

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ADVANCED MICRO DEVICES, INC., and
PENSANDO SYSTEMS, INC.,
Petitioner,

v.

XTREAMEDGE, INC.,
Patent Owner.

IPR2025-00479
Patent 10,944,634 B1

Before KARL D. EASTHOM, JUSTIN T. ARBES, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Advanced Micro Devices, Inc., and Pensando Systems, Inc.
(collectively, “Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–20 of U.S. Patent No. 10,944,634 B1 (Ex. 1001, “the ’634 patent”) pursuant to 35 U.S.C. § 311(a). Patent Owner

XtreamEdge, Inc., filed a Preliminary Response (Paper 8, “Prelim. Resp.”) pursuant to 35 U.S.C. § 313. Patent Owner’s request for discretionary denial was denied and the Petition was referred to the Board. Paper 10.

Pursuant to 35 U.S.C. § 314(a), the Director may not authorize an *inter partes* review unless the information in the petition and preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” *See* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). For the reasons that follow, we do not institute an *inter partes* review.

B. Related Matters

The parties indicate that the ’634 patent is the subject of *Concurrent Ventures, LLC v. Advanced Micro Devices, Inc.*, No. 24-cv-00335 (W.D. Tex.) (“the district court case”). *See* Pet. 79; Paper 4, 2. Petitioner filed petitions challenging other patents asserted in the district court case in IPR2025-00223, IPR2025-00478, and IPR2025-00486.

C. The ’634 Patent

The ’634 patent discloses a “method for network connection optimization.” Ex. 1001, code (57). “A TCP/IP (transmission control protocol/Internet protocol) network connection between two endpoints starts off without knowledge of the performance of the connection and the effect of bandwidth realized between the peers,” but “[t]he protocol stack builds up this knowledge over time via various algorithms.” *Id.* at col. 1, ll. 6–11. According to the ’634 patent, prior art algorithms were inadequate because

they either took too long to reach “full effective bandwidth capacity” or were faster but “compute intensive and more difficult to implement.” *Id.* at col. 1, ll. 11–23. The ’634 patent purports to improve on those systems by “using past or recent tuning results when the same network connection or another network connection in a similar geographic area . . . is made,” thereby “shorten[ing] the startup time.” *Id.* at col. 2, ll. 52–57.

Figure 3 of the ’634 patent is reproduced below.

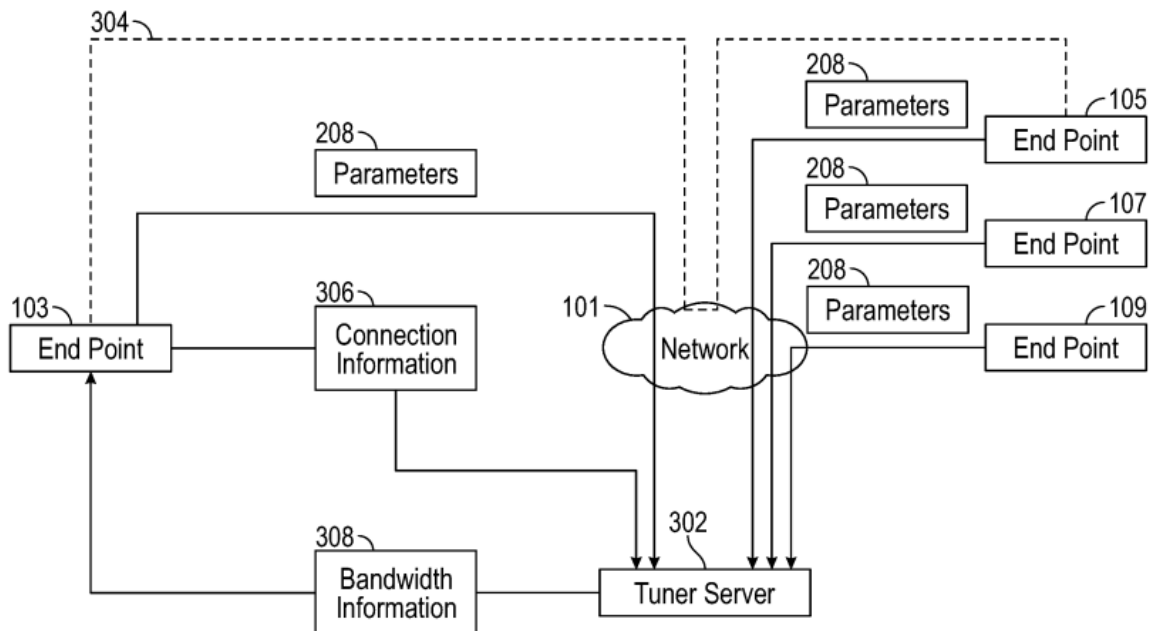


FIG. 3

Figure 3 depicts end points 103, 105, 107, and 109, and tuner server 302, communicating with each other over network 101. Ex. 1001, col. 4, ll. 35–40. End point 103 sends to tuner server 302 parameters 208 “relating to network connections” between end point 103 and other end points. *Id.* at col. 3, ll. 3–5 (end points send “current bandwidth information and/or statistics to the tuning server”), col. 4, ll. 35–40, col. 6, ll. 1–9, Fig. 5 (steps 502 and 504). “Any suitable parameters to assist in congestion control may be stored in addition to parameters associated with bandwidth of [a] network

