 9, 14, 15, 17, 18, 20, and 21; Reply Br. 3-6.) According to Appellant, the corresponding structure in the '453 patent specification for the "means responsive to a control signal for transferring to a line-switching transfer or a packet-switching transfer to the second end terminal" is the control device 71 having a change-over control unit 711. (App. Br. 14, 15, 17, 18, 20, and 21; Reply Br. 3-6.) Appellant further contends that the change-over control unit 711 must be "configured '**to monitor the bandwidth of a transfer** and on understepping or exceeding a certain bandwidth and/**or in the event of a time delay when forwarding IP data packets** to automatically release a control command to change over to the relevant other type of transfer.'" (App. Br. 14 (quoting col. 9, lines 37-42 of the '453 patent); *see also* App. Br. 17, 18, 20; Reply Br. 3-6.)

The Examiner acknowledges that, for the "means for transferring" limitation recited by [5] and [6] above, the corresponding structure is control device 71 because "[t]he function that corresponds to the 'control device 71' structure is the changing-over function." (Ans. 10.) However, the Examiner

disagrees with Appellant's interpretation that the corresponding structure must also be "configured to monitor the bandwidth of a transfer and on understepping or exceeding a certain bandwidth and/or in the event of a time delay when forwarding IP data packets to automatically release a control command to change over to the relevant other type of transfer." (Ans. 10.)

The recited function of the "means" in [5] and [6] above is "transferring to a line-switching transfer or a packet-switching transfer to the second end terminal." Next, the corresponding structure set forth in the '453 patent specification that performs this function is the control device 71, and equivalents thereof. (*See* FF 7-10.) The '453 Specification describes a switch 7 that is "part of both a packet-switching network (internet) and a line-switching network (telephone network)" (col. 8, ll. 17-19) and includes an IP switch 72, a line switching device 73, and a control device 71 that produces "internal control commands, as to whether a packet switching is to take place through the IP switch [72] or a line-switching is to take place through the line switching device 73" (col. 8, ll. 53-56). (FF 7-8.) Control device 71 is "substantially a switch." (Col. 8, ll. 56-57; FF 8.) "To change from packet switching to line switching, first at the command of the control unit 71, a connection is made via the line-switching unit 73 (bypass) with another switch (destination switch)." (Col. 9, ll. 42-45; FF 10.) "[A] line-switching transfer takes place to the switch which represents the other side of the line-switching connection until a control command again reaches the device 71 to switch over again to packet switching." (Col. 11, ll. 24-28; FF 10.) Thus, we agree with the Examiner that the corresponding structure is control device 71.

Like the Examiner, we disagree with Appellant's argument that the corresponding structure also must be "configured to monitor the bandwidth of a transfer and on understepping or exceeding a certain bandwidth and/or in the event of a time delay when forwarding IP data packets to automatically release a control command to change over to the relevant other type of transfer."

The '453 patent specification further teaches that the control device 71 includes a change-over control unit 711 that "monitors and controls which open connections are present (i.e., which and how many data channels are connected) and which bandwidth the individual data channels require." (Col. 8, ll. 60-64; *see also* FF 8.)

As one option, the '453 patent specification teaches that, "[t]hrough a control command which is sent by an end terminal or another switch and for example triggered by a user by pressing a certain button on the terminal or by the network management system, the type of communication is switched over to line-oriented or packet-oriented communication." (Col. 9, ll. 23-28; FF 9.) The control unit 71 compares the incoming data with stored commands and then the change over to a different type of switching is carried out. (Col. 9, ll. 29-35; FF 9.) "Alteratively, [sic] it can also be possible for the change-over control device 711 to monitor the bandwidth of a transfer and on understepping or exceeding a certain bandwidth and/or in the event of a time delay when forwarding IP data packets to automatically release a control command to change over to the relevant other type of transfer." (Col. 9, ll. 35-41; FF 9.)

