

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO. LTD., and
SAMSUNG ELECTRONICS, AMERICA, INC.,
Petitioners,

v.

FOUR BATONS WIRELESS, LLC,
Patent Owner.

Case IPR2025-00494
Patent 8,073,436

**PATENT OWNER'S PRELIMINARY RESPONSE UNDER
37 C.F.R. § 42.107 TO PETITION FOR INTER PARTES REVIEW**

Mail Stop "PATENT BOARD"
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

EXHIBIT LIST

Exhibit	Description
EX2001	<i>Reserved</i>
EX2002	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Complaint for Patent Infringement, Case No. 2:24-cv-284, Dkt. No. 1 (E.D. Tex. Filed April 26, 2024)
EX2003	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Defendants Samsung Electronics Co., Ltd.’s and Samsung Electronics America, Inc.’s Motion To Stay Proceedings Pending <i>Inter Partes</i> Review, Case No. 2:24-cv-284, Dkt. No. 62 (E.D. Tex. Filed Feb. 7, 2025)
EX2004	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Plaintiff’s Opposition to Samsung’s Motion To Stay Proceedings Pending <i>Inter Partes</i> Review, Case No. 2:24-cv-284, Dkt. No. 63 (E.D. Tex. Filed Feb. 21, 2025)
EX2005	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , First Amended Docket Control Order, Case No. 2:24-cv-284, Dkt. No. 69 (E.D. Tex. Filed April 30, 2025)
EX2006	United States District Courts — National Judicial Caseload Profile, available from https://www.uscourts.gov/sites/default/files/2025-02/fcms_na_distprofile1231.2024.pdf (accessed May 12, 2025)
EX2007	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Plaintiff’s Infringement Contentions, Case No. 2:24-cv-284 (E.D. Tex. served July 25, 2024)
EX2008	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Defendants’ Invalidity Contentions, Case No. 2:24-cv-284 (E.D. Tex. served Nov. 18, 2024)
EX2009	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Samsung’s Preliminary Claim Constructions And Extrinsic Evidence Pursuant To Patent Local Rule 4-2, Case No. 2:24-cv-284 (E.D. Tex. served May 5, 2025)
EX2010	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , Plaintiff Four Batons Wireless, LLC’s Initial Proposed Constructions, Case No. 2:24-cv-284 (E.D. Tex. served May 5, 2025)
EX2011	Correspondence between Samsung and Four Batons

EX2012	<i>Four Batons Wireless, LLC v. Samsung Electronics Co., Ltd. et al.</i> , The Parties' P.R. 4-3 Joint Claim Construction and Pre-Hearing Statement, Case No. 2:24-cv-284 (E.D. Tex. filed May 30, 2025)
EX2013	Declaration of Dr. Konstantinos Psounis in Support of Patent Owner's Preliminary Response
EX2014	Curriculum Vitae for Dr. Konstantinos Psounis

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Background.....	2
A.	The '436 Patent Invention	2
B.	Petitioner's References.....	4
1.	Bahl [EX1005]	4
2.	Hsu [EX1006]	5
3.	Weisshaar [EX1007]	6
III.	Legal Standards	7
IV.	Level of Ordinary Skill in the Art	8
V.	Claim Construction.....	9
VI.	Argument	10
A.	[Claim 1] The Asserted Grounds Fail to Teach or Render Obvious "having said mobile control use of said interfaces by using a second interface, during a silent period of a second application running on said mobile and using said second interface, to support a first application running on said mobile and using a first interface that is heterogeneous to said second interface such as to use both said first and second heterogeneous interfaces concurrently during said silent period to support said first application"	10
B.	[Claim 15] The Asserted Grounds Fail to Teach or Render Obvious "having said mobile control processes of said mobile during silent periods based on said mobile running a non-real-time application thereon or a real-time application thereon"	16
C.	[Claim 19] The Asserted Grounds Fail to Teach or Render Obvious "said mobile being configured to monitor applications running on it, including real time or non real time nature of said applications"	21
D.	[Claim 19] The Asserted Grounds Fail to Teach or Render Obvious "wherein said mobile is configured to switch between modes of operation of based on said application awareness and said situation awareness, including to switch	

	between one or more of the following modes of operation[:] QoS enhancement through multiple address mode, network discovery mode, energy saving mode, and chat with devices mode”	22
E.	The Asserted Grounds Fail to Teach or Render Obvious All Dependent Claims	25
VII.	Conclusion	26

I. Introduction

Patent Owner Four Batons Wireless, LLC (“Four Batons” or “Patent Owner”) respectfully requests that the Board deny Samsung Electronics Co., Ltd. and Samsung Electronics, America, Inc.’s (collectively, “Samsung” or “Petitioner”) Petition to institute *inter partes* review of U.S. Patent No. 8,073,436 (“the ’436 Patent”) because Samsung has not shown a reasonable likelihood of prevailing on its challenge to any of claims 1-17 and 19 (the “Challenged Claims”). *See* Pet. at 1.

Petitioner’s challenges to the independent claims of the ’436 Patent (and therefore all Challenged Claims) fail for multiple reasons. Several of the challenged independent claims of the ’436 Patent recite differences in claim scope that Petitioner glosses over because it has no compelling prior art capable of addressing those limitations. Nor did Petitioner even address all elements of all Challenged Claims, as discussed in more detail below.

First, Petitioner’s challenge to Claim 1 is deficient, at least because it fails to teach or render obvious using two interfaces to support a first application, much less the claimed arrangement reciting (i) a second application using a second interface and (ii) using that second interface to support a first application during a silent period of the second application.

Second, Petitioner’s challenges to Claims 15 and 19 fail, at least because Petitioner never addressed how it was distinguishing real-time from non-real time

applications. To the extent Petitioner's theories can be understood, it assumes that real-time applications are synonymous with an application's throughput requirements, and therefore all it needed to show was the prior art addressing throughput in some capacity. However, Petitioner's implicit claim interpretations and unsupported conclusions cannot present a reasonable likelihood of success on the merits.

Third, Petitioner's challenge to Claim 19 also fails at least because it failed to address switching "between" the claimed modes. Instead, even under its own interpretation of the prior art, Petitioner—at best—showed only switching into a purported "energy conservation mode."

For those and the other reasons discussed below, the Petition fails to present a reasonable likelihood of success and should be denied.

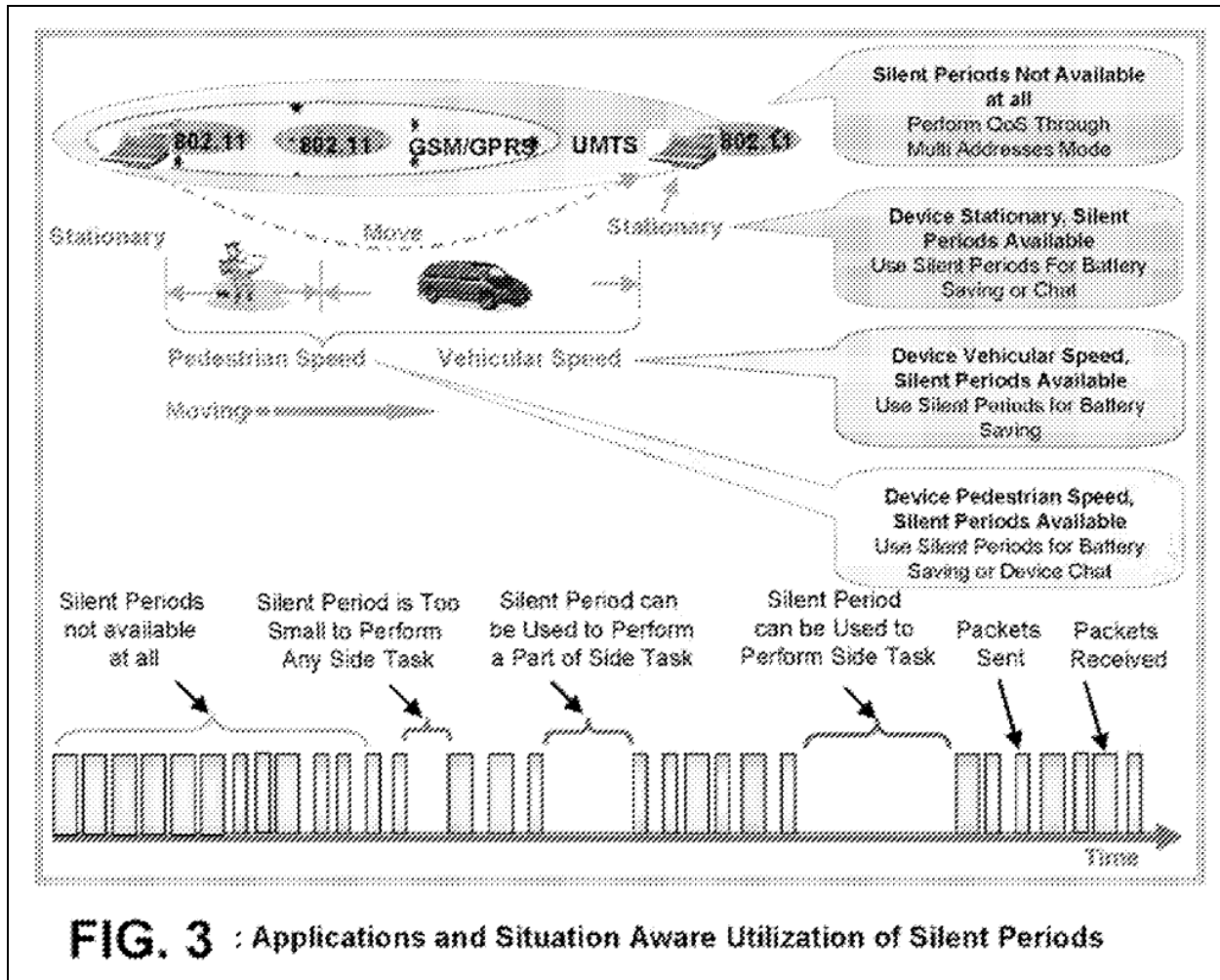
II. Background

A. The '436 Patent Invention

The '436 Patent is titled "Applications and/or Situation Responsive Utilization of Silent Periods" and "relates generally to wireless networking and more particularly to systems and methods for improved utilization of silent periods in wireless devices." EX1001 ('436 Patent) at 1:1-4, 1:14-16. The Patent notes that "emerging mobile devices are being equipped with multiple interfaces allowing users to take advantage of heterogeneous radio technologies (such as, by way of

example, cellular networks and wireless LANs).” *Id.* at 5:42-45, 2:41-43. “However, more advantage could be reaped if the mobile uses its network interfaces according to the applications and situations responsiveness.” *Id.* at 2:43-45.

For example, the ’436 Patent inventors recognized that mobile devices have different needs under different conditions, such as “when they are running real-time applications as compared to when they are running non-real-time [a]pplications.” *Id.* at 2:45-50. Real-time application such as voice-over-IP (VoIP) are “bombarded” with data “without much pause or break thus not leaving long and useable mute periods.” *Id.* at 2:50-54. “These short pauses are dubbed in available literature as ‘Silent Periods’,” and the ’436 Patent teaches techniques for optimizing mobile device behavior based on the presence of these silent periods along with application and situational awareness. *Id.* at 2:61-62. Examples of this can be seen below in Figure 3:



Id. Fig. 3; *see also id.* at 9:9-27.

B. Petitioner's References¹

1. Bahl [EX1005]

Bahl is a U.S Patent Application Publication titled "Selecting a Wireless Networking Technology on a Device Capable of Carrying Out Wireless Network

¹ Given the multiple deficiencies in the Petition that render it unable to present a reasonable likelihood of success, it is unnecessary to address Petitioner's other

Communications Via Multiple Wireless Technologies” and is “directed to decision-making within computing devices for addressing and/or avoiding wireless signal transmission interference.” EX1005 (Bahl) at (54), [0001]. To that end, Bahl is primarily concerned with avoiding interference, however Petitioner relies on it for its limited disclosure addressing selecting wireless networks based on simple criteria such as throughput. *See* Pet. at 3-4 (citing EX1005 (Bahl) [0093]). Those simple criteria relied on by Petitioner cannot teach or render obvious the more advanced application and situational awareness-based techniques taught and claimed by the ’436 Patent, such as monitoring the real time nature of applications and/or controlling processes of a mobile based on running a real time application. *See, e.g.*, EX1001 (’436 Patent) Claims 15 (17:30-40) and 19 (18:36-38).

2. Hsu [EX1006]

Hsu is a U.S Patent Application Publication titled “Wireless Local Access Network System Detection and Selection.” EX1006 (Hsu) at (54). Hsu “relates generally to communication systems, and more specifically to detection of a Wireless Local Access Network (WLAN) by a mobile station in a cellular

references (White and Ranta) at this time. If the Petition is instituted, then Patent Owner reserves the right to fully address Petitioner’s theories based on White and Ranta.

communication system.” *Id.* [0005]. Hsu explains that at the time of its 2003 filing, Wireless Local Access Networks (WLANs) were being “considered by many cellular carriers to alleviate loading of a cellular system, so as to increase capacity.” *Id.* [0007].

Corresponding to that purpose, Hsu teaches that “if the [mobile] system 50 is currently communicating via the cellular network, such as a cdma2000 network, the system 50 is instructed to continue such communication but to continue to try to detect the availability of WLAN.” *Id.* [0027]. Thus, in Hsu it is the cellular network that is directing the mobile device to try to detect and connect to available WLANs in order to try to offload that mobile device’s data onto the WLAN to benefit the cellular network, rather than the mobile device optimizing its behavior to provide superior functionality and performance.

3. Weisshaar [EX1007]

Weisshaar is a U.S Patent Application Publication titled “Method of Enabling the Transmission of Data in a Wireless Communication Network” and it “relates generally to communication systems, and in particular, to a method of enabling the transmission of data in a wireless communication network.” EX1007 (Weisshaar) at (54), [0003]. Weisshaar purports to address “a need for a method of informing an application that a communication interface is available to enable the transmission of data in a wireless communication device.” *Id.* [0007].

Petitioner relies on Weisshaar almost solely for a single sentence from paragraph [0051] taken out of context, which Petitioner asserts shows Weisshaar discloses “concurrent use of more than one interface to support an application.” Pet. at 24-25. However, there is not a single embodiment of Weisshaar which supports Petitioner’s interpretation of that sentence, and a POSITA would not have mistaken an awkwardly worded sentence for a disclosure of teachings which are absent from every embodiment in the disclosure. Furthermore, even if Petitioner’s reliance on a single sentence out of context was sufficient to show such a disclosure, Petitioner’s Grounds based on Weisshaar still fail to teach or render obvious using multiple interfaces in the claimed manner. *See, e.g.,* EX1001 (’436 Patent) Claim 1 at 16:27-35.

III. Legal Standards

An IPR should not be instituted unless Petitioner has shown a likelihood of success on the invalidity grounds *presented in the petition*. *See In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (“[T]he Board must base its decision on arguments that were advanced by a party, and to which the opposing party was given a chance to respond.”).

“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (petitions must identify “with

particularity . . . the evidence that supports the grounds for the challenge to each claim”); 35 U.S.C. § 312(a)(3). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

“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.” *In re Magnum Oil Tools Int’l*, 829 F.3d at 1380. The obviousness inquiry requires considering whether one of skill in the art “would have been motivated to combine the prior art to achieve the claimed invention.” *In re NuVasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (quoting *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016)). “[T]he factual inquiry whether to combine references must be thorough and searching...” *Id.*

IV. Level of Ordinary Skill in the Art

Petitioner asserts a POSITA “would have had a bachelor’s degree in electrical engineering, computer science, or a similar field and two years of experience in the design of wireless communication technology.” Pet. at 5. For purposes of this

Preliminary Response,² Patent Owner has applied the same definition, because even under Petitioner’s proposed POSITA definition the Petition fails to present a reasonable likelihood of invalidating any Challenged Claim.

V. Claim Construction

Claims are construed according to *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). “Any prior claim construction determination concerning a term of the claim in a civil action...will be considered.” *Id.*

Despite having the burden to propose how each “challenged claim is to be construed” in the Petition itself, Petitioner did not propose any express constructions. *See* 37 CFR § 42.104(b)(3); Pet. at 5. However, in the District Court litigation Petitioner asserts that multiple claim terms are indefinite or require construction, as shown in Exhibit 2012. EX2012 (Joint Claim Construction Statement) at PDF pages 15-16. Notably, Petitioner did not explain “why [its] inconsistent positions are warranted”—a fact that further supports denial of the Petition here. *See Cambridge Mobile Telematics, Inc., Petitioner, v. Sfara, Inc.*, IPR2024-00952, Paper 12 at 7-9 (P.T.A.B. Dec. 13, 2024) (informative).

² Patent Owner reserves the right to propose its own definition of a POSITA if the Petition is instituted.

VI. Argument

Petitioner challenges only '436 Patent Claims 1-17 and 19, of which only Claims 1, 15, and 19 are independent claims and all other Challenged Claims depend from those independent claims. Pet. at 1; EX1001 ('436 Patent) at 16:14-18:54. Petitioner asserts that Claim 1 is “rendered obvious by *Bahl* in view of *Hsu* and *Weisshaar* under 35 U.S.C. § 103” and Claims 15 and 19 “are rendered obvious by *Bahl* in view of *Hsu*, *Weisshaar* and *Ranta* under 35 U.S.C. § 103.” Pet. at 2. However, for at least the following reasons the Petition fails to present a reasonable likelihood of rendering any Challenged Claim unpatentable, and should therefore be denied.

A. [Claim 1] The Asserted Grounds Fail to Teach or Render Obvious “having said mobile control use of said interfaces by using a second interface, during a silent period of a second application running on said mobile and using said second interface, to support a first application running on said mobile and using a first interface that is heterogeneous to said second interface such as to use both said first and second heterogeneous interfaces concurrently during said silent period to support said first application”

'436 Patent Claim 1 recites:

having said mobile control use of said interfaces by using a second interface, during a silent period of a second application running on said mobile and using said second interface, to support a first application running on said mobile and using a first interface that is heterogeneous to said second interface such as to use both said first and second

heterogeneous interfaces concurrently during said silent period to support said first application.

EX1001 ('436 Patent) at 16:27-35.

The Asserted Grounds fail to teach or render this limitation, at least because no reference teaches or renders obvious using two interfaces to support a first application, much less the claimed arrangement reciting (i) a second application using a second interface and (ii) using that second interface to support a first application during a silent period of the second application.

The '436 Patent teaches identifying and utilizing “silent periods” of an application to perform other tasks when the application has no traffic to send or receive. *See, e.g.*, EX1001 ('436 Patent) at 2:41-3:15; Claim 1 at 16:24-26 (“said silent periods being brief intervals during which an application running on said mobile has no application traffic to send or receive.”). “Depending on the application, the duration of these silent periods may vary. The Silent Periods, ‘if available’, and ‘if of reasonable duration’, and also ‘if accurately predicted’ (for example, by monitoring the incoming and outgoing user traffic through a network interface) can be used to perform several tasks.” *Id.* at 7:29-34. The Patent further teaches that multiple interfaces (e.g., WAN and WLAN) can be utilized to assist or support a single application at the same time to enhance network performance or reliability. *See id.* at 4:9-16, 8:10-26, 9:42-10:34.

Limitation 1[d] recites “having said mobile control use of said interfaces by using a second interface, during a silent period of a second application running on said mobile and using said second interface, to support a first application running on said mobile and using a first interface that is heterogeneous to said second interface such as to use both said first and second heterogeneous interfaces concurrently during said silent period to support said first application.” *Id.* at 16:27-35. Nothing that Petitioner relies on comes close to teaching or suggesting these elements as claimed. As an initial matter, none of Petitioner’s references even teaches using two interfaces concurrently to support a single application, much less in the claimed manner.

Petitioner is solely reliant on a single sentence from Weisshaar taken out of context that states “the connection manager manages multiple interfaces and **reports concurrent use** of more than one interface, either by the same or different applications.” EX1007 (Weisshaar) [0051] (emphasis added); Pet. at 24-25. Petitioner must limit its analysis to that single sentence, because the rest of the disclosure makes clear that the “concurrent use” being **reported** is simply the use of any interfaces by any applications. It refers to the “same or different” applications because the interfaces in Weisshaar are not tied to an individual application, and each application may need to know whether the interfaces it considers acceptable are in use by **any** application, and not just that an interface is being used to send data

for the requesting (i.e. “same”) application. *See id.* [0055]; EX2013 (Psounis Decl.) ¶¶30-33.

This is confirmed by the fact that in every single embodiment taught by Weisshaar, each application is only using a single interface at any given time. *See* EX1007 (Weisshaar) Figs. 4-9, [0052]-[0060]; EX2013 (Psounis Decl.) ¶34. The only other place the word “concurrent” appears in Weisshaar is in Claims 9, 19, and 21, which all refer to a “**second** application” transmitting on a “**second** communication interface.” *See* EX1007 (Weisshaar) at Claim 9 (referring to “concurrently transmitting data associated with said second application on said second communication interface” while Claim 1 from which it indirectly depends refers to “transmitting data associated with said application on said communication interface”), Claims 19 and 21 (similar); EX2013 (Psounis Decl.) ¶34. Thus, a POSITA would have understood that Weisshaar does not teach or render obvious “concurrent use of more than one interface to support an application” as Petitioner concludes based off a single sentence taken out of context with no further analysis.

Limitation 1[d] further recites “support[ing] a first application running on said mobile and using a first interface that is heterogeneous to said second interface such as to use both said first and second **heterogeneous interfaces** concurrently.” EX1001 (’436 Patent) Claim 1 at 16:30-34 (emphasis added). The ’436 Patent notes that using two **heterogeneous** interfaces to support a single application, “allow[s]

users to take advantage of heterogeneous radio technologies—for example, they may use WLANs for higher data rates and WANs for better coverage.” *Id.* at 7:11-14; *see also id.* at 9:44-49. However, even assuming *arguendo* that Weisshaar did teach supporting a single application with multiple interfaces, Petitioner cites nothing in Weisshaar that would suggest those interfaces would necessarily be heterogeneous to each other. *See* Pet. at 24-26.

Furthermore, even if we set aside the absence of using two interfaces to support a single application in Petitioners’ references, Petitioner’s theory still fails to teach or render obvious the specific arrangement recited in the claims. The claim language recites specific requirements, and two of those requirements pertinent to the discussion are summarized below:

- (1) There must be a first application using a first interface and a second application using a second interface.
- (2) During a silent period of the **second application**, both interfaces must be used concurrently to support the **first application**.

Petitioner’s theory amounts to an assertion that, because it believes these elements existed conceptually in the prior art separately (i.e., multiple applications, multiple interfaces, silent periods, etc.), that is sufficient to invalidate the claims. However, that is not sufficient under the law. *See Polaris Industries, Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1068 (Fed. Cir. 2018) (“We have observed that the

prejudice of hindsight bias often overlooks that the genius of invention is often a combination of known elements which in hindsight seems preordained.” (internal quotes omitted)); *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1360 (Fed. Cir. 2019) (rejecting an invalidity challenge for failing to “explain why a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does*” (emphasis in original)).

Petitioner concedes that “*Weisshaar* [] does not disclose ‘using a second interface, during a silent period of a second application[,]’” but suggests that “Hsu, on the other hand, expressly discloses that ‘[s]ystem selection may be based on ... application status.’” Pet. at 25. Petitioner notably ignores the rest of the requirements of the limitation. It is not enough to use a second interface, or even use a second interface during a silent period (which Petitioner also does not show in the prior art). The claim recites that (1) there must be a first application using a first interface and a second application using a second interface, and (2) during a silent period of the second application, both interfaces must be used concurrently to support the first application. Petitioner identifies no first application using a first interface, no second application using a second interface, and certainly no situation where, during a silent period of the second application, both interfaces are used concurrently to support the first application. *See* EX2013 (Psounis Decl.) ¶35. Petitioner does not even try to support the conclusion that the full arrangement would be obvious, but instead

suggests that identifying the concepts of multiple purported interfaces and a purported silent period in the prior art is sufficient even though they ignore the requirement that heterogeneous interfaces must be used concurrently to support the same application. Further, such assertions are based purely on hindsight with no support from the references themselves, and cannot present a reasonable likelihood of success on the merits. Therefore, for at least the foregoing reasons Petitioner's challenge to Claim 1 fails.

B. [Claim 15] The Asserted Grounds Fail to Teach or Render Obvious “having said mobile control processes of said mobile during silent periods based on said mobile running a non-real-time application thereon or a real-time application thereon”

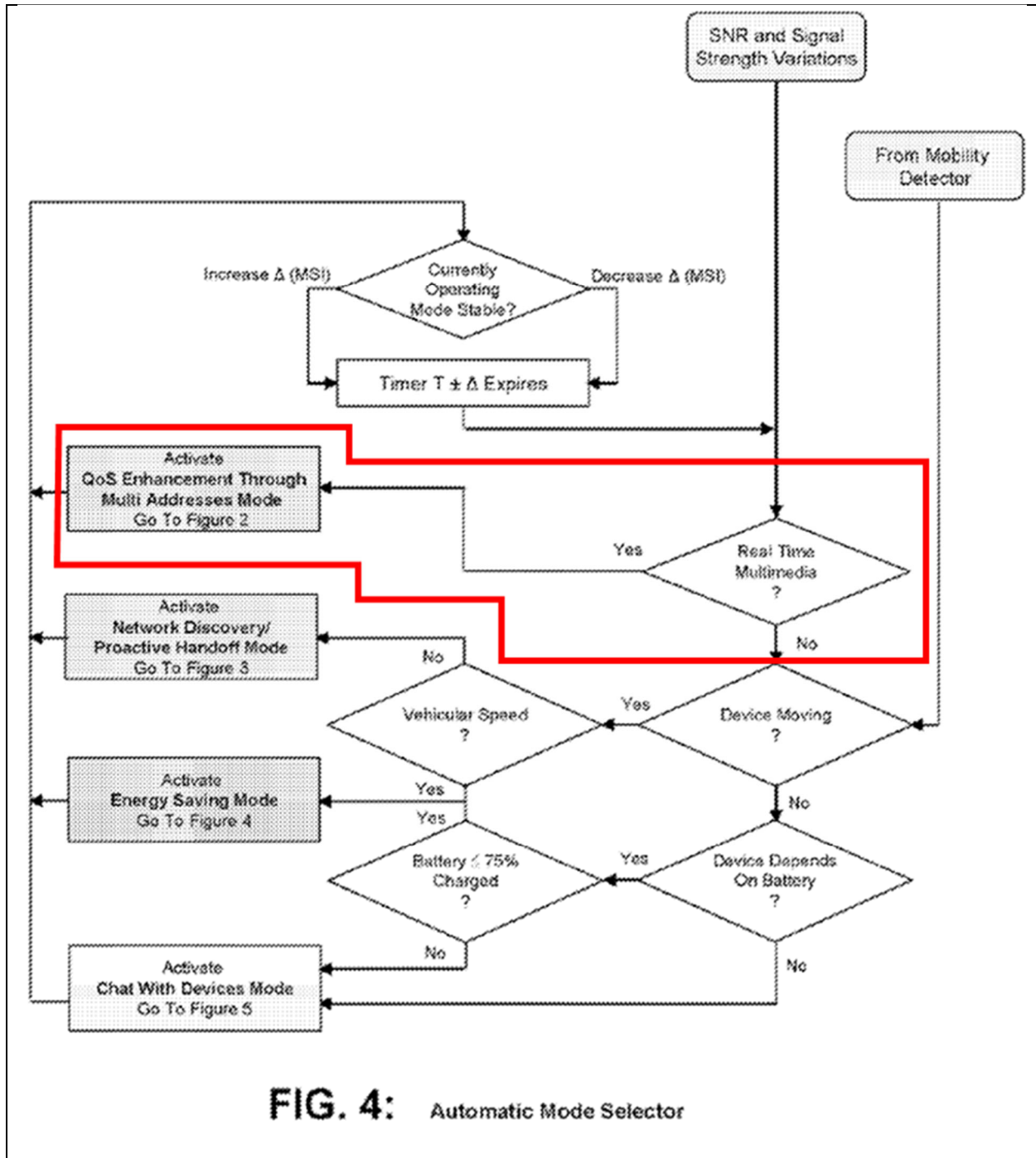
The Asserted Grounds fail to teach or render obvious the Claim 15 limitation “having said mobile control processes of said mobile during silent periods based on said mobile running a non-real-time application thereon or a real-time application thereon.” EX1001 ('436 Patent) Claim 15 at 17:30-33.³ The Grounds fail at least

³ Claim 15 also recites “having said mobile perform certain processes based on: a) if it is running a real-time application and it is stationary; b) if it is running a non-real-time application and it is moving; c) if it is running a non-real-time application and it is stationary.” EX1001 ('436 Patent) at 17:34-40. The Petition Grounds also fail to teach or render obvious those limitations for the same reasons discussed in this section.

because Petitioner has failed to show they teach or render obvious controlling processes of a mobile based on whether a real-time or non-real-time application is running in the claimed manner. Petitioner never addressed how it was distinguishing real-time from non-real time applications. To the extent Petitioner's theory can be understood, it assumes that real-time applications are synonymous with an application's throughput requirements, and therefore all it needed to show was the prior art addressing throughput in some capacity. However, Petitioner provides no support for that conclusion.

The '436 Patent inventors "perceive[d] that the needs of the devices are different when they are running real-time applications as compared to when they are running non-real-time [a]pplications." EX1001 ('436 Patent) at 2:45-48. "[W]hen the devices are running applications such as voice-over-IP (VoIP) or streaming media they are bombarded with continuous or heavy data; perhaps without much pause or break thus not leaving long and useable mute periods." *Id.* at 2:50-54 (emphasis added). "Whereas while running **non-real-time applications**, they are not heavily flooded with [a] **continuous stream of data, rather the data flow is bursty and thus there may appear intervals when the devices can take a momentary pause** (i.e., the Device has no traffic to send or receive). These short pauses are dubbed in available literature as 'Silent Periods'." *Id.* at 2:56-62 (emphasis added); EX2013 (Psounis Decl.) ¶¶36-38.

The '436 Patent explains that optimizing real-time applications is not necessarily accomplished by simply optimizing bandwidth—rather factors like bandwidth must be balanced as part of overall Quality of Service (“QoS”). *See, e.g.*, EX1001 ('436 Patent) at 3:63-4:4 (discussing “having the mobile perform [] QoS enhancement if it is running a real-time application” and other modes if not); 2:55-56 (noting “multiple interfaces” may be used for Bandwidth or Quality of Service (QoS) enhancement” (emphasis added)); EX2013 (Psounis Decl.) ¶¶39-41. This is further demonstrated in Figure 4:



EX1001 ('436 Patent) Figure 4 (highlighting QoS Enhancement use for Real Time Multimedia).

As noted above, the '436 Patent describes non-real-time applications as those that “are not heavily flooded with [a] continuous stream of data, rather the data flow is bursty and thus there may appear intervals when the devices can take a momentary pause (i.e., the Device has no traffic to send or receive).” *Id.* at 2:56-62. Those periods where the device can take a pause can be used as “Silent Periods.” *Id.* The '436 Patent teaches that determinations for QoS are based not just on having sufficient total bandwidth, but potentially other factors including stability, signal to noise ratio (“SNR”) and radio signal deterioration. *Id.* at 9:27-10:63, Figs. 4-5. Even if throughput is sufficient, a low SNR or high signal deterioration can lead to significant latency and errors in sending and receiving data which could disproportionately impact real-time applications. EX2013 (Psounis Decl.) ¶¶39-41.

Despite these concepts being addressed by the '436 Patent, Petitioner made no effort to show that what it was relying on were real-time or non-real time applications. For this limitation, Petitioner relied on its analysis from Claim 8. Pet. at 53. For Claim 8, Petitioner relied on Bahl as teaching “having a mobile computing device select a network interface based on whether the mobile computing device is running a real-time-application or a non-real-time application” citing to Bahl’s discussion of “throughput and application throughout requirements.” Pet. at 30-31. However, none of that explains how it was interpreting the term “real-time,” or what criteria it is using to distinguish real-time from non-real-time applications. Instead,

Petitioner drew arbitrary lines between the two types of applications apparently based on what its reference discloses (throughput), rather than what the '436 Patent discloses or how the terms were understood in the art at the time of invention.

Bahl never addresses the concept of “real-time”, nor does it provide techniques directed towards one type of application or the other. As far as Petitioner’s theory can be understood, Petitioner seems to be asserting that any application requiring an unspecified amount of throughput is implicitly a real-time application. However, as discussed above, that is not consistent with the '436 Patent disclosure or the understanding of a POSITA. For example, a web browser used to download large files for later use might require a large amount of throughput, but a POSITA would not have considered it to be a real-time application. EX2013 (Psounis Decl.) ¶41. Thus, Petitioner’s attempt to implicitly tie the claim language regarding real-time and non-real-time applications solely to the concept of throughput without addressing the actual claim language demonstrates the Petition cannot present a reasonable likelihood of success on the merits.

C. [Claim 19] The Asserted Grounds Fail to Teach or Render Obvious “said mobile being configured to monitor applications running on it, including real time or non real time nature of said applications”

The Asserted Grounds fail to teach or render obvious the Claim 19 limitation “said mobile being configured to monitor applications running on it, including real time or non real time nature of said applications.” EX1001 ('436 Patent) at 18:36-

38. For the same reasons discussed for Claim 15 above in Section VI.B, the Petition grounds fail to teach or render obvious this limitation.

D. [Claim 19] The Asserted Grounds Fail to Teach or Render Obvious “wherein said mobile is configured to switch between modes of operation of based on said application awareness and said situation awareness, including to switch between one or more of the following modes of operation[:] QoS enhancement through multiple address mode, network discovery mode, energy saving mode, and chat with devices mode”

The Asserted Grounds fail to teach or render obvious the Claim 19 limitation “wherein said mobile is configured to switch between modes of operation of based on said application awareness and said situation awareness, including to switch between one or more of the following modes of operation[:] QoS enhancement through multiple address mode, network discovery mode, energy saving mode, and chat with devices mode.” EX1001 (’436 Patent) at 18:48-54. The Grounds fail at least because they do not teach or render obvious **switching between** the claimed modes. Rather, even under its own interpretation of the prior art, Petitioner—at best—showed switching into an “energy conservation mode.” Pet. at 62-64. However, the claims require switching **between** one or more of the recited modes, not merely switching to one of those modes from another unspecified mode. Thus, the Petition grounds fail for at least that reason.

The ’436 Patent describes:

[M]ethods for efficient utilization of Silent Periods for multiple tasks such as Proactive Handoff, Energy Saving, and Device Chat. Th[e]

document also explains switching/shifting between the tasks based on the current application running on the device and the current situation of the Device within which it is operating. Thus based on the Application and Situation, the device will select and operate in one of the following four appropriate modes of operation and also will be capable of switching from one mode of operation to another automatically[:]

QoS Enhancement Through Multiple Address Mode
(abbreviated as QEM);

Network Discovery/Proactive Handoff Mode (abbreviated as
NDM);

Energy Saving Mode, (abbreviated as ESM); and

Chat with Devices Mode (abbreviated as CDM).”

EX1001 (’436 Patent) at 3:17-32; *see also id.* at 4:37-44, 9:16-27.

An embodiment of this can be seen in Figure 4:

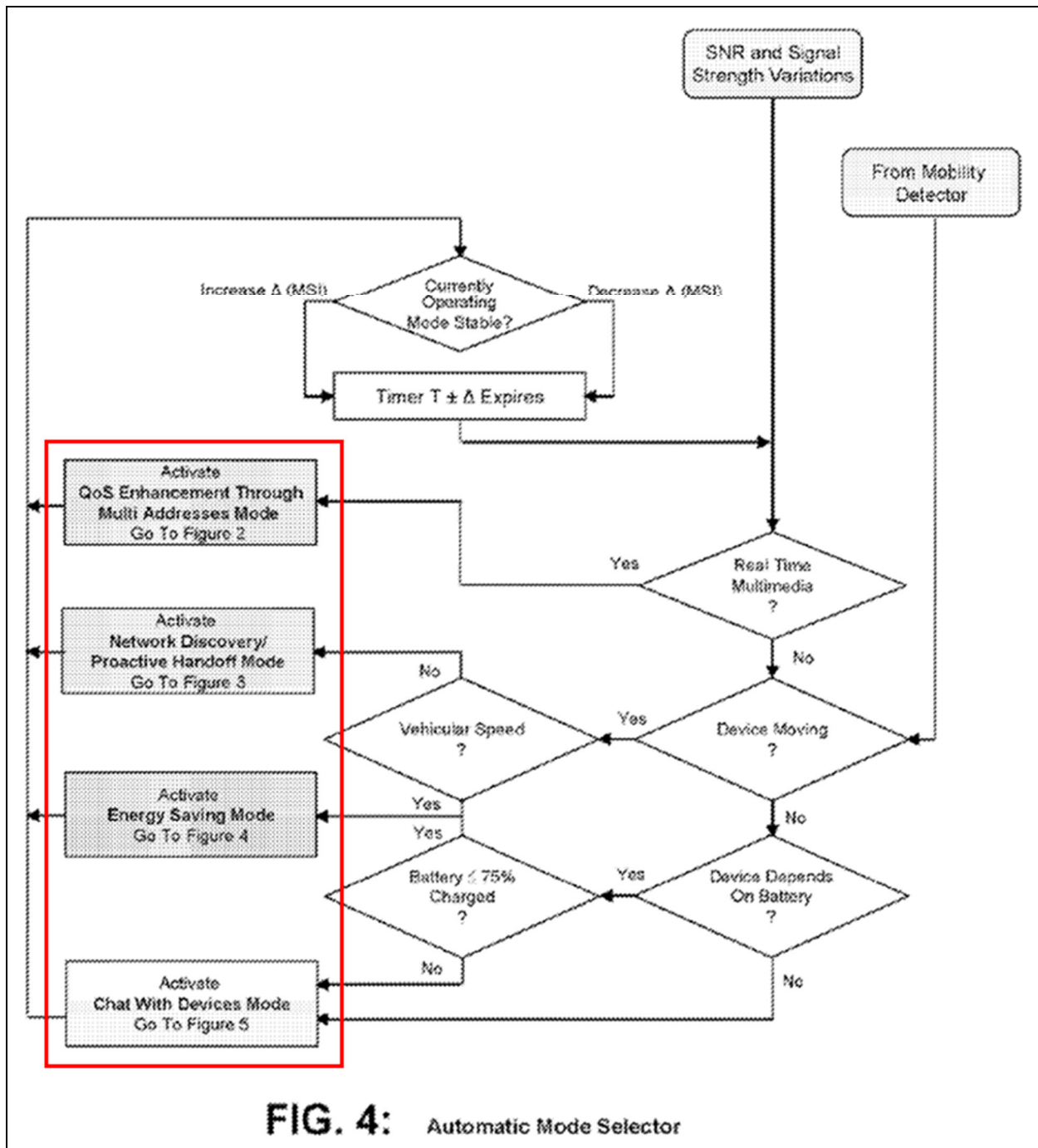


FIG. 4: Automatic Mode Selector

Id. Figure 4 (annotated).

Thus, the '436 Patent teaches switching between one or more modes based on certain criteria in order to efficiently use available silent periods. For this limitation, Petitioner relies solely on Bahl's purported disclosure of "switching into an energy

conservation mode based on the needs of the applications.” Pet. at 62-64. However, that is not what the claim recites. Petitioner failed to map anything in the asserted prior art to actual claim language, which requires “**switch[ing] between** one or more of the [] modes of operation.” EX1001 (’348 Patent) at 18:48-54 (emphasis added). It is not enough to simply show entering a single recited mode of operation as Petitioner purports to have done—that fails to satisfy the plain language of the claim which requires switching between modes (*i.e.*, from one mode to another mode). *See* EX1001 (’436 Patent) at 3:22-26 (“Thus based on the Application and Situation, the device will select and operate in one of the following four appropriate modes of operation **and also will be capable of switching from one mode of operation to another automatically.**” (emphasis added)); EX2013 (Psounis Decl.) ¶¶42-43. Thus, given Petitioner’s failure to map anything to the plain language of the claim, the Petitioner fails to present a reasonable likelihood of success for Claim 19.

E. The Asserted Grounds Fail to Teach or Render Obvious All Dependent Claims

As discussed above, the asserted grounds fail to present a reasonable likelihood of teaching or rendering obvious any of independent claims 1, 15, or 19. Because all other Challenged Claims depend from those independent claims, the Petition necessarily fails to teach or render obvious those dependent claims as well. Thus, for foregoing reasons, the Petition does not present a reasonable likelihood of invalidating any Challenged Claim and should be denied.

VII. Conclusion

Patent Owner respectfully requests that the USPTO refuse to institute *inter partes* review for the reasons stated herein.

Dated: June 23, 2025

Respectfully submitted,

By: /Michael F. Heim /
Michael F. Heim (Reg. No. 32,702)
Attorney for Patent Owner
Four Batons Wireless, LLC

CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing was served via email to lead and backup counsel of record for Petitioner as follows:

Lead Counsel for Petitioner
David A. Caine, Reg. No. 52,683 (david.caine@arnoldporter.com) Arnold & Porter Kaye Scholer LLP 5 Palo Alto Square, Suite 500 300 El Camino Real Palo, Alto, CA 94306 Tel: 650-319-4500 Fax: 650-319-4700
Back-Up Counsel for Petitioner
Ali R. Sharifahmadian, Reg. No. 48,202 (ali.sharifahmadian@arnoldporter.com) Arnold & Porter Kaye Scholer LLP 601 Massachusetts Ave., NW Washington, DC 20001-3743 Tel: 202-942-5000 Fax: 202-942-5999 Jeffrey A. Miller (Reg. No. 35,287) (jeffrey.miller@apks.com) Arnold & Porter Kaye Scholer LLP Five Palo Alto Square, Suite 500 3000 El Camino Real Palo Alto, CA 94306-3807 Tel: 650-319-4500 Fax: 650-319-4700
Service Email: xSamsungFourBatonsAP@arnoldporter.com

Dated: June 23, 2025

Respectfully submitted,

By: /Michael F. Heim /
Michael F. Heim (Reg. No. 32,702)
Attorney for Patent Owner
Four Batons Wireless, LLC

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that this brief complies with the type-volume limitation of 37 C.F.R. § 42.24 because this brief contains 4,873 words.

Dated: June 23, 2025

Respectfully submitted,

By: /Michael F. Heim /
Michael F. Heim (Reg. No. 32,702)
Attorney for Patent Owner
Four Batons Wireless, LLC