connection.” *Id.* at col. 5, ll. 29–31. When end point 103 intends to establish a new network connection with end point 105, it sends connection information 306 to tuner server 302. *Id.* at col. 4, ll. 51–54, col. 6, ll. 10–12, Fig. 5 (step 506). Tuner server 302 then “compare[s] the intended network connection 304 to other network connections” and “may find that the intended network connection 304 . . . matches one of the other network connections or a geographical area of one of the other network connections.” *Id.* at col. 4, ll. 55–64, col. 6, ll. 32–42, Fig. 6 (steps 606 and 608). If so, tuner server 302 “determines a communication bandwidth [for the new connection] and sends . . . bandwidth information 308, or alternatively sends one or more of the parameters or information derived from the parameters,” to end point 103. *Id.* at col. 4, l. 64–col. 5, l. 2, col. 6, ll. 45–59, Fig. 6 (steps 612, 614, and 618). “Then, the requesting endpoint 103 sets the initial transmission bandwidth accordingly for the network connection 304 to the endpoint 105.” *Id.* at col. 2, l. 65–col. 3, l. 2, col. 5, ll. 2–4, 50–52, col. 6, ll. 17–20 (“the endpoint initiates the next network connection, with an initial transmission bandwidth based on the received parameter value(s)”), Fig. 5 (step 510).

D. Illustrative Claim

Challenged claims 1, 8, and 15 of the ’634 patent are independent. Claims 2–7 depend from claim 1, claims 9–14 depend from claim 8, and claims 16–20 depend from claim 15. Claim 1 recites the following (with letter designations used in the Petition to refer to the various limitations):

1. [pre] A method for network connection optimization, comprising:

[1a] collecting, at a first endpoint device coupled to a network, parameter values for determination of bandwidth of network connections to further endpoint devices;

[1b] determining at a tuner server, distinct from the first endpoint device and the further endpoint devices, that a next network connection from the first endpoint device to a second endpoint device matches a geographical area of a past network connection; and

[1c] initiating the next network connection, from the first endpoint device to the second endpoint device, based on the determination at the tuner server, with a transmission bandwidth based on the parameter values for the past network connection.

E. Evidence

Petitioner relies on the following prior art:

U.S. Patent No. 7,742,499 B1, issued June 22, 2010 (Ex. 1004, “Erskine”);

U.S. Patent No. 8,000,276 B2, issued Aug. 16, 2011 (Ex. 1005, “Scherzer”); and

U.S. Patent No. 9,661,553 B2, issued May 23, 2017 (Ex. 1006, “Gillett”).

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–20 of the ’634 patent would have been obvious on the basis of prior art printed publications under 35 U.S.C. § 103:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–20	103	Erskine
1–20	103	Scherzer
1–20	103	Scherzer, Gillett

II. ANALYSIS

A. *Legal Standards*

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” *See* 35 U.S.C. § 103; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, secondary considerations, such as “commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”¹ *Id.* When conducting an obviousness analysis, we consider a prior art reference “not only for what it expressly teaches, but also for what it fairly suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination based on a combination of references requires finding “both ‘that a skilled artisan would have been

¹ Patent Owner does not present any arguments regarding objective indicia of nonobviousness. *See generally* Prelim. Resp.

motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (quoting *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012)); *see KSR*, 550 U.S. at 418 (for an obviousness analysis, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”). Also, “[t]hough less common, in appropriate circumstances, a patent can be obvious in light of a single prior art reference if it would have been obvious to modify that reference to arrive at the patented invention.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

“Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to *how* or *why* the references would be combined to produce the claimed invention.” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (quoting *Kinetic Concepts*, 688 F.3d at 1368). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *accord In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’” (quoting *In re Lee*, 277 F.3d 1338, 1342 (Fed. Cir. 2002)));

In re Magnum Oil Tools Int’l, Ltd., 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

B. Level of Ordinary Skill in the Art

Petitioner argues that at the time of the ’634 patent (July 2018), a person of ordinary skill in the art would have had “a bachelor’s degree in electrical engineering, computer science, computer engineering, or a similar major with at least two years of experience in the field; or a master’s degree with specialization in the field,” where “[a] person with less education but more relevant practical experience may also meet this standard.” Pet. 7 (citing Ex. 1003 ¶¶ 12–13). Petitioner further argues that a person of ordinary skill in the art would have had knowledge of “[d]esigning and using systems that include endpoint devices (e.g., client devices) and servers for establishing network connections and data transfer,” “[r]ecognizing and applying the client-server architecture,” and “[u]sing and applying concepts from known telecommunication and networking frameworks, protocols and standards, including TCP/IP, IEEE 802.11, VoIP, cellular systems and other known frameworks and standards.” *Id.* (citing Ex. 1003 ¶ 14). Patent Owner does not address the level of ordinary skill in the art in its Preliminary Response. Based on the record presented, including our review of the ’634 patent and the types of problems and solutions described in the ’634 patent and cited prior art, we agree with Petitioner’s definition and apply it for purposes of this Decision. *See, e.g.*, Ex. 1001, col. 1, ll. 4–29

(describing in the “Background” section of the ’634 patent a “network connection between two endpoints” and known methods of reaching “full effective bandwidth capacity” in a network).

C. Claim Interpretation

We interpret each challenged claim

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b). Petitioner notes that it proposed a construction for the claim term “geographical area” in the district court case, but states that it “do[es] not believe proposing a construction for the term is necessary in this proceeding because the relied upon teachings of the prior art references are consistent with examples of ‘geographical area’ included in the ’634 patent [S]pecification.” Pet. 8. Patent Owner argues that “[t]he Board need not engage in express claim construction at this stage of the proceeding.”

Prelim. Resp. 5. We conclude that no express interpretation of any claim term is necessary to determine whether to institute an *inter partes* review in this proceeding. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“Because we need only construe terms ‘that are in controversy, and *only to the extent necessary* to resolve the controversy,’ we need not construe [a particular claim limitation] where the construction is not ‘material to the . . . dispute.’” (citation omitted) (emphasis added)).

D. Obviousness Ground Based on Erskine

Petitioner contends that claims 1–20 are unpatentable over Erskine under 35 U.S.C. § 103, citing the testimony of Mark E. Crovella, Ph.D., as support. Pet. 9–47 (citing Ex. 1003). Patent Owner responds. Prelim. Resp. 5–10. We are not persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground.

1. Erskine

Erskine discloses a “method for adaptive bandwidth management for Voice-Over-IP (VOIP) networks.” Ex. 1004, col. 1, ll. 6–9. Erskine states that existing IP networks “provid[ed] guaranteed quality of service (QoS) levels for end users,” where “[p]rior art call admission control (CAC) generally allow[ed] or disallow[ed] calls to be set up based on the number of current calls and expected call loading,” not “based upon QoS measurements of the actual network performance.” *Id.* at col. 1, ll. 13–21. Erskine’s disclosed method “measur[es] the actual QoS network performance parameters at appropriate locations using known QoS factors in real-time” so that “new calls may be limited and/or redirected, thereby providing the desired or needed quality for existing calls and future calls.” *Id.* at col. 1, ll. 21–26.

Figure 1 of Erskine is reproduced below.

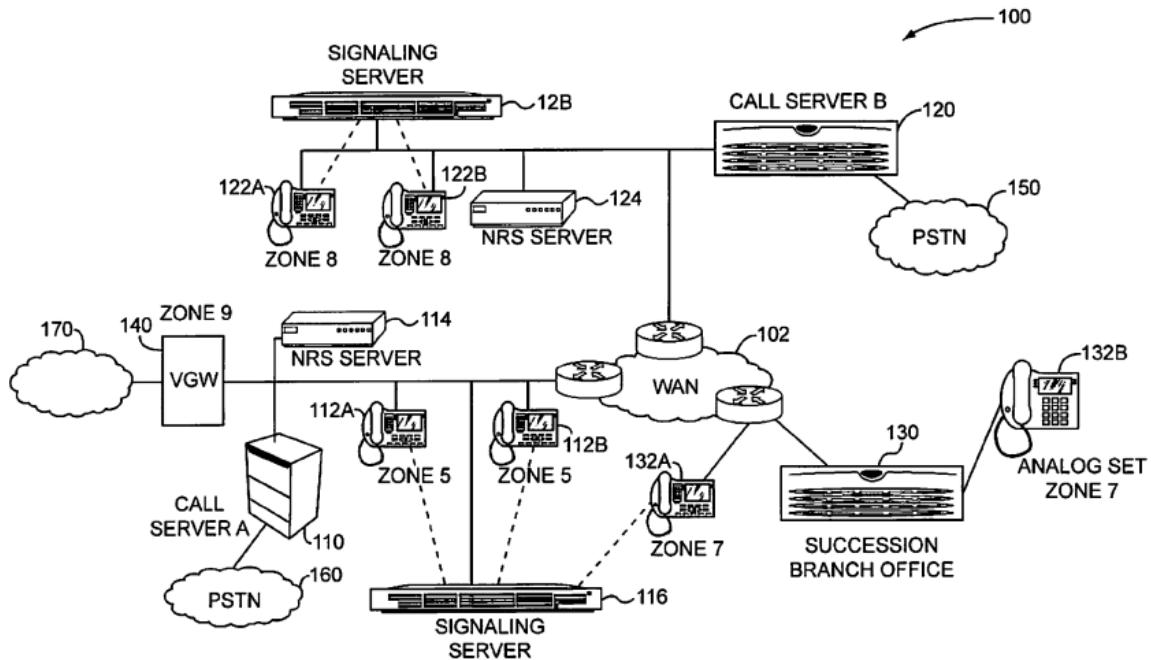


FIG. 1

Figure 1 depicts system 100 divided into different “geographically distinct zone[s]” (labeled as Zones 5, 7, 8, and 9). Ex. 1004, col. 2, ll. 59–61.

