

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

Case IPR2023-01362
Patent 9,271,184 B2

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

No.	Description
Ex. 2001	IPR Petition, <i>Samsung Elecs. Co. v. Headwater Research LLC</i> , IPR2023-01253, Paper No. 2 (PTAB Aug. 11, 2023)
Ex. 2002	IPR Petition, <i>Samsung Elecs. Co. v. Headwater Research LLC</i> , IPR2023-01337, Paper No. 2 (PTAB Aug. 25, 2023)
Ex. 2003	IPR Petition, <i>Samsung Elecs. Co. v. Headwater Research LLC</i> , IPR2023-01336, Paper No. 2 (PTAB Aug. 25, 2023)
Ex. 2004	IPR Petition, <i>Samsung Elecs. Co. v. Headwater Research LLC</i> , IPR2023-01361, Paper No. 3 (PTAB Sept. 8, 2023)
Ex. 2005	Petitioner's Notice Ranking Petitions, <i>Samsung Elecs. Co. v. Headwater Research LLC</i> , IPR2023-01361, Paper No. 2 (PTAB Sept. 8, 2023)
Ex. 2006	Email from J. Wietholter to Petitioner's counsel re Patent Owner's Preliminary Election of Asserted Claims, dated December 18, 2023
Ex. 2007	Email from A. Hayden to Petitioner's counsel re requested withdrawal of the instant Petition, dated December 28, 2023

I. INTRODUCTION

The Board should deny institution of *inter partes* review (“IPR”) of U.S. Patent No. 9,271,184 (“the ’184 Patent”) for two independent reasons.

First, the Petition should be denied on the merits. The Petition alleges a combination of Rao and Oestvall in which untrusted applications are allowed to run in the background and generate network packets, only for those packets to be discarded before transmission. This is illogical, and the Petition fails to show why a POSITA would be motivated to combine Rao and Oestvall in this manner. Indeed, in asserting the purported combination, the Petition *ignores* Oestvall’s teachings that untrusted applications should be prevented from running while in the background, such that untrusted background applications would never generate any packets in the first place. Moreover, all challenged claims require “block[ing] the Internet service access request.” Under the Petition’s theory, the action alleged to constitute “block[ing] the Internet service access request” is discarding network packets generated by untrusted background applications. *See* Pet. 42. But contrary to the Petition’s argument, discarding a network packet in Rao does ***not*** constitute blocking an “Internet service access request” because Rao’s network packets are only intercepted after access to Internet service has already been granted.

Second, the instant Petition is one of two parallel petitions that Petitioner filed challenging claims of the ’184 Patent. If the Board grants institution of the other

parallel petition in IPR2023-01361, the Board should exercise its discretion and deny institution in this proceeding because Petitioner has not shown that this is one of the “rare” instances where two petitions are needed. This is especially true because the only claims uniquely challenged in the instant Petition (claims 7-9) are no longer asserted against Petitioner in the co-pending district court litigation. And in any event, the instant Petition is largely duplicative with the other parallel petition, and Petitioner has not explained why it could not address these mere three claims within the confines of the other petition.

These deficiencies apply to all challenged claims. Accordingly, the Petition fails to show unpatentability for any claim, and institution should be denied.

II. OVERVIEW OF THE '184 PATENT

At a high level, the '184 Patent is directed to using a differential traffic control policy to block an Internet service access request by an application when it is classified as not interacting with the user in the device foreground, and to allow the application's request at other times, while also imposing a data usage limit for an application. More specifically, the only independent claim (Claim 1) recites:

[1pre] A wireless end-user device, comprising:

[1a] 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 at least one WWAN; and

- [1b] one or more processors configured to, for a time when data communication for Internet service activities is provided by the WWAN modem,
- [1c] classify 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,
- [1d] apply a differential traffic control policy to the Internet service access request, based on (i) whether the application is classified as interacting with the user, 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,
- [1e] such that, the one or more processors are operable to, in a first state wherein the particular application is one of the first one or more applications, and the particular application is not classified as interacting with a user in the device user interface foreground, block the Internet service access request, and
- [1f] the one or more processors are operable to allow the Internet service access request in at least one other state, and
- [1g] for at least one of the first or second one or more applications, disallow Internet data communication for that application based

on an application-specific amount of Internet data usage reaching a limit.

As explained by the '184 Patent, the claimed invention allows the system to prevent particular applications from accessing network connections (and thus prevent them from consuming any network resources) when those applications are not interacting with the user in the foreground. The Patent provides an example of blocking a network access request (e.g., a request to connect to the network such as by opening a socket), such that the application needs to submit its network access request later: “As yet another example, **before a connection is allowed to be opened** (e.g., before a socket is opened), transmission, or a flow/stream is initiated, **it is blocked** and a message is sent back to the application... **to try again later for the requested network access.**” Ex. 1001 at 91:41-49.¹

III. LEVEL OF ORDINARY SKILL IN THE ART

The Petition proposes that a POSITA in the field of the '184 Patent “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. Additional graduate education could substitute for professional experience, and *vice versa*.” See Pet. 3 (citing Ex. 1003 ¶¶15-17). For

¹ All emphasis added unless otherwise noted.

purposes of this preliminary response, Patent Owner does not challenge that definition.

IV. CLAIM CONSTRUCTION

The Petition states that “no formal claim constructions are necessary.” *Id.* 2-3. For purposes of this preliminary response only, Patent Owner agrees that no formal claim construction is necessary.

V. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD OF UNPATENTABILITY FOR ANY CHALLENGED CLAIM

Claim 1 (from which all challenged claims depend) recites, in part, “apply a differential traffic control policy to the Internet service access request based on whether the application is classified as interacting with the user” such that the one or more processors “block the Internet service access request” when “the particular application is not classified as interacting with a user in the device user interface foreground.”

The Petition relies on Rao in view of Oestvall for these limitations, which the Petition labels limitations [1d] and [1e], respectively. Pet. 34-42 (relying on Rao or Oestvall for limitation [1d]; *id.* 42-44 (relying on the combination of Rao with Oestvall for limitation [1e])). Although the Petition relies on Freund for other limitations, it is immaterial to the arguments in this preliminary response because the Petition does not rely on Freund for limitation [1d] or [1e]. Patent Owner therefore does not address Freund in this response.

The Petition’s proposed combination requires modifying Oestvall to allow untrusted applications in the background to continue to run, so that Rao’s filter can also be modified to selectively discard all network packets associated with those background untrusted applications. *See id.* 16 (acknowledging that its proposed combination does ***not*** “completely shut down the application as disclosed by Oestvall”). But the Petition fails to show that a POSITA would have been motivated to pursue its proposed combination, which is contrary to Oestvall’s express teaching of shutting off all system resources for untrusted background applications, as well as its stated goal of avoiding all battery drain from untrusted background applications.

Moreover, even assuming counterfactually that a POSITA would have been motivated to pursue the Petition’s proposed combination, the Petition fails to show that the application’s “Internet service access request” would be blocked, or even controlled, in the proposed combination. On the contrary, the proposed Rao-Oestvall combination has no such feature for blocking Internet service access requests, and the Petition fails to even identify the “Internet service access request” that is purportedly being blocked.

- A. The Petition fails to show that a POSITA would have been motivated to modify Oestvall to allow untrusted applications to continue to run (contrary to Oestvall’s teachings and purpose), only to generate network packets that are ultimately discarded by Rao’s filter.**

Neither Rao nor Oestvall, nor their combination, teaches or renders obvious one or more processors operable to **block** a packet (i.e., the alleged “Internet service access request”—see Pet. 30) when an application is not classified as interacting in with a user the foreground, but operable to **allow** a packet when the application is interacting with a user in the foreground, as required by limitations [1d] and [1e]. Specifically, for limitation [1e], the Petition alleges that in its combination, Rao’s filter 322 “would selectively ‘discard’ network packets (***block the Internet service access request***) from applications that are ‘untrusted’ [] and running in the background (***the particular application is not classified as interacting with a user in the device user interface foreground***).” Pet. 42 (emphases in original). But neither Rao nor Oestvall disclose taking **any** action with regard to network packets on the basis of the application being “untrusted” and running in the background, much less “effectively deprioritizing those packets entirely” as the Petition suggests. *See id.* 15. Furthermore, the Petition fails to establish why a POSITA would be motivated to modify Rao’s remote access client in such a manner.

By way of background, and as the Petition acknowledges, Oestvall discloses “completely shut[ting] down” background untrusted applications. *See id.* 16; *see, e.g.,* Ex. 1006 ¶[0021] (“With the present invention, when an untrusted application is running on the battery operated device and another application should be in the foreground, the untrusted application is placed into the background ***and is also***

actively prevented from running.”); *id.* at Abstract (explaining that the invention “prevents the untrusted application from running, e.g. being given any services or consuming any resources”); *id.* ¶¶[0008], [0016], [0017] (describing “a first aspect of the present invention,” “a second aspect” of the invention, and “a third aspect” of the invention, each of which involves “prevent[ing] an untrusted application that is in the background from running in order to conserve system resources”). Thus, background untrusted applications are from prevented from using *any* system resources (CPU or memory) and cannot take *any* actions whatsoever (much less any actions that could generate network packets). Oestvall takes no action regarding network packets generated by background untrusted applications because those packets are never generated and do not exist.

Preventing background untrusted applications from running is not some optional way to implement Oestvall’s system—rather, it is a *requirement* of the claimed invention. *See* Ex. 1006 ¶[0014] (“[M]erely relying on an application to voluntarily cease running when notified that it is in the background is an inadequate strategy for untrusted applications. Instead, *they need to be actively be prevented from running.*”). Each of Oestvall’s independent claims confirm that preventing background untrusted applications from running is the essence of Oestvall’s invention. *See id.* at Claims 1 & 11 (both requiring “preventing an untrusted application that is in the background from running”).

Oestvall further explains that there is good reason to prevent background untrusted applications from running in their entirety: such applications will “often run[] at full speed to update graphics, sounds, etc.” and these operations “will still run in the background and drain the battery.” *Id.* ¶[0019]. Furthermore, in battery-powered and multi-tasking systems (such as the mobile device the Petition alleges its combination would entail), preserving system resources such as power consumed by CPU activity is “especially valuable.” *Id.* ¶[0021] (explaining that “actively prevent[ing]” a background untrusted application from running “denies it system resources and hence preserves power, as well as unnecessary CPU activity associate with the untrusted application in [the] background,” which “could be especially valuable not only in the context of portable, battery powered devices, but also a UPS (uninterruptible power supply) powered system”); *see also id.* ¶[0007] (“[T]he problem of battery conservation is especially acute for multi-tasking devices, i.e. devices with an operating system that can run several applications at the same time.”); *id.* ¶[0009] (emphasizing how “valuable” system resources such as “CPU” and “power” are in “multitasking computing devices”).

But the Petition’s proposed combination of Rao with Oestvall ***disregards*** Oestvall’s stated requirement of preventing untrusted background applications from running. Instead, the Petition proposes that, contrary to Oestvall’s teachings, such applications would be ***allowed*** to run and even cause generation of network packets,

only for those network packets to be ultimately discarded by Rao's packet filter 322. *See* Pet. 16 (acknowledging that its proposed combination does not "completely shut down the application as disclosed by Oestvall"); *id.* 18 (distinguishing between the Petition's proposal of "blocking an application's transmission of network packets permanently" from "shutting down the application entirely to reduce battery drain as taught by Oestvall"); *id.* 42-43 (relying on discarding of packets generated by background untrusted applications that continue to run in attempting to meet limitation [1e]).

The Petition's combination fails at the outset because Oestvall teaches away from allowing background untrusted applications to continue to run and take up system resources (CPU, memory) and services, only to generate network packets that will be discarded. Oestvall expressly teaches that for multi-tasking devices, "the problem of battery conservation is *especially acute*." Ex. 1006 ¶[0007]. Oestvall further teaches that it is "valuable to preserve system resources (CPU, power) in multitasking devices" and that for battery powered devices, "it is *especially valuable* to conserve system resources *wherever possible* since doing so can increase battery life." *Id.* Accordingly, Oestvall teaches that untrusted applications in the background "***need to be actively be prevented from running.***" *Id.* ¶[0014]. In view of these teachings, as well as Oestvall's stated purpose, a POSITA would understand that Oestvall teaches away from allowing background untrusted applications to continue

running, consuming resources, and draining battery—as the Petition proposes. *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017) (“A reference teaches away ‘when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken’ in the claim.”) (quoting *Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 738 (Fed. Cir. 2013)); *see also Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1355 (Fed. Cir. 2012) (holding that prior art reference taught away from an option when it “explicitly ‘ruled out’” that option).

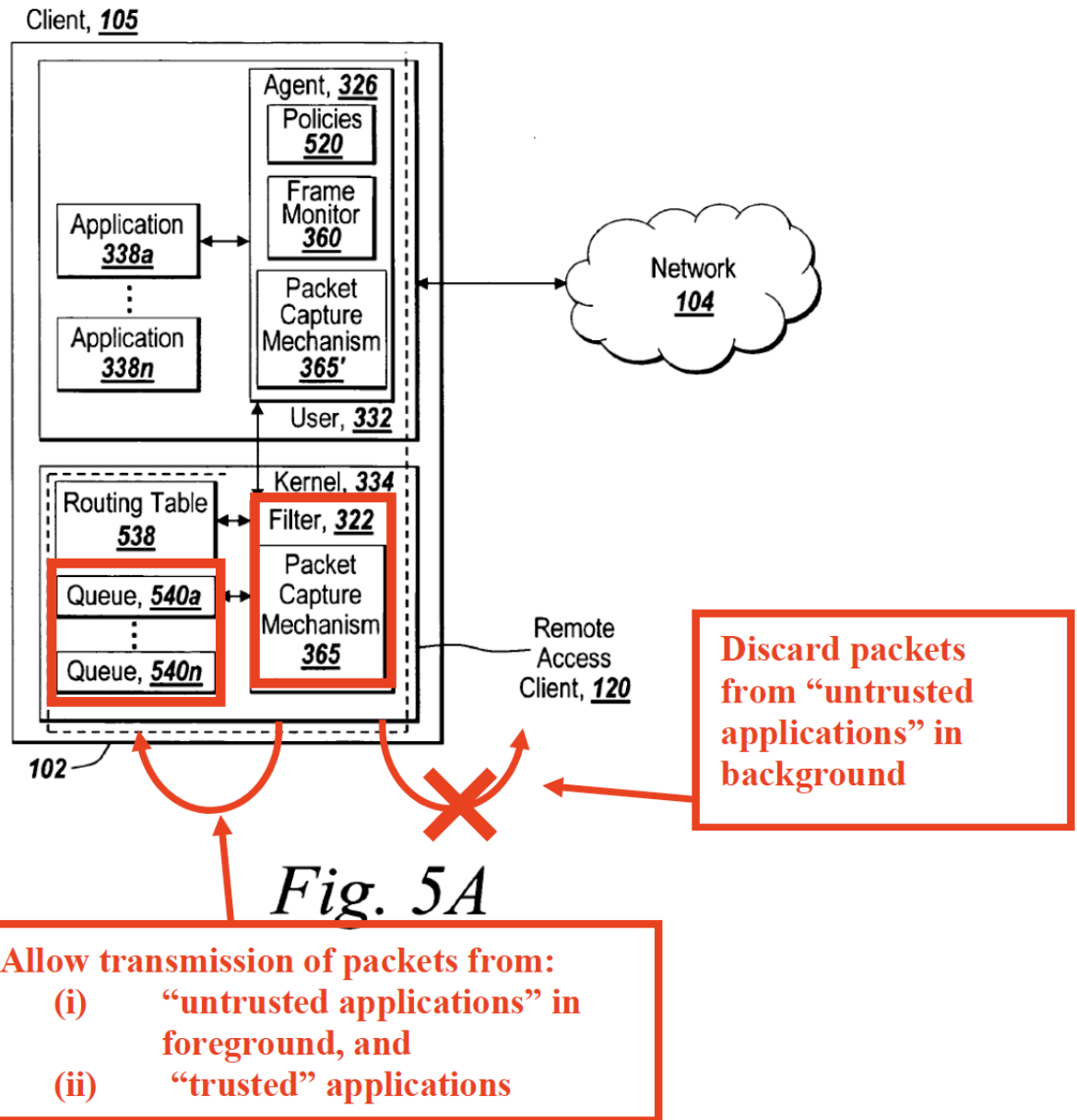
But even if Oestvall’s disclosures do not rise to the level of teaching away, they clearly negate a finding of motivation to combine here. The only rationale the Petition proposes for ignoring Oestvall’s teachings that background untrusted applications must be prevented from running is that the “combined Rao-Oestvall system can reduce battery drain while controlling 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 to achieve this benefit.” Pet. 16. Notably, however, the Petition does not allege that a POSITA would have viewed Oestvall’s “relatively blunt approach of completely shutting down applications” as detrimental in any way, such that they would ignore Oestvall’s teachings that background untrusted applications “need to be prevented from running.” *Id.* 16-17; *see* Ex. 1006 ¶[0014].

Indeed, the Petition does not allege that **allowing** untrusted background applications to run (directly contrary to Oestvall’s teachings) would have **any** benefit at all. At most, the Petition alleges that doing so would have “control[ed] the network activities of applications to much greater degree of granularity than offered by Oestvall’s relatively blunt” solution. Pet. 16. This is unfounded, however, because the Petition’s own theory of invalidity for claim 1 involves **discarding** “network packets from applications that are ‘untrusted’ and running in the background.” Pet. 40-41 (addressing the claim language of limitation [1d]); *id.* at 42 (addressing the claim language of limitation [1e]). As the Petition acknowledges, this would result in “the network packets... be[ing] blocked permanently,” and the Petition does not allege that **any** of those network packets would be transmitted under this discarding theory.² *Id.*

² The Petition separately argues that the system could be modified “to additionally or alternatively selectively block network packets temporarily” by “holding” the packets “in a queue” for subsequent transmission. Pet. 18-19. However, the Petition’s claim 1 theory explicitly relies on packets being **discarded** such that they are “**blocked permanently**.” See Pet. 42. Thus, if queuing packets is alleged to be an “alternative[.]” implementation to discarding them (Pet. 18), that alternative implementation is not alleged to meet limitations [1d] or [1e]. And the Petition does

For instance, the Petition's annotation to Rao's FIG. 5A makes clear that the proposed combination would discard packets from untrusted background applications, while only allowing packets from trusted applications and untrusted applications in the foreground:

not explain how a POSITA could paradoxically queue *and* discard packets associated with background untrusted applications, much less allege any benefit to that approach or explain how this approach meets the claim limitations. Furthermore, as explained throughout this brief, a POSITA would not have been motivated to allow background untrusted applications to run at all, much less to allow them to send network transmissions.



Pet. 17 (Petitioner’s annotations of Rao’s FIG. 5A); *id.* 40-43 (relying on this same configuration that discards packets based on a determination that they originated from untrusted background applications as allegedly satisfying both limitations [1d] and [1e]); Ex. 1003 (Butler Decl.) ¶¶137-143 (same); *see also* Pet. 42 (stating that as a result of discarding packets from background untrusted applications, “these

applications can no longer poll for data over a wireless network”); Butler Decl. ¶137 (explaining that in the alleged combination, “an application’s network packets... would be blocked on a permanent basis”).

Thus, the Petition’s proposed combination does not improve upon Oestvall’s low-granularity restriction on network activities of untrusted background applications (because the Petition’s invalidity theory, like Oestvall, prevents such activities in their entirety), but the Petition’s combination does so in a less effective manner from which Oestvall explicitly teaches away. Furthermore, because Oestvall discloses that its allegedly “blunt” approach is beneficial and even mandatory, there is no competent evidence that a POSITA would have viewed **avoiding** that approach as beneficial. *See* Pet. 16.

Indeed, the *only* evidence the Petition cites on this point is the *ipse dixit* opinion of its expert. *See id.* (citing Ex. 1003 ¶75, which simply repeats the Petition’s assertion that the Petition’s proposal “can reduce battery drain while controlling 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 to achieve this benefit”). But because the expert declaration merely parrots the conclusory allegations of the Petition on this point, and cites no competent supporting evidence for the assertions it offers, it should be accorded little weight. *See* 37 C.F.R. § 42.65 (“Expert testimony that does not disclose the

underlying facts or data on which the opinion is based is entitled to little or no weight.”); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper No. 9 at 15 (PTAB Aug. 24, 2022) (precedential) (denying institution and giving “little weight” to “cited declaration testimony [that] is conclusory and unsupported” and “adds little to the conclusory assertion for which it is offered to support”).

The Petition further fails to acknowledge that a POSITA would have recognized the significant **disadvantages** that would result from disregarding Oestvall’s mandatory teachings of preventing untrusted background applications from running. Specifically, Oestvall teaches benefits of denying untrusted background applications access to **all** system resources, not just network resources. *See* Ex. 1006 at Abstract (explaining that the invention “prevents the untrusted application from running, e.g., being given **any** services or consuming **any** resources”). While prevention of network activity is “[o]ne example” of a benefit to Oestvall’s disclosed technique (*id.* ¶[0024]), Oestvall is clear that preventing background untrusted applications from running provides the benefit of preventing consumption of **any** system resources, not only the portion of resources associated with network transmissions. *See, e.g., id.* at Abstract; *id.* ¶[0006] (explaining that “applications will continue to run even when in not actually in active use,” and “will therefore continue to use **some** system resources, even when residing in the ‘background’”); *id.* ¶¶[0008]-[0009] (“[T]he fact that [untrusted] applications can

run in the background and consume some system resource is a waste of CPU and scheduler activity.”); *id.* ¶¶[0019]-[0021] (explaining that background untrusted applications can include “games or similar types of applications and, when these execute, the CPU is often running at full speed to update graphics, sounds etc.”; accordingly, preventing such applications from running “preserves power, as well as unnecessary CPU activity associated with the untrusted application in the background”).

Thus, while the Petition alleges that discarding packets generated by untrusted background applications (supposedly motivated by Oestvall) may conserve some network resources, the Petition fails to motivate such a fundamental deviation from the solution actually taught (and required) by Oestvall. A POSITA would readily recognize that the Petition’s approach (as compared to Oestvall’s approach) would drain numerous additional resources such as resources associated with CPU and scheduler activity (including CPU activity required to generate the packets that Rao’s filter would later spend energy to evaluate and discard, as well as battery-draining CPU activity *not* associated with network activity).³ The Petition’s proposal

³ The Petition implies that Oestvall’s power-saving goals could be equally achieved by the Petition’s combination because “a POSITA would have recognized that the power usage associated with using a wireless modem to transmit network packets to

of a less power-efficient solution with no actual benefit of more granular network control is particularly unfounded because the Petition's alleged motivation to combine Rao with Oestvall in the first place is to "reduce battery drain." *See* Pet. 15

a network far exceeds the power usage associated with an application generating those network packets. Pet. 15. Even if one were to assume this assertion to be true, it is an admission that there is *some* power usage involved in generating network packets, and thus an admission that Petition's proposed combination is *less* battery-efficient than if background untrusted applications were prevented from running altogether. And in any event, the Petition completely ignores system resources that would be consumed by untrusted background applications for *non-network* activity under the Petition's proposed solution, which Oestvall teaches would have a significant and detrimental impact on battery consumption. *See* Ex. 1006 ¶¶[0019]-[0020] (explaining that third party applications, which can come from "untrusted sources," can be "games or similar types of applications and, when these execute, the CPU is often running at full speed to update graphics, sounds, etc.," and thus "there is a risk that [these] application[s] will still run in the background and thus drain the battery"). The Petition does not dispute that allowing such applications to run would have a significant impact on battery consumption, even if these applications *never* attempted to use the network.

(section heading (c)). A POSITA motivated by the goal of reducing battery drain would have actively avoided replacing Oestvall’s core teaching—preventing untrusted background applications from doing *anything*—with the Petition’s significantly more battery-intensive approach that achieves the same non-granular restriction on network activities of untrusted background applications—having untrusted background applications run in the background only to have all of their network packets discarded anyways.

It is apparent in view of Rao and Oestvall themselves that if a POSITA *actually* followed the teachings of Oestvall in a combination with Rao (rather than abandoning those teachings with the hindsight motivation of arriving at the claims of the ’184 Patent as the Petition does), the POSITA would have simply implemented Rao’s existing traffic prioritization policies while *also* preventing untrusted background applications from running as required by Oestvall. In fact, Petitioner has elsewhere argued the obviousness of that exact implementation of Rao in view of Oestvall, which implementation does *not* have the problem of ignoring Oestvall’s stated “need” to actively prevent untrusted background applications from running. *See* Ex. 2001 (IPR2023-01253 Petition) at 11-13 (arguing that a “POSITA would have found obvious integration of Oestvall’s resource conservation techniques into the Rao system,” and that *it would have been obvious to configure “the improved agent to prevent an untrusted application in the background from*

running”); Ex. 2002 (IPR2023-01337 Petition) at 13-14 (same); Ex. 2003 (IPR2023-01336 Petition) at 13-14 (presenting the same theory that it would have been obvious to modify Rao in view of Oestvall to prevent background untrusted applications from running).

Notably, in each of IPR2023-01253, IPR2023-01336, and IPR2023-01337, Petitioner alleged that “[t]he elements of the resulting Rao-Oestvall system would each perform functions they had been known to perform prior to the combination.” *See* Ex. 2001 at 15-16; Ex. 2002 at 16 (same); Ex. 2003 at 16 (same). In each of those proceedings, Petitioner was able to allege as much because the theories presented in those proceedings did *not* require disregarding Oestvall’s teachings of preventing background untrusted applications from running. Tellingly, Petitioner is unable to make the same allegation in *this* proceeding, because the instant Petition proposes modifying the functionality of Rao (to discard packets from background untrusted applications) as well as modifying the functionality of Oestvall (to allow background untrusted applications to run in the first place) in ways not taught or suggested by either reference, and explicitly taught away from by Oestvall.

The fact that the Petition does not identify any disclosure in the prior art that would suggest its proposed disregard for Oestvall’s teachings of allowing untrusted background applications to run, and further presents no alleged benefit to that implementation (other than simply being a different way to achieve a lesser portion

of the same benefits already achieved by Oestvall’s technique as disclosed), is strongly suggestive of impermissible hindsight. *See* MPEP § 2142 (“[I]mpermissible hindsight must be avoided and ***the legal conclusion must be reached on the basis of the facts gleaned from the prior art.***”); *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (stating that a “factfinder... must be cautious of arguments reliant upon ex post reasoning”). The only plausible reason to combine Oestvall with Rao to ***allow*** background untrusted applications to consume significant resources causing network packets to be generated (in addition to other resources unrelated to network activity)—only for those packets to be ultimately ***discarded*** en masse—is Petitioner’s hindsight desire to point to the eventual discarding of those packets as allegedly satisfying limitation [1e]. *See* Pet. 42-43 (pointing to “selectively ‘discard[ing]’ network packets... from applications that are ‘untrusted’... and running in the background” as allegedly satisfying limitation [1e]).

In sum, the Petition does not provide any reasoned analysis or evidentiary support for why a POSITA would have been motivated to modify Rao in view of Oestvall to allow background untrusted applications to run and then subsequently discard all packets generated by those background untrusted applications. Thus, the Petition cannot show that it would have been obvious to modify Rao to “selectively ‘discard’ network packets... from applications that are ‘untrusted’... and running in

the background,” which is the only aspect of the proposed combination that even allegedly satisfies the requirements of claim limitation 1[e].