The monitoring and control function performed by change-over control unit 711 is a different function than the function recited by the "means for transferring" in [5] and [6] above -- namely "transferring to a line-switching transfer or a packet-switching transfer to the second end terminal." While the monitoring and control function may be used in conjunction with the switching function, it is not required by the switching function. In addition, a change-over based on the bandwidth monitoring of change-over control unit 711 is described merely as an alternative to other embodiments where, for example, change-over commands may be initiated manually by a user or be initiated by the network management system. In other words, the '453 patent does not describe the bandwidth monitoring of the change-over control unit 711 as a required feature in changing over to a different type of transfer. Accordingly, we do not agree that the change-over control unit 711, and more particularly the described alternative monitoring and control function, must be construed as corresponding structure for the "means for transferring" recited by limitations [5] and [6] of claim 34. And even if the change-over control unit 711 itself were to be construed as part of the corresponding structure, its described alternative monitoring and control function would not.

In addition, we note that claim 35, which depends from claim 34, further recites (with emphasis added) a "means to produce the control signal for transferring to a line-switching transfer or a packet-switching transfer to the second end terminal, *said control signal being produced automatically when demands on the quality of the data transfer are understepped or exceeded*." The recited "demands on the quality of the data transfer" is

broadly drafted, but would at least include "a certain bandwidth." Thus, the function recited by claim 35 would at least include the function performed by the alternative monitoring and control feature of the change-over control unit 711. Therefore, claim differentiation further supports the conclusion that the monitoring and control feature of change-over control unit 711 is not required by independent claim 34.

Accordingly, we agree with the Examiner that, under the proper application of 35 U.S.C. § 112, ¶ 6, the "means for transferring" recited by limitations [5] and [6] of claim 34 does not need to be "configured to monitor the bandwidth of a transfer and on understepping or exceeding a certain bandwidth and/or in the event of a time delay when forwarding IP data packets to automatically release a control command to change over to the relevant other type of transfer."

§ 103 Rejection

Teachings of the combined references

With respect to the second issue, we agree with the Examiner that the combination of White and Jonas or Farese teaches or suggests a "[5] means responsive to a control signal for transferring to a line-switching transfer or a packet-switching transfer to the second end terminal; [6] said means responsive to a control signal changing-over to a line-switching data transfer or a packet-switching transfer during the existing transfer with the presence of said control signal."

As previously discussed, we disagree with Appellant's claim construction argument that the monitoring and control functions of the

change-over control unit 711 are required by the "means for transferring" recited by limitations [5] and [6] of claim 34. Therefore, we do not address these arguments further with respect to the disclosures of White, Jonas, or Farese.

Appellant argues that White does not disclose or suggest "that the routing of an ***already existing*** call [can] be changed from the PSTN to the Internet, or vice versa, following its initiation." (App. Br. 13.) Appellant also argues that White "discloses no switching apparatus having any type of change-over control unit."(App. Br. 14.)

The Examiner acknowledged that White does not explicitly teach a change-over from a line-switch connection to a packet-switched connection during the existing transfer. (Ans. 6, 11, 13.) However, as the Examiner pointed out, "the rejection and specifically the teaching of 'during the existing transfer' was based on a combination of White and a secondary reference." (Ans. 11.) The Examiner found that White teaches that "a call that originates as a line-switched call from a POTS telephone may be changed into a packet switched call over the Internet by means of a control signal generated by the user dialing a special access code (e.g., *82)" (Ans. 5; *see also* FF 11-13) and "[a]lternatively, White suggests that the change-over may be caused independently by the telephone company providing its own control signal" (Ans. 5, *see also* FF 11). Thus, the Examiner found that, although "White shows the changing over before the two parties are connected but within a single telephone call" (Ans. 6), it also suggests that the telephone company could perform the change-over and that the change would be transparent to the customer. (Ans. 6; *see also* FF 11.)

In addition, the Examiner found that "it was well known in the art to change over to a line-switching or packet-switching during an existing transfer during a communication in response to a control signal," (Ans. 6) as disclosed by Farese and Jonas. (Ans. 6; *see also* FF 14-23.) Specifically, Farese teaches that "a multitude of users can dynamically change between circuit and packet switch [sic] in accordance with communication requirements of each user" (Ans. 6; *see also* Ans. 19-22; FF 21) and Jonas teaches that "once a connection between a source and destination has been established the source can monitor for transmission delay and will dynamically connect to a bypass network (circuit switch)" (Ans. 7; *see also* Ans. 15-19; FF 14-20). We agree with the Examiner.