“During a communication session (such as a telephone or videophone call or conference), the communication devices 112, 122, 132 communicate with each other . . . through the network 102.” *Id.* at col. 3, ll. 51–55.

Erskine describes the use of a “sliding maximum interzone bandwidth” as follows:

Each link between two respective zones has an initial maximum interzone bandwidth that is used as a baseline to calculate a dynamic bandwidth limit between the two bandwidth zones. If the QoS between the two bandwidth zones is degrading, then the maximum interzone bandwidth between those two zones is reduced as a percentage of the initial value (or prior maximum interzone bandwidth value). This new value is used as the new maximum interzone bandwidth, may be referred to as a “sliding maximum” interzone bandwidth, and is

used for purposes of allowing/disallowing or redirecting any new calls between the two zones.

Ex. 1004, col. 4, ll. 30–40. Communication devices 112, 122, and 132 “monitor, detect and/or calculate one or more [of] various QoS parameters at the device, including packet loss, latency, jitter and R factor,” and transmit the QoS parameters to a call server associated with the respective communication device. *Id.* at col. 4, ll. 51–58, col. 8, ll. 54–56, Fig. 3 (step 302). “The QoS information is then used to adjust the then current sliding maximum interzone bandwidth based upon the QoS information, as appropriate.” *Id.* at col. 4, ll. 62–64, col. 9, ll. 1–9, Fig. 3 (steps 304 and 306). For example, if the QoS for a particular link between zones “degrades,” a “QoS factor is calculated (or recalculated)” and the sliding maximum interzone bandwidth is “reduced in order to preserve or maintain an acceptable QoS between the two zones.” *Id.* at col. 5, ll. 15–28.

The sliding maximum interzone bandwidth “reflects the maximum bandwidth allowable across the interzone link and is utilized to determine whether to accept or reject” a new call. Ex. 1004, col. 9, ll. 9–14. Erskine discloses the following process:

During call processing, the call setup proceeds at the originating end until eventually, the destination network bandwidth zone is known. With knowledge of both the source zone and the destination zone, the source call server consults a QoS data structure (as shown in FIG. 2) . . . to determine if an additional call can be accommodated (or allowed) across the interzone link. This is determined by adding the additional bandwidth required (of the new call) to the current bandwidth between the zones, and comparing to the sliding maximum interzone bandwidth. If this amount is less than the sliding maximum value, then the call tentatively proceeds, and the QoS table is updated with the additional bandwidth used by that call. If the amount exceeds the sliding maximum value, then the call

is blocked by the source call server and an alternative route may be attempted.

Id. at col. 6, l. 55–col. 7, l. 3, col. 9, ll. 15–26, Fig. 3 (steps 308, 310, and 312). A similar procedure occurs at the call server on “the destination end of the call.” *Id.* at col. 7, ll. 4–10.

Figure 2 of Erskine is reproduced below.

SOURCE		DESTINATION		QoS FACTOR	CONFIGURED INTERZONE B/W	SLIDING MAXIMUM B/W	ACTUAL INSTANTANEOUS B/W USED	AVERAGE CALLS/HOUR
ZONE	VPNI	ZONE	VPNI		Kbps	Kbps	Kbps	CALLS/HR
5	33	8	34	100	1000	1000	384	4110
5	33	4	33	100	1000	1000	750	6954
5	33	3	38	45	1000	450	128	1500
5	33	7	44	100	1000	1000	128	1201
5	33	9**	59	100	1000	1000	600	7123
7	44	8	34	100	256	256	109	189
7	44	4	33	100	256	256	0	45
7	44	3	38	55	256	141	128	75
7	44	5	33	100	256	256	128	1201
7	44	9**	59	100	256	256	128	120

FIG. 2

Figure 2 depicts a data structure table of “information maintained by the call server 110,” with each row containing data for a particular interzone link. Ex. 1004, col. 7, l. 64–col. 8, l. 10. As shown in Figure 2, “one or more calls between Zone 5 and Zone 3 are experiencing QoS degradation within Zone 5” (third row) and “one or more calls between Zone 7 and Zone 3 are experiencing QoS degradation within Zone 7” (eighth row), resulting in sliding maximum interzone bandwidths for those links that are much lower than the “configured interzone bandwidth (max allowable)” (i.e., 450 Kbps versus 1000 Kbps for the third row link and 141 Kbps versus 256 Kbps for the eighth row link). *Id.* at col. 8, ll. 21–27.

