

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.

Petitioners,

v.

MAXELL, LTD.,
Patent Owner

Case: IPR2024-00906

U.S. Patent No. 11,445,241

PATENT OWNER'S SUR-REPLY

Mail Stop **Patent Board**
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
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PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	1st Amended Docket Control Order from District Court Litigation
2002	Original Docket Control Order from District Court Litigation
2003	Maxell's Supplemental Preliminary Election of Asserted Claims
2004	Defendants' Preliminary Election of Prior Art
2005	U.S. Patent Publication No. US 2006/0203758 (Tee)
2006	U.S. Patent Publication No. US 2006/0135076 (Honkanen)
2007	Petitioners' invalidity contentions chart in District Court—Tee
2008	Petitioners' invalidity contentions chart in District Court—Honaken
2010	L2CAP-Based Prototype Media Streaming via Bluetooth Technology
2011	https://www.nytimes.com/2009/10/19/technology/companies/19nokia.html
2012	https://www.codeproject.com/Articles/9357/Symbian-OS-design-faults
2013	https://www.engadget.com/2010-10-21-nokia-refines-development-strategy-adopts-html5-in-qt-and-ends-s.html
2014	https://www.businessinsider.com/ios-5-over-the-air-updates-2011-7
2015	https://support.apple.com/en-us/102998
2016	Conference Transcript
2017	Declaration of Bruce McNair, dated March 26, 2025
2018	Claim Construction Order
2019	https://time.com/4837176/iphone-10th-anniversary/
2020	https://sites.suffolk.edu/jhtl/2014/09/30/nfc-technology-makes-first-appearance-in-apple-devices/
2021	https://www.nfcw.com/2010/12/07/35385/google-unveils-first-android-nfc-phone-but-nexus-s-is-limited-to-tag-reading-only-for-now/
2022	https://news.samsung.com/us/samsung-announces-launch-dates-for-groundbreaking-mobile-payment-service-samsung-pay/
2023	https://www.theregister.com/2008/08/13/iphone_not_very_3g/
2024	https://www.wsj.com/articles/SB118306134626851922
2025	https://blogs.windows.com/devices/2012/09/19/circuit-training-the-amazing-evolution-of-smartphone-processors/
2026	Essentials of Mobile Handset Design
2027	https://9to5mac.com/2012/06/02/new-iphone-to-debut-with-dual-band-40nm-bcm4334-broadcom-wifi-significant-power-savings-and-wifi-directios-airdrop/
2028	https://community.arubanetworks.com/browse/blogs/
2029	blogviewer?blogkey=5c9cb0f9-a77e-4f1f-95de-4aac6fa7b262

Patent No. 11,445,241
Patent Owner's Sur-Reply

Exhibit	Description
2030	SAM-MAX-00388464
2031	Creusere Deposition Transcript
2032	https://www.wired.com/2007/06/why-the-iphone-2/
2033	https://www.comms-express.com/infozone/article/802-11n/
2034	https://support.apple.com/en-us/102587
2035	https://www.ezurio.com/resources/blog/ota-over-the-air-updates-for-iot-devices
2036	https://www.theregister.com/2007/02/06/nokia_update_updated/

I. INTRODUCTION

Petitioners' reply fails to meaningfully rebut any of Patent Owner's arguments presented in its Patent Owner Response and offers no sound argument that its references invalidate U.S. Patent No. 11,445,241 under a proper reading of the claims.

The Patent Owner Response provides evidence demonstrating technical limitations that call into question whether Petitioners' combinations were obvious. Petitioners' reