

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

IPR2023-01462
Patent 9,277,445 B2

Before ROBERT J. WEINSCHENK, GARTH D. BAER, and
RUSSELL E. CASS, *Administrative Patent Judges*.

CASS, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Samsung Electronics Co., Ltd. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–26 (“the challenged claims”) of U.S. Patent No. 9,277,445 B2 (Ex. 1001, “the ’445 patent”). Headwater Research LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”) to the Petition.

An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 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.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R. § 42.4(a) (2021) (“The Board institutes the trial on behalf of the Director.”). The reasonable likelihood standard is “a higher standard than mere notice pleading,” but “lower than the ‘preponderance’ standard to prevail in a final written decision.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, the Petition is denied, and no trial is instituted.

B. Real Parties in Interest

Petitioner identifies itself and Samsung Electronics America, Inc. as the real parties in interest. Pet. 78. Patent Owner identifies itself as the only real party in interest. Paper 5, 1.

C. Related Matters

The parties indicate that the '445 patent is the subject of the following district court case: *Headwater Research LLC v. Samsung Electronics Co., Ltd.*, No. 2:22-cv-00422 (E.D. Tex.). Pet. 78; Paper 5, 2.

D. The '445 Patent

The '445 patent relates to “a wireless end-user device with [a] differential traffic control policy list and applying foreground classification to [a] wireless data service.” Ex. 1001, code (54). Specifically, the '445 patent states that “[a] wireless end-user device has a wireless wide-area network (WWAN) and wireless local-area network (WLAN) modems,” and “[o]ne or more processors classify whether an application is interacting with a user in a user interface foreground of the device.” *Id.* at code (57). The processor(s) also “determine whether or not to apply a differential traffic control policy to an application requesting Internet service access.” *Id.* According to the '445 patent, “[w]hen the policy is applicable, and the application is not classified as interacting with a user in the device user interface foreground, the Internet service access request is blocked.” *Id.*

E. Illustrative Claim

Of the challenged claims, claim 1 is independent and is reproduced below.

1. A wireless end-user device, comprising:
 - a wireless wide area network (WWAN) modem to communicate data for Internet service activities between the device and at least one WWAN, when configured for and connected to the WWAN;
 - a wireless local area network (WLAN) modem to communicate data for Internet service activities between the

device and at least one WLAN, when configured for and connected to the WLAN; and

one or more processors configured to

classify, as a first classification, whether data for Internet services activities is to be communicated through the WWAN modem or the WLAN modem, and

classify, as a second classification, whether a particular application associated with an Internet service access request, and capable of both interacting with a user in a user interface foreground of the device, and at least some Internet service activities when not interacting with a user in the device user interface foreground, is interacting with the user in the device user interface foreground, and

apply a differential traffic control policy to the Internet service access request, based on

(i) the first and second classifications performed by the one or more processors, and

(ii) a differential traffic control policy list distinguishing between a first one or more applications resident on the device and a second one or more applications resident on the device, such that,

when the particular application is one of the first one or more applications, the one or more processors are operable to block the Internet service access request in a first state of the first and second classifications, wherein data for Internet service activities is classified as to be provided through the WWAN modem, and the particular application is not classified as interacting with a user in the device user interface foreground, and

allow the Internet service access request under at least one different state of the first and second classifications.

Ex. 1001, 105:51–106:25.

F. Applied References

Petitioner relies upon the following references:

Rao, US 2006/0039354 A1, published Feb. 23, 2006
(Ex. 1005, “Rao”);

Oestvall, US 2007/0038763 A1, published Feb. 15, 2007
(Ex. 1006, “Oestvall”);

Montemurro, US 2009/0207817 A1, published Aug. 20,
2009 (Ex. 1007, “Montemurro”);

Araujo, US 2009/0217065 A1, published Aug. 27, 2009
(Ex. 1008, “Araujo”);

Freund, US 5,987,611, issued Nov. 16, 1999 (Ex. 1009,
“Freund”).

Pet. i–ii, 2. Petitioner also submits the Declaration of Dr. Kevin
Butler (Ex. 1003).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–23 of the
'544 patent based on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4–9, 14, 16, 19, 20, 23, 26	103	Rao, Oestvall, Montemurro
10–12, 15, 17, 18, 22, 25	103	Rao, Oestvall, Montemurro, Araujo
3, 13, 21, 24	103	Rao, Oestvall, Montemurro, Freund

Pet. 1–2.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner argues that a person of ordinary skill in the art would have had “(1) at least a bachelor’s degree in computer science, electrical engineering, or a related field, and (2) three to five years of experience with networking, power consumption of networked computing devices, and/or wireless digital communications systems.” Pet. 3 (citing Ex. 1003 ¶¶ 15–17). Petitioner’s description of the level of ordinary skill in the art is supported by the testimony of Petitioner’s declarant, Dr. Kevin Butler. Ex. 1003 ¶¶ 15–17. Patent Owner does not dispute Petitioner’s description. Prelim. Resp. 4. For purposes of this Decision, we adopt Petitioner’s description, which is consistent with the ’445 patent and the asserted prior art.

B. Claim Construction

A claim “shall be construed 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).” 37 C.F.R. § 42.100(b). At this stage of the proceeding, neither party presents any claim terms for construction. Pet. 2–3; Prelim. Resp. 4. Based on the present record, we determine that it is not necessary to provide an express interpretation of any claim terms at this time. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1374 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Ground 1: Obviousness of Claim 1 over Rao, Oestvall, and Montemurro

Petitioner argues that claim 1 would have been obvious over Rao, Oestvall, and Montemurro. Pet. 4–39. For the reasons discussed below, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claim 1 would have been obvious over Rao, Oestvall, and Montemurro.

1. Claim 1

Claim 1 recites “a particular application associated with an Internet service access request.” Ex. 1001, 105:64–66. Petitioner argues that one of ordinary skill “would have understood or found it obvious that Rao’s applications can be *associated with an Internet service access request* based on Rao’s teachings of its applications communicating over the Internet (e.g., in the form of network packets) and receiving services from Internet servers.” Pet. 28 (citing Ex. 1003 ¶¶ 121–124). “For example,” Petitioner asserts, “Rao describes that an application can communicate with one or more servers on the network 104, such as the Internet,” and “describes that an application can access services provided by a server 102e connected to the network 104, such as those provided by ‘an application server providing email services such as Microsoft Exchange,’ ‘a web or Internet server,’ ‘a desktop sharing server,’ or ‘a collaboration server’ (*a particular application associated with an Internet service access request*).” *Id.* (citing Ex. 1005 ¶¶ 90, 95, 125, Fig. 1A). “Further,” Petitioner contends, Rao teaches that “an application may attempt to access an Internet service by transmitting packets to that Internet service.” Pet. 28 (citing Ex. 1005 ¶¶ 90, 179, 184; Ex. 1003 ¶ 123).

Claim 1 also recites that, “when the particular application is one of the first one or more applications, the one or more processors are operable to ***block the Internet service access request*** in a first state of the first and second classifications.” Ex. 1001, 106:14–18. Petitioner argues that one of ordinary skill “would have configured Rao’s ‘filter 322’ to selectively block network packets or and/or transmit network packets to the network.” Pet. 14 (citing Ex. 1003 ¶ 81). “Specifically,” Petitioner asserts, “the ‘filter 322’ would selectively ‘discard[]’ network packets from applications that are ‘untrusted’ and running in the background.” *Id.* at 14–15 (citing Ex. 1003 ¶ 81). “Further,” according to Petitioner, “upon selecting a network and a corresponding policy,” one of ordinary skill “would have found it obvious, in at least some implementations, to apply the selected policy by allowing or blocking an applications’ network traffic” based on “whether the application is running in the foreground or the background” and “the application’s ‘trusted/untrusted’ status.” *Id.* at 32–33 (citing Ex. 1003 ¶¶ 137–140). Additionally, Petitioner contends, “in accordance with its policies, Rao’s system selectively uses a filter to (i) allow network packets to be transmitted to the network or (ii) block the network packets from being transmitted to the network, thereby applying the policies to the Internet service access request embodied by those network packets.” *Id.* at 34–35 (citing Ex. 1005 ¶¶ 191, 194, 207; Ex. 1003 ¶ 142). Finally, Petitioner argues that “the ‘filter 322’ would selectively ‘discard’ network packets (***block the Internet service access request***) from applications that are ‘untrusted’ (. . . ***when the particular application is one of the first one or more applications***) and running in the background (***in a first state of the . . . second classifications, wherein . . . the particular application is not classified as interacting with a***

user in the device user interface foreground).” *Id.* at 37 (citing Ex. 1003 ¶¶ 153–154).

Patent Owner contends that Petitioner does not show sufficiently that Rao teaches blocking an Internet service access request. Prelim. Resp. 24–31. Specifically, Patent Owner argues that “blocking an application’s Internet service access request . . . requires blocking an application’s ‘request’ to access an Internet service, such as a request . . . to open a network connection or obtain an IP address.” *Id.* at 25. According to Patent Owner, “[t]his is separate from discarding network packets *after* the Internet service access request has already been granted, and a corresponding network connection has been opened.” *Id.* Rao’s “discarding of network packets,” Patent Owner contends, “requires that the application’s access request was already granted,” and thus “does not constitute blocking any Internet service access request.” *Id.* at 29–30.

On this record, we agree with Patent Owner. The ’445 patent states that its system can “classify[] and/or control[] *network access requests* (e.g., IP address requests).” Ex. 1001, 11:27–32 (emphasis added). In particular, the ’455 patent describes an example where “before a connection is allowed to be opened . . . it is blocked and a message is sent back to the application . . . that the *network access attempt* was not allowed/blocked.” *Id.* at 91:41–49 (emphasis added). In contrast, the ’455 patent explains that its system also can “classify[] and/or control[] . . . network capacity/resources usage (e.g., bandwidth usage).” *Id.* at 11:27–32. For example, a “socket can be allowed to open but after some point in time (e.g., based on network service usage . . .), the stream is blocked or the socket is terminated.” *Id.* at 91:49–54. In other words, the ’455 patent distinguishes between 1) blocking an

Internet service access request before a connection is open; and 2) blocking a network stream after a connection is open. *Id.* at 11:27–32, 91:41–54.

On this record, Petitioner does not show sufficiently that the combination of Rao, Oestvall, and Montemurro teaches blocking an Internet service access request. First, Petitioner asserts that one of ordinary skill “would have understood or found it obvious that Rao’s applications can be ***associated with an Internet service access request*** based on Rao’s teachings of its applications communicating over the Internet (e.g., in the form of network packets) and receiving service from Internet servers.” Pet. 28 (citing Ex. 1003 ¶¶ 121–124). Petitioner also asserts that Rao teaches that “an application may attempt to access an Internet service by transmitting packets to that Internet service.” *Id.* (citing Ex. 1005 ¶¶ 90, 179, 184; Ex. 1003 ¶ 123). However, even if Petitioner is correct that a person of ordinary skill in the art would have known that Rao’s applications send an Internet service access request, that alone does not show that Rao also teaches blocking the Internet service access request. *See id.*

Second, Petitioner identifies portions of Rao that teach discarding network packets. Pet. 14–15 (citing Ex. 1003 ¶ 81), 32–33 (citing Ex. 1005 ¶¶ 191, 194, 207). As discussed above, though, the ’445 patent distinguishes between an Internet service access request and a network stream. Petitioner asserts that Rao’s network packets “embod[y]” an Internet service access request, and thus discarding the network packets also discards the corresponding Internet service access request. *Id.* at 34–35 (citing Ex. 1005 ¶¶ 191, 194, 207; Ex. 1003 ¶ 142), 37–38 (citing Ex. 1003 ¶¶ 153–154). But Petitioner does not identify sufficient evidence to support that assertion. The portions of Rao cited by Petitioner do not state that Rao’s network packets

embody or otherwise include an Internet service access request.¹ *See id.* at 34–35, 37–38; Ex. 1005 ¶¶ 104, 191, 194, 207. And, Petitioner does not explain specifically why a person of ordinary skill in the art would have known or found it obvious that Rao’s network packets embody or otherwise include an Internet service access request. *See* Pet. 34–35, 37–38; Ex. 1003 ¶¶ 142, 153–154, 157.

In addition, in IPR2023-01361 involving a related patent and similar claim language and issues, Petitioner asserted that in the proposed combination, “[i]f an application is permitted to access the Internet . . . the network packets generated by that application would be filtered in accordance with the Rao-Oestvall combination.” Ex. 2004 (IPR2023-01361 Petition) 25. In other words, in Petitioner’s proposed combination, Rao only discards network packets after an application’s Internet service access request is permitted. *See id.*

Thus, on this record, Petitioner does not show sufficiently that Rao teaches blocking an Internet service access request. Petitioner relies on Oestvall and Montemurro for “specific application classification criteria.”² *Id.* at 11, 37, 38. Petitioner also relies on Montemurro for “apply[ing] different policies to an application’s network traffic based on which network

¹ In fact, as Patent Owner points out, Rao states that its network packets include a destination IP address, which indicates that the corresponding IP address request already was allowed. Prelim. Resp. 27–28; Ex. 1005 ¶ 192.

² Petitioner’s proposed combination does not include Oestvall’s teaching of “completely shutting down” an application. Pet. 12 (“[A] system can . . . control[] the network activities of applications to a much greater degree of granularity than offered by Oestvall’s relatively blunt approach of completely shutting down applications.”).

is selected to handle an application's network traffic.” *Id.* at 18; *see id.* at 19–25, 27–28, 32, 37. But Petitioner does not rely on either Oestvall or Montemurro to teach blocking an Internet service access request. *Id.* at 28–39. As a result, Petitioner's reliance on Oestvall and Montemurro does not compensate for the deficiency in Rao discussed above.

2. Summary as to Claim 1

For the foregoing reasons, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claim 1 would have been obvious over Rao, Oestvall, and Montemurro.

3. Claims 2, 4–9, 14, 16, 19, 20, 23, and 26

Petitioner argues that claims 2, 4–9, 14, 16, 19, 20, 23, and 26 would have been obvious over Rao, Oestvall, and Montemurro. Pet. 39–52. These claims depend, directly or indirectly, from claim 1. Petitioner's arguments and evidence regarding these dependent claims do not compensate for the deficiencies discussed above for claim 1. *See id.* Thus, for the same reasons discussed above for claim 1, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claims 2, 4–9, 14, 16, 19, 20, 23, and 26 would have been obvious over Rao, Oestvall, and Montemurro.

D. Ground 2: Obviousness of Claims 10–12, 15, 17, 18, 22, and 25 over Rao, Oestvall, Montemurro, and Araujo

Petitioner argues that claims 10–12, 15, 17, 18, 22, and 25 would have been obvious over Rao, Oestvall, Montemurro, and Araujo. Pet. 52–67. These claims depend, directly or indirectly, from claim 1. Petitioner's arguments and evidence regarding these dependent claims do not compensate for the deficiencies discussed above for claim 1. *See id.* Thus, for the same reasons discussed above for claim 1, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claims 10–

12, 15, 17, 18, 22, and 25 would have been obvious over Rao, Oestvall, Montemurro, and Araujo.

E. Ground 3: Obviousness of Claims 3, 13, 21, and 24 over Rao, Oestvall, Montemurro, and Freund

Petitioner argues that claims 3, 13, 21, and 24 would have been obvious over Rao, Oestvall, Montemurro, and Freund. Pet. 67–75. These claims depend, directly or indirectly, from claim 1. Petitioner’s arguments and evidence regarding these dependent claims do not compensate for the deficiencies discussed above for claim 1. *See id.* Thus, for the same reasons discussed above for claim 1, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claims 3, 13, 21, and 24 would have been obvious over Rao, Oestvall, Montemurro, and Freund.

III. CONCLUSION

Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that at least one of the challenged claims of the ’455 patent is unpatentable.

IV. ORDER

It is hereby

ORDERED that the Petition is denied, and no trial is instituted.

IPR2023-01462
Patent 9,277,445 B2

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