2. *Claim 1*

Petitioner argues that claim 1 would have been obvious over Erskine. Pet. 11–29. With respect to limitation [1a], Petitioner argues that Erskine teaches collecting, at a “first endpoint device” (i.e., any one of communication devices 112, 122, and 132), “parameter values” (i.e., QoS parameters, such as packet loss, latency, jitter, and R factor) for determination of bandwidth of network connections to “further endpoint devices” (i.e., other communication devices). *Id.* at 11–20. With respect to limitation [1b], Petitioner contends that Erskine teaches determining, at a distinct “tuner server” (i.e., call server), that a “next network connection” from the “first endpoint device” (i.e., a communication device in a particular zone) to a “second endpoint device” (i.e., a communication device in a different zone) “matches a geographical area of a past network connection” (e.g., matches the first row of the data structure table shown in Figure 2, showing data for the interzone link from Zone 5 to Zone 8). *Id.* at 20–26.

We focus on limitation [1c], which is dispositive. Limitation [1c] recites “initiating the next network connection, from the first endpoint device to the second endpoint device, based on the determination at the tuner server, with a transmission bandwidth based on the parameter values for the past network connection.” Limitation [1c] thus imposes two requirements for the “next network connection”: (1) the next network connection must be initiated “based on the determination at the tuner server” (i.e., the determination made in limitation [1b]), and (2) the next network connection must be initiated with a transmission bandwidth that is “based on the parameter values for the past network connection.” As to the first requirement, Petitioner argues that Erskine teaches “initiating a call from a

communication device to a communication device in another zone when the bandwidth of the call fits within the sliding maximum interzone bandwidth” and

in the process of initiating a call, the call server determines that the call matches a geographical area of a past network connection (e.g., a call over the link between Zone-5 and Zone-8) and determines that the call can proceed if the bandwidth necessary for the call added to the current bandwidth is within the sliding maximum interzone bandwidth for that link.

Pet. 26–27 (citing Ex. 1004, col. 3, ll. 44–67, col. 6, l. 55–col. 7, l. 3, col. 8, ll. 36–51, col. 9, ll. 51–59; Ex. 1003 ¶¶ 57–58). As to the second requirement, Petitioner argues that

Erskine determines that a call is to be initiated if the bandwidth necessary for the call added to the current bandwidth is within the sliding maximum interzone bandwidth for that link. . . . In this way, the call proceeds with a bandwidth determined based on the sliding maximum interzone bandwidth for that link. Moreover, the sliding maximum interzone bandwidth is determined based on the QoS parameters. . . . Erskine therefore teaches initiating a call with a bandwidth determined based on the QoS parameters.

Id. at 27–28 (citing Ex. 1004, col. 4, l. 41–col. 5, l. 13, col. 5, l. 38–col. 6, l. 54; Ex. 1003 ¶ 59). Petitioner further asserts that Erskine’s “QoS parameters are for the past network connection” because they are used to determine the QoS factors shown in the Figure 2 data structure table (e.g., for “the link between Zone-5 and Zone-8”). *Id.* at 28–29 (citing Ex. 1004, col. 4, l. 41–col. 5, l. 13, col. 5, l. 38–col. 6, l. 54; Ex. 1003 ¶ 60).

Petitioner has not shown sufficiently that Erskine teaches or suggests the second requirement of limitation [1c], i.e., “initiating the next network connection . . . with a transmission bandwidth based on the parameter values for the past network connection.” Petitioner’s theory is that (1) the QoS

parameters in Erskine are for a “past” connection from one zone to another, (2) the sliding maximum interzone bandwidth is “based on” the QoS parameters, and (3) a new call only proceeds if the transmission bandwidth needed for the call added to the current bandwidth being used over the interzone link is less than the sliding maximum interzone bandwidth, so Erskine therefore teaches a call with a transmission bandwidth determined “based on” the sliding maximum interzone bandwidth (which in turn is determined “based on” the QoS parameters). *See* Pet. 27–28; Ex. 1003 ¶¶ 59–60 (similar testimony from Dr. Crovella).