B. The Petition’s theory fails to show that prioritizing and discarding intercepted network packets constitutes blocking the application’s Internet service access request.

Even assuming counterfactually that a POSITA would have been motivated to modify Rao and Oestvall in the illogical way the Petition proposes, the Petition would still fail. This is because the Petition fails to show how its alleged combination involves blocking any application’s Internet service *access request*. The Petition’s theory for limitations [1d] and [1e] does not discuss Internet service access requests at all, but instead only discusses transmission of network packets after an access request *has already been granted*. See, e.g., Pet. 30 (discussing “transmitting *packets*” or “send[ing] packetized communications over the Internet” as constituting “Internet service access request[s]”); *id.* 34 (alleging control of “Internet access requests” by “selectively communicating the *packets* to the network based on the determined priority”); *id.* 42 (alleging selective *discarding* of “*network packets*” to be “block[ing] the Internet service access request”).

The plain meaning of blocking an application’s Internet service access request, however, requires blocking an application’s “request” to access Internet service, such as a request by the application to open a network connection or obtain an IP address. This is separate from discarding network packets associated with the

application *after* the Internet service access request has already been granted (and a corresponding network connection has been opened). In addition, the Petition’s generic accusation of a “network packet” as an “access request” is insufficient, because sending a network packet is not inherently a “request” for Internet access. Although the Petition fails to address this fundamental distinction, it is readily apparent from the evidence accompanying the Petition, including the ’184 Patent and Rao itself.

For example, dependent Claim 5 of the ’184 Patent clearly distinguishes between an “Internet access request” and “network activity” associated with that request; “network activity” is delayed until an “Internet access request is received and allowed.” Ex. 1001 at Claim 5 (reciting “when the Internet service access request is blocked in the first state, *delay network activity in association with the first Internet access request until a second Internet access request is received and allowed*”). This distinction is likewise supported throughout the specification. For example, the ’184 Patent separately discusses “*network access requests (e.g., IP address requests)*” and “network capacity/resources usage (e.g., bandwidth usage)” such as transmitting packets. *Id.* at 11:27-32. The Patent provides a further example of blocking a network access request (i.e., a request to connect to the network such as by opening a socket), such that the application needs to submit its network access request later: “As yet another example, *before a connection is allowed to be opened*

(e.g., before a socket is opened), transmission, or a flow/stream is initiated, **it is blocked** and a message is sent back to the application... **to try again later for the requested network access.**” *Id.* at 91:41-49.

Rao also makes clear that “network packets” are separate from Internet access “requests.” For instance, Rao clearly distinguishes between a ***request*** to open a connection and the network packets that are communicated as payloads over that connection (after the connection has opened as a result of the access request being granted):

The filter process intercepts the first and second packets from the application and forwards the intercepted packets to the tunnel process. ***The tunnel process requests the opening of a TCP connection between the first device and a second device. The request to open the TCP connection indicates to the first and second device that the TCP connection will transport packets intended to be transmitted with an unreliable transport protocol. The tunnel process forwards the first and second packets as payloads in a first and second TCP packet to the second device.***

Ex. 1005 ¶[0030]; *see also id.* ¶[0156] (describing FIG. 3B, in which step 365 will first “***establish a lossless protocol based connection***, such as a TCP connection, ***by which lossless protocol packets are communicated***” before communicating the packets in step 390).

Moreover, Rao is alleged to intercept network packets which include destination IP addresses and port numbers obtained over the Internet, meaning that Internet access was previously granted, and a connection opened, for the associated application. *Id.* ¶[0192] (“For example, intercepted network packets for an application communicating to a first destination IP address and a first destination port may be placed in a first queue 540a.”), *id.* ¶[0187] (disclosing the comparison of “destination IP addresses and ports numbers with the IP addresses and ports numbers of the network packet” to identify that a “network packet is associated with an application 338-338n”).

Likewise, Rao teaches that connection sessions are established (such as by opening a socket) *before* network data packets are communicated. *Id.* ¶[0050] (describing an embodiment in which first, “the method includes ***establishing the session*** via the first protocol of one of the following: 1) secure socket layer (SSL) protocol, 2) a transport layer security (TLS) protocol, and 3) a tunneling protocol. ***Additionally***, the method of the present invention may include ***communicating***, by the agent, ***real-time data via the session...***”); *id.* ¶[0159] (describing “a traditional TLS session where ***the session is first negotiated*** and ***the same socket is used for data communication***”).

Accordingly, both the ’184 Patent and Rao make clear that ***transmitting*** individual network packets is distinct from ***granting an Internet service access***

request. Thus, selectively **discarding** (and thus *not* transmitting) a network packet is likewise distinct from “**block[ing] [an] Internet service access request**” so that the requested Internet service is denied to the requesting application.

As noted above, the Petition’s theory asserts that discarding network packets constitutes blocking the Internet service access request. *See* Pet. 42 (“In particular, the ‘filter 322’ would selectively ‘discard’ network packets (**block the Internet service access request**).” This theory fails, because according to the Petition, “an application’s requests to access the Internet” are separate from “the network packets generated by that application” once the “application is permitted to access the Internet.” *Id.* 25. And the Petition is explicit that intercepting and discarding network packets with Rao’s filter occurs only if “**an application is permitted to access the Internet.**” *Id.* (“If 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, as described above....”). Accordingly, the fact that network packets are being filtered shows that the application’s request to access Internet services was **granted**—not **blocked**, as all claims require. *Id.*

The fact that discarding of network packets requires that the application’s access request was already granted is confirmed by in Rao, in which transmission of (or conversely, discarding) a network packet necessarily occurs **after** the Internet service access request (e.g., opening a connection) has already been granted. *See* Ex.

1005 ¶[0030] (“*The tunnel process requests the opening of a TCP connection between the first device and a second device. The request to open the TCP connection indicates to the first and second device that the TCP connection will transport packets....*”); *see also id.* ¶[0050] (describing “establishing the session” separately from “communicating... real-time data via the session”); *id.* ¶[0156] (describing FIG. 3B, in which step 365 will first “*establish a lossless protocol based connection, such as a TCP connection, by which lossless protocol packets are communicated*” before communicating the packets in step 390); *id.* ¶[00159] (describing “a traditional TLS session where *the session is first negotiated and the same socket is used for data communication*”). Accordingly, discarding network packets does not constitute blocking any Internet service access request, and the fact that network packets were even generated in the first place shows that any access request was previously *granted*.

VI. THE BOARD SHOULD EXERCISE ITS DISCRETION TO DENY INSTITUTION OF THIS PARALLEL PETITION.

Under 35 U.S.C. § 314(a), the Board has discretion to deny institution of IPR. *See, e.g., SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018). When a petitioner opts to file two parallel petitions on the same patent, as Petitioner has done here, the Board considers the following guidance in the November 2019 Consolidated Trial Practice Guide (“CTPG”):

Based on the Board’s experience, *one petition should be sufficient* to challenge the claims of a patent in most situations. *Two or more petitions filed against the same patent* at or about the same time (e.g., before the first preliminary response by the patent owner) may place a *substantial and unnecessary burden* on the Board and the patent owner and could raise *fairness, timing, and efficiency concerns*. In addition, multiple petitions by a petitioner are not necessary in the vast majority of cases. To date, a substantial majority of patents have been challenged with a single petition.

CTPG at 59. If a petitioner opts to file two or more parallel petitions concerning the same patent:

[That] petitioner should ... identify: (1) a ranking of the petitions in the order in which it wishes the Board to consider the merits, if the Board uses its discretion to institute any of the petitions, and (2) a succinct explanation of the differences between the petitions, why the issues addressed by the differences are material, and why the Board should exercise its discretion to institute additional petitions if it identifies one petition that satisfies petitioner’s burden under 35 U.S.C. § 314(a).

Id. at 59-60. However, the CTPG emphasizes that, although there may be “cases [in which] *two petitions* by a petitioner may be needed, ... this *should be rare.*” *Id.* at 59.

Here, Petitioner filed a petition in IPR2024-01361 challenging claims 1-6 and 10-20 of the ’184 Patent (“First Petition,” Ex. 2004), and the instant Petition challenging claims 1 and 7-9 of the ’184 Patent (“Second Petition”). Petitioner filed

the same Petitioner's Notice Ranking Petitions ("Ranking Notice") in both this proceeding (Paper No. 2) and the -01361 proceeding (Ex. 2005), giving the First Petition a ranking of 1 and the Second Petition a ranking of 2. Ranking Notice at 1. To the extent that the Board institutes review of the First Petition, institution of the Second Petition should be denied as an unnecessary parallel petition. Petitioner asserts that this is a "rare" case where two petitions are appropriate, but none of the reasons provided by Petitioner demonstrate that is so.

First, Petitioner alleges that "the Patent Owner asserted all 20 claims of the '184 Patent against [Petitioner] in the co-pending litigation." *Id.* at 2. As an initial matter, the Board has previously held that a "Petitioner's contention that 20 claims is a quantum of claims that could not addressed in a single petition strains credulity." *Apple, Inc. v. Koss Corp.*, IPR2021-00686, Paper No. 12 at 13 (PTAB Oct. 12, 2021) ("*Koss*"). Indeed, "[t]he Board routinely receives petitions challenging more than 18 claims," and "the basic filing fee for an *inter partes* review contemplates challenging up to 20 claims." *Id.* (citing 37 C.F.R. §§ 42.15(a)(2)-(3)).

But perhaps more importantly, Patent Owner is ***no longer asserting all 20 claims*** of the '184 Patent in the co-pending district court litigation. Rather, Patent Owner has narrowed its case and is ***now only asserting two claims*** of the '184 Patent against Petitioner. Ex. 2006 (indicating only claims 1 and 13 of the '184 Patent remain asserted). Because the First Petition challenges claims 1 and 13 of the '184

Patent, there are no asserted claims that are uniquely challenged by the Second Petition. In an effort to conserve both Board and party resources, Patent Owner has requested that Petitioner withdraw the Second Petition. Ex. 2007. Petitioner has not yet responded to that request.

Second, Petitioner asserts that “each of the petitions is materially distinguishable from the other by virtue of challenging a unique claim set,” noting that “[t]he First petition challenges claims 1-6 and 10-20” and “[t]he Second Petition challenges claims 1 and 7-9.” Ranking Paper at 2. Petitioner further explains that [t]he overlapping claim challenged in both petitions is [sole] independent claim 1, for which identical grounds are presented in each petition to establish the necessary foundation for challenging the dependent claims in the respective petitions.” *Id.* at 2-3. Thus, the only unique challenges presented in the Second Petition are for three dependent claims—claims 7-9, none of which is asserted in the district court litigation. But “the mere fact that each petition addresses a different claim [set] is insufficient to justify two petitions,” and this particularly true when none of the claims from one of the claim sets is even asserted against Petitioner. *See Google LLC v. Uniloc 2017 LLC*, IPR2020-00448, Paper No. 11 at 7 (PTAB July 9, 2020) (noting that, as here, the claims at issue were no longer asserted in litigation against petitioner); *see also, e.g., Apple, Inc. v. Spier Techs. Ltd.*, IPR2023-00543, Paper No. 8 at 10 (PTAB Aug. 8, 2023) (“*Spier*”) (denying institution of a second petition

in part because the second petition addressed only claims not asserted in the co-pending litigation); *Samsung Elecs. Co. v. Lynk Labs, Inc.*, IPR2022-00150, Paper No. 15 at 8, 10-11 (PTAB July 5, 2022) (same); *Microsoft v. Uniloc 2017 LLC*, IPR2019-01470, Paper No. 7 at 10, 13 (PTAB Feb. 11, 2020) (same).