In addition, the Examiner correctly found that White discloses a control device (i.e., the central office switch) that performs the function of changing over from a PSTN connection to an Internet connection. (Ans. 12-15.) The Examiner also correctly found that central office switch of White is the equivalent of the claimed "means for transferring" because it performs the same function in substantially the same way and produces substantially the same result as the control device 71 disclosed in the '453 patent. (Ans. 14-15; *see also* FF 12-13.)

Appellant's arguments regarding Jonas and Farese (App. Br. 15-21) are based on the claim construction argument which we have previously rejected. However, with respect to both Jonas and Farese, we note that the Examiner has correctly identified a control device in each of these references (Ans. 15-17, 20-21; *see also* FF 14-23) that performs the recited function of transferring to a line-switching transfer or a packet-switching transfer in

substantially the same way and produce substantially the same result as the control device 71 disclosed in the '453 patent.

In sum, we agree with the Examiner (Ans. 5-7; 11-31) that the combination of White and Jonas or Farese teach or suggest a "means for transferring" as recited by limitations [5] and [6] of claim 34.

Combination of the references

With respect to the third issue, we agree with the Examiner (*see*, *e.g.*, Ans. 6, 7, 22-31; *see also* FF 11-23) that it would have been obvious to modify White to allow a change-over from line-switching to packet switching, or vice-versa, during an existing transfer, as explicitly taught by Jonas and Farese. As the Examiner reasoned, this combination would "dynamically take advantage of both the inherent cost benefit of using the packet-switched Internet and the minimal delay time of circuit-switched telephone network depending on the connection." (Ans. 7; *see also* FF 11-23.) We also agree with the Examiner that, in view of the disclosure in White that the telephone company could perform the change-over transparently to the customer, it would have been obvious that "the Telco may have control when the change-over is implemented." (Ans. 6.)

Appellant argues that the Examiner "failed to specify an objectively defined problem to be solved, and failed to consider the degree of skill that was needed to solve that problem." (App. Br. 11; *see also* App. Br. 22-31, Reply Br. 2, 6-10.) In particular, Appellant argues that "the Examiner's analysis is fundamentally flawed under *KSR* and fails to identify, or to consider, the problem that the Schindler patent inventors confronted when making the claimed subject matter, and fails to analyze the degree of skill

that was needed to solve that problem given the information available and then-conventional wisdom in the art." (App. Br. 24; *see also* App. Br. 25, 26, 30, Reply Br. 2, 6.) We do not agree.

The Examiner articulated a reason with rational underpinnings as to why one of ordinary skill in the art would combine the teachings of White and Jonas or Farese (Ans. 6, 7, 24-31). *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Specifically, the Examiner found that it would have been obvious to modify White to allow, during an existing transfer, for a change-over from packet-switching to line-switching, or vice versa, as taught by both Jonas and Farese in order to dynamically take advantage of the lower cost of using the packet-switched Internet or the minimal time delay of using a circuit-switched telephone network. (Ans. 7.) It is not necessary for the Examiner to address the precise problem addressed by the Schindler inventors in articulating a reason for combining the references. Indeed, *KSR* instructs that "[u]nder the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id.* at 420.

Appellant also argues that the teachings of Jonas or Farese can not be applied to White without "totally changing the principle of operation of White." (App. Br. 27, 29.) We do not agree. Instead, for the reasons stated by the Examiner (Ans. 22-30), we conclude that the principle of operation of White would not be changed in the combination with the teachings of either Jonas or Farese.

Appellant further argues that Jonas fails to teach or suggest that its routers are suited for telephone calls or other real-time applications (App. Br. 28; Reply Br. 8). We do not agree. Instead, for the reasons stated by the Examiner (Ans. 24-25; *see also* FF 14-20), we conclude that Jonas does teach real-time applications.

Additionally, Appellant argues for the first time in the Reply Brief that Farese does not disclose carrying telephone calls over a packet-switching network (Reply Br. 9). Specifically, Appellant argues that Farese "has nothing to do with connectionless Internet communications" (Reply Br. 9) because "ISDN is a connection-oriented line-switched network, not a packet-switching network" (Reply Br. 9). Although ISDN, including an ISDN "D" channel, can carry data packets, Appellant argues that this transmission of packets is not "packet-switching transferring" within the meaning of the claims. (Reply Br. 9.)

Under the broadest reasonable interpretation consistent with the Specification of the '453 patent, we do not agree with Appellant's arguments. The '453 patent does not specifically define a "packet-switching network" or a "packet-switching transfer." Nor does the '453 patent describe a packet-switching network or a packet-switching transfer in a manner that requires the exclusion of ISDN. The '453 patent does not characterize ISDN as a connection-oriented line-switched network, and Appellant does not point to convincing evidence of record to support this characterization. The '453 patent describes "packet-switching exchanges" as connection-less. (FF 2.) However, this feature is not described by the '453 patent as required for a "packet-switching *network*." In other words, the '453 patent does not define

a "packet switching network" so as to exclude networks that are not connection-less.

Also, Figure 1 of the '453 patent supports an interpretation that a "packet-switching network" may include ISDN. Specifically, Figure 1 shows switch 7a for connecting to ISDN/PSTN, to the *Internet over ISDN/PSTN*, and to the Internet. (FF 6.) Figure 3 provides similar support. Thus, the '453 provides support for an interpretation that ISDN may be considered as either a line-switching network or a packet-switching network within the meaning of the claims.

As further support that ISDN may be considered a packet-switching network,[4] Farese teaches that "a packet switched connection merely relies on queuing packets of data at an ISDN switch for transmission between a caller, frequently a user, and a called party, typically a host computer, and then sequentially transmitting those packets, *from point to point within the packet network that forms part of the ISDN* as transmission capacity becomes available therebetween" (Col. 1, ll. 56-63 (emphasis added); FF 22.)

Next, the '453 patent describes "packet-switching transfer" broadly enough to encompass ISDN. For example, in discussing the ISDN network of Farese, the background section of the '453 patent states that "a line-switching transfer is carried out on a B channel and a packet-switching transfer is carried out on the D channel." (FF 3; *see also* FF 21-23.) Thus, we conclude that ISDN, e.g., an ISDN D channel, transmitting packets may be considered a packet-switching transfer within the meaning of the claims.

[4] Appellant already states that ISDN may be considered a line-switching network. (Reply Br. 9.)

Although broad, this interpretation is reasonable and supported by the '453 patent specification.

Accordingly, we conclude that the Examiner has properly combined White and Jonas or Farese.

Evidence of non-obviousness

With respect to the fourth issue, Appellant argues (App. Br. 32-44; Reply Br. 10-19) that the Examiner did not properly account for evidence presented regarding secondary considerations. In particular, Appellant argues that: 1) the Examiner did not present a "strong case" of obviousness; 2) the McNiff and Thornton Patents demonstrate a long-felt but unsolved need; and 3) the Examiner improperly dismissed the Paetsch and Schindler declarations. (App. Br. 32-44; Reply Br. 6, 10-19.) We do not agree.

For the reasons previously discussed regarding the content of and reasons to combine the teachings of the applied prior art, we conclude that the Examiner presented a strong case of obviousness.

Next, on this record, we find the McNiff and Thornton patents to be weak evidence of the long-felt need asserted by Appellant. Appellant contends that these two later-filed patents claim broader inventions than recited by claim 34 of the '453 patent and thus demonstrate that top researchers in the field were still struggling with the problems identified in the '453 patents years after its filing and that those researchers ultimately made the same discovery as the '453 patent. (App. Br. 32-43; Reply Br. 13-17.)