As Patent Owner points out, however, Erskine only makes “a binary, accept/reject decision as to whether to allow a new call to proceed based on a comparison between the bandwidth needed for the call and a predetermined ‘sliding maximum interzone bandwidth value.’” *See* Prelim. Resp. 6–7. Specifically, the additional bandwidth that would be needed for the call is added to the current bandwidth being used on the interzone link; if the sum of those values is less than the sliding maximum interzone bandwidth for the link, the call “proceeds”; otherwise, it is “blocked.” Ex. 1004, col. 4, ll. 36–40, col. 6, l. 55–col. 7, l. 10, col. 8, ll. 36–43, col. 9, ll. 9–26, col. 10, ll. 23–25 (the sum is compared to the sliding maximum interzone bandwidth “to determine whether enough bandwidth is available to proceed with the new call”), Fig. 3 (steps 308, 310, and 312). Erskine repeatedly refers to the bandwidth for the new call as the amount of bandwidth that is “necessary” or “required” to handle the call. *See, e.g., id.* at col. 1, ll. 43–57 (“an amount of bandwidth necessary to handle the new call”), col. 6, ll. 61–64 (“the additional bandwidth required (of the new call)”), col. 8, ll. 36–40 (“the bandwidth necessary for the new call”), col. 9,

ll. 16–21 (“the anticipated additional bandwidth necessary for the new call”), 54–56 (“the bandwidth amount the new call will utilize (if connected)”), col. 10, ll. 21–23 (same), 41–43 (same), col. 12, ll. 1–2 (“an amount of bandwidth necessary to handle the new call”). It is that value—determined prior to the addition and comparison to the sliding maximum interzone bandwidth—that will be used for the new call if it is allowed to “proceed[.]” *Id.* at col. 6, ll. 64–67 (if the sum is less than the sliding maximum interzone bandwidth, the call “proceeds” and “the QoS table is updated with the additional bandwidth used by that call”). Erskine does not describe the transmission bandwidth for the new call as being based on any parameter values for a past network connection, but rather as “whatever bandwidth the system determined is necessary for the additional call.” *See* Prelim. Resp. 8–9. In other words, the transmission bandwidth needed for a new call is predetermined and independent of whatever the sliding maximum interzone bandwidth is currently. *See id.*

Indeed, Figure 2 of Erskine shows that actual transmission bandwidth being used on a particular interzone link can vary greatly from the sliding maximum interzone bandwidth. *See* Prelim. Resp. 10. For example, the first three rows of Figure 2 show “Actual Instantaneous B/W Used” of 384, 750, and 128 Kbps, where the “Sliding Maximum B/W” values are 1000, 1000, and 450 Kbps, respectively.

We agree with Patent Owner that, at most, Erskine teaches a “bandwidth ceiling” for new calls (i.e., the sliding maximum interzone bandwidth, if there was zero current bandwidth usage). *See* Prelim. Resp. 9–10. But the transmission bandwidth that will actually be used for a new call (if allowed to proceed) is whatever the system determined to be

“necessary” for the call and is independent of the sliding maximum interzone bandwidth for the interzone link. *See id.*

Based on the record before us, Petitioner has not shown sufficiently that Erskine teaches or suggests “initiating the next network connection . . . with a transmission bandwidth based on the parameter values for the past network connection,” as recited in claim 1. Accordingly, Petitioner has not shown a reasonable likelihood of prevailing on its assertion that claim 1 is unpatentable over Erskine.

3. *Claims 2–20*

Similar to limitation [1c], independent claim 8 recites “initiating the next network connection . . . with a transmission bandwidth based on the parameter values for the past network connection” and independent claim 15 recites one or more processors configurable to “initiate the next network connection . . . with a transmission bandwidth based on the parameter values for the past network connection.” Petitioner argues limitations [1c], [8c], and [15c] together. Pet. 26–29. We determine that Petitioner has not made a sufficient showing for the reasons explained above. *See supra* Section II.D.2. Accordingly, Petitioner has not shown a reasonable likelihood of prevailing on its assertion that claims 2–20 are unpatentable over Erskine.

E. Obviousness Ground Based on Scherzer

Petitioner contends that claims 1–20 are unpatentable over Scherzer under 35 U.S.C. § 103, citing the testimony of Dr. Crovella as support. Pet. 48–78 (citing Ex. 1003). Patent Owner responds. Prelim. Resp. 11–13.

We are not persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground.

1. Scherzer

Scherzer discloses a system for “improved connectivity to [a] radio access point.” Ex. 1005, code (57). Scherzer states that in existing systems, it was “not possible to know beforehand whether [an access point (AP)] is available for connection or not,” requiring a user to “try to connect to each one listed until one successfully connects.” *Id.* at col. 4, l. 66–col. 5, l. 3. Scherzer’s disclosed system uses a “knowledge base about existing AP’s to provide better decisions and connection to AP’s, and utilizes users[’] experience to update the knowledge base.” *Id.* at col. 4, ll. 55–59.

Specifically, Scherzer describes the following:

[A] server includes a database storing data about various radio access points, and an evaluation module evaluating the quality of connection to each of the access points. Clients receive updates about relevant access points from the server and use the information to connect to the preferred access point. The clients also check connectivity to other access points in the vicinity, and report the findings to the server. The server uses the reports to update its database, and send corresponding updates to the clients.

Id. at col. 2, ll. 42–50.

Figure 1 of Scherzer is reproduced below.

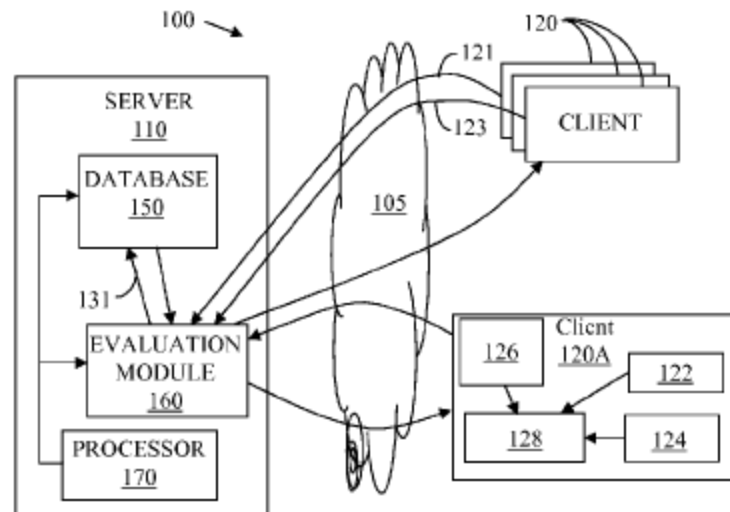


Figure 1

Figure 1 depicts clients 120 connecting via network 105 to server 110. Ex. 1005, col. 5, ll. 34–37. Server 110 includes database 150, which “stores historical data about radio broadband access resources,” and evaluation module 160, which “evaluates accessibility and bandwidth of various AP’s” and stores information in database 150. *Id.* at col. 5, ll. 39–44. When connected to an AP, a client periodically “checks the quality of the connection,” measures parameters of various other available APs, and reports the information to server 110. *Id.* at col. 5, ll. 47–50, col. 6, ll. 4–27. Clients collect information via “measurement trips” where, during times when “no time-sensitive traffic is [being] performed,” “the client is directed to associate with an AP other than the one used for [the] current Internet connection, and conduct data acquisition.” *Id.* at col. 7, ll. 24–38. One parameter measured is “[b]ackhaul quality (estimated bandwidth connection to Internet).” *Id.* at col. 7, ll. 49–53. Server 110 “uses the measurements from the clients to update the database 150.” *Id.* at col. 6, ll. 30–31. Measurement data provided to server 110 may be stored in database 150

“based on location coordinates sorted to ‘wireless regions’” (i.e., “geographical areas such as cities, parks, groups of cities, states and other geographical areas of interest”). *Id.* at col. 3, ll. 36–41, col. 11, ll. 33–37. Server 110 provides the accumulated and processed data to each client “based on the client’s geographical location,” and a client can use the information to “obtain the best available AP for the particular location the client[] is located at” and connect to that AP. *Id.* at col. 5, l. 62–col. 6, l. 3, col. 6, ll. 35–40, col. 10, ll. 8–16.

2. *Claim 1*

Petitioner argues that claim 1 would have been obvious over Scherzer. Pet. 49–67. With respect to limitation [1a], Petitioner argues that Scherzer teaches collecting, at a “first endpoint device” (i.e., a client), “parameter values” (e.g., backhaul quality) for determination of bandwidth of network connections to “further endpoint devices” (i.e., other clients on the network). *Id.* at 49–60. With respect to limitation [1b], Petitioner contends that Scherzer teaches determining, at a distinct “tuner server” (i.e., the server), that a “next network connection” from the “first endpoint device” (i.e., a client in a particular geographic area) to a “second endpoint device” (i.e., another client on the network) “matches a geographical area of a past network connection” (e.g., matches past data for access points in geographical proximity to the client). *Id.* at 60–64.

We focus on limitation [1c], which again is dispositive. As to the first requirement that the next network connection be initiated “based on the determination at the tuner server,” Petitioner argues that Scherzer “teaches the server determining that the client’s connection to another client via the

access points matches a geographical area of a past network connection and transmitting selected data to the client, based on which the client selects a preferred access point for initiating a connection.” Pet. 64–65. As to the second requirement that the next network connection have a transmission bandwidth that is “based on the parameter values for the past network connection,” Petitioner argues that Scherzer teaches “the client collect[ing] parameter values such as backhaul quality” and “utilizing the backhaul quality and analyzing the backhaul performance when selecting the preferred access points.” *Id.* at 65 (citing Ex. 1005, col. 3, ll. 15–21, col. 7, ll. 49–62, col. 8, l. 64–col. 9, l. 20, col. 9, ll. 29–53; Ex. 1003 ¶ 142). Petitioner further asserts that “[t]he backhaul quality is associated with the past network connections” because “it is collected and reported by the client ‘during previous scans [and] measurement trips.’” *Id.* at 65–66 (citing Ex. 1005, col. 7, ll. 24–58, col. 9, ll. 5–20; Ex. 1003 ¶ 143) (second alteration in original). Finally, Petitioner contends that because “each access point [in Scherzer] has a corresponding bandwidth” that can be shared, Scherzer teaches “initiating the next network connection via a preferred access point based on the determination at the server, where the preferred access point has a corresponding bandwidth based on the backhaul quality.” *Id.* at 66–67 (citing Ex. 1005, col. 5, ll. 34–46, col. 7, ll. 39–58, col. 9, ll. 5–20, col. 12, ll. 21–49; Ex. 1003 ¶ 144).