The four cases that Petitioner relies upon on its Ranking Paper are distinguishable on this basis—the two petitions in those cases addressed different claims sets, but unlike here, both claim sets contained unique challenges to claims that were asserted in co-pending litigation. *Align Tech., Inc. v. 3Shape A/S*, IPR2021-01309, Paper No. 11 at 11-13 (PTAB Feb. 9, 2022); *Dolby Labs., Inc. v. Intertrust Techs. Corp.*, IPR2020-01106, Paper No. 12 at 19-21 (PTAB Jan. 5, 2021); *Adobe Inc. v. Syncloud Techs., LLC*, IPR2020-01393, Paper No. 8 at 8 (PTAB Mar. 11, 2021) (“*Adobe*”); *Google LLC v. Jenam Tech, LLC*, IPR2021-00868, Paper No. 11 at 7-8 (PTAB Nov. 9, 2021) (“*Jenam*”). Moreover, unlike here, in both *Adobe* and *Jenam*, the patent owner failed to respond to the petitioner’s explanation for why two petitions was necessary. *Adobe* at 9; *Jenam* at 8.

Third, Petitioner argues that “the First Petition challenges a set of claims directed to a set of features that are substantively different than those that are challenged by the Second Petition,” claiming that the challenged claims in the First Petition are “directed to a *single* network variant” and the challenged claims of the Second Petition are “directed to a *multiple* network variant.” Ranking Paper at 3

(emphases in original). But Petitioner ignores that the dependent claims challenged in the First Petition (claims 2-6 and 10-20) and those challenged in the Second Petition (claims 7-9) all depend, either directly or indirectly, from sole independent claim 1. The Petition admits that claim 1 has seven claim limitations. *See, e.g.*, Pet. at v-vi. The Second Petition spends approximately 43 of its 75 pages addressing that claim (*id.* at 4-47), with an analysis that Petitioner admits is ***identical*** of that in the First Petition (Ex. 2004 at 4-47; Ranking Paper at 2-3). *See, e.g., Spier* at 10 (denying institution of a second petition in part because of “a high degree of overlap between grounds in each petition, as each petition relies on the combination of [the same art] for the independent claims”).

The only unique analysis that the Second Petition provides, as compared with the First Petition, relates to the mere five claim limitations of non-asserted claims 7-9. *See* Pet. at vi-vii, 47-71. The analysis for claims 7-9 also only introduces one prior art reference that was not included in the First Petition. *Compare id.* at 1-2 with Ex. 2004 at 1-2. That Petitioner found it challenging to address these five claim limitations of these three dependent claims, and this one additional prior art reference, within the confines of the word limits that govern IPR proceedings does not give Petitioner a reason to skirt them. *See, e.g., Koss* at 13-14 (denying institution of a second petition that addressed only eight dependent claims, and rejecting the

argument that allegedly unique dependent claim limitations warranted a second petition).

Fourth, Petitioner claims that “additional factors support institution of Samsung’s multiple petitions.” Ranking Paper at 5. Petition first argues that because the petitions were filed simultaneously, they can be on the same schedule and various efficiencies can allegedly be had. *Id.* This argument flies in the face of the guidance in the CTPG that such parallel petitions are rarely needed and “may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns.” CTPG at 59. Indeed, that parallel petitions can be on the same schedule does not negate the fact that the parties will need to draft, and the Board will need to review and hear argument on, two sets of briefing rather than one.

Petitioner then points out the fact that it “uses the same expert witness to support both petitions, meaning a single deposition should be sufficient.” Ranking Paper at 5. Of course, it is hardly surprising that Petitioner uses the same expert in both proceedings given the vast amount of overlapping arguments and subject matter in the two petitions. Moreover, even if a single day of deposition would be sufficient, Patent Owner would need to spend more time preparing for this combined deposition, which would no doubt be longer than a deposition only concerning the First Petition. Petitioner also ignores the fact that, if both petitions are instituted,

Patent Owner will need to submit two, rather than one, expert declarations, and prepare its own expert to be deposed on both proceedings either in a longer combined deposition or in two separate depositions.

Lastly, Petitioner contends that the fact that “[b]oth petitions also apply the same claim constructions” weighs in favor of institution of both petitions. *Id.* at 5. Petitioner does not explain why this is the case, particularly where Petitioner alleges that no claim construction is even needed. *Compare* Pet. at 2-3 with Ex. 2004 at 2-3. In addition, it would be unusual for the Petitioner to mount inconsistent claim construction positions in two proceedings in the first place.

VII. CONCLUSION

Patent Owner respectfully requests that the Board deny institution for either or both of two independent reasons. First, each of the Petition’s grounds fails on the merits. Second, to the extent that the Board institutes review in the -01361 proceeding, also challenging the ’184 Patent, the Board should deny institution of the instant Petition because Petitioner has failed to otherwise demonstrate why two petitions on the same patent are necessary.

Date: January 4, 2024

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CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner certifies that there are 7,560 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on January 4, 2024, by filing this document through the Patent Trial and Appeal Case Tracking System as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioner:

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