However, Appellant has not provided any persuasive evidence on the record to support Appellant's theory regarding how McNiff and Thornton demonstrate a long-felt but unsolved need. For example, Appellant has not presented any persuasive evidence to corroborate the assertion that top researchers were still struggling with the same problem years after the filing of the '453 patent. As a further example, there is no evidence on the record regarding the McNiff and Thornton inventors' knowledge or awareness of the state of the art, whether these inventors were indeed top researchers, or whether these inventors had devised a solution to the problem at an earlier time. Instead, Appellant merely presents attorney argument. In addition, we note that the prior art reveals that the problem of delay on a packet-switched network was known, as was the solution -- namely, switching to a circuit-switched network. (FF 14-23.) Thus, on this record, McNiff and Thornton are at best weak evidence of a long-felt but unsolved need.

Finally, we conclude that the Examiner properly considered the declaration evidence submitted by Appellant. Objective evidence of nonobviousness (also called “secondary considerations”) must always be considered in making an obviousness determination, *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538-39 (Fed. Cir. 1983), but it is not necessarily conclusive, *Ashland Oil, Inc. v. Delta Resins & Refrac., Inc.*, 776 F.2d 281, 306 (Fed. Cir. 1985). The Examiner reviewed both the Paetsch declaration (Ans. 24-25; *see also* Final Office Action at 4, 5, and 17-19) and the Schindler declaration (Ans. 34-35; *see also* Final Office Action at 3, 4, 33-35). We agree with the Examiner (Ans. 24-25) that Paetsch's conclusory declaration is not convincing with respect to its

assertions about the teachings of Jonas. We also agree with the Examiner (Ans. 34-35) that Appellant has not, through the Schindler declaration or otherwise, demonstrated a legally sufficient nexus between the merits of the claimed invention and the evidence of commercial success.

Accordingly, we conclude that the Examiner has properly considered Appellant's proffered evidence of non-obviousness. Weighing all of the evidence, including Appellant's evidence of secondary considerations, we reach the same conclusion as the Examiner with respect to the obviousness of independent claim 34.

Dependent claims

Appellant separately argues dependent claim 35 (App. Br. 31-32). Claim 35 depends from claim 34 and further recites a "means to produce the control signal for transferring to a line-switching transfer or a packet-switching transfer to the second end terminal, said control signal being produced automatically when demands on the quality of the data transfer are understepped or exceeded."

With respect to dependent claim 35, Appellant argues that the corresponding structure is limited to that of independent claim 34 "with the additional restriction that corresponding 'change-over control unit 711' be configured 'to monitor the bandwidth of a transfer and on understepping or exceeding a certain bandwidth . . . to automatically release a control command to change over to the relevant other type of transfer.'" (App. Br. 31.) Appellant further argues that White, Jonas, and Farese do not teach or suggest this type of structure. (App. Br. 31-32.)

The Examiner contends that, under 35 U.S.C. § 112, ¶ 6, the claim "do[es] not require exceeding a certain bandwidth, but merely require[s] determining that the demands of quality were exceeded." (Ans. 32.) The Examiner finds that the combination of White and Jonas disclose monitoring the transmission delay between a source router 20 and destination router 21 and, if the delay rises above a threshold value, the source router 20 establishes a connection over the bypass network 30. (Ans. 7, 31; *see also* FF 14-20.) The Examiner finds that delay is a quality factor, and thus concludes that Jonas discloses "producing a control signal automatically when the demands of quality are understepped or exceeded." (Ans. 31.) We agree with the Examiner.

The function of the means recited by claim 35 is "to produce the control signal for transferring to a line-switching or a packet-switching transfer to the second end terminal." We agree with Appellant that the corresponding structure is change-over device 711. (*See* FF 7-10.) However, we agree with the Examiner that, by using the broad term "demands of quality," claim 35 is not limited to the "bandwidth of a transfer." The disclosure of a delay threshold in Jonas also meets the recited "demands of quality." Thus, we agree with the Examiner that Jonas discloses the means limitation recited by claim 35.

Appellant does not present separate arguments for dependent claims 36 and 38. (*See* App. Br. 32.) Therefore, these claims fall with claim 34, from which they depend.

DECISION

The rejection of claims 34-36 and 38 under 35 U.S.C. § 103(a) is affirmed.

Requests for extensions of time in this *ex parte* reexamination proceeding are governed by 37 C.F.R. § 1.550(c). *See* 37 C.F.R. § 41.50(f).

AFFIRMED

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cc:

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