Similar to its asserted ground based on Erskine, Petitioner has not shown sufficiently that Scherzer teaches or suggests the second requirement of limitation [1c], i.e., “initiating the next network connection . . . with a transmission bandwidth based on the parameter values for the past network connection.” Petitioner’s theory is that (1) backhaul quality in Scherzer is

associated with a “past” network connection, (2) backhaul quality is used when “selecting” a preferred access point, and (3) each access point has a corresponding bandwidth that can be shared, so Scherzer teaches initiating a new connection via the preferred access point using a transmission bandwidth determined “based on” backhaul quality. *See* Pet. 65–67; Ex. 1003 ¶¶ 142–144 (similar testimony from Dr. Crovella).

Petitioner does not identify, and we do not see, any disclosure in Scherzer of “what the transmission bandwidth will actually be for any new connection.” *See* Prelim. Resp. 11 (emphasis omitted). Scherzer merely teaches that historical information may be considered when *selecting* a preferred access point (from among multiple possible access points). *See, e.g.,* Ex. 1005, col. 3, ll. 15–21 (“selecting the preferred radio resource may comprise analyzing . . . backhaul performance”), col. 6, ll. 63–66 (historical information may be used to “enable selecting the best radio resource available”), col. 9, ll. 31–34 (“[W]hen the terminal knows which of multiple APs has a good backhaul it can select the right AP for connection, thereby avoiding connection testing and ‘re-tries.’”). And, logically, an access point sets an amount of bandwidth that can be shared among users connecting to it. *See id.* at col. 5, ll. 41–44 (APs each have a “bandwidth”), col. 9, ll. 9–20 (“shared bandwidth”), col. 12, ll. 21–44 (stating that “generally owners of radio access points are averse to sharing the AP resource with people they [do not] know,” but “if there has been certain a priory contact, owners are much more likely to share the resource,” and describing an “owner register[ing] access point 370*d* as [a] member of the social network” and “specify[ing] the amount of bandwidth the owner is willing to allocate to third parties who are in the vicinity of the access point

370d”). But Scherzer does not describe setting the transmission bandwidth that actually will be used for the new connection when the client selects the preferred access point and connects to it. *See* Prelim. Resp. 11–12.

Petitioner quotes various portions of Scherzer in its analysis, but does not explain sufficiently how those disclosures teach or suggest initiating a new network connection with a transmission bandwidth that is “based on” backhaul quality of a past network connection. *See* Pet. 65–67; Ex. 1003 ¶¶ 142–144.

Based on the record before us, Petitioner has not shown sufficiently that Scherzer teaches or suggests “initiating the next network connection . . . with a transmission bandwidth based on the parameter values for the past network connection,” as recited in claim 1. Accordingly, Petitioner has not shown a reasonable likelihood of prevailing on its assertion that claim 1 is unpatentable over Scherzer.

3. *Claims 2–20*

Similar to its asserted ground based on Erskine, Petitioner argues limitations [1c], [8c], and [15c] together for its asserted ground based on Scherzer. Pet. 64–67. We determine that Petitioner has not made a sufficient showing for the reasons explained above. *See supra* Section II.E.2. Accordingly, Petitioner has not shown a reasonable likelihood of prevailing on its assertion that claims 2–20 are unpatentable over Scherzer.

F. Obviousness Ground Based on Scherzer and Gillett

Petitioner contends that claims 1–20 are unpatentable over Scherzer and Gillett under 35 U.S.C. § 103, citing the testimony of Dr. Crovella as support. Pet. 48–78 (citing Ex. 1003). Petitioner does not discuss Gillett in its analysis of limitations [1c], [8c], and [15c], and only relies on a combination with Gillett for limitations [1a], [8a], and [15a]. *See id.* at 54–60 (arguing that, “[t]o the extent Scherzer does not explicitly disclose a client connecting with other clients in the network via access points, Gillett teaches endpoint devices connecting with each other via access points”), 64–67. Accordingly, for the reasons explained above, Petitioner has not shown a reasonable likelihood of prevailing on its assertion that claims 1–20 are unpatentable over Scherzer and Gillett. *See supra* Section II.E.

III. CONCLUSION

Based on the arguments and evidence presented by the parties, we conclude that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the ’634 patent challenged in the Petition. Therefore, we do not institute an *inter partes* review.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied and no *inter partes* review is instituted.

IPR2025-00479
Patent 10,944,634 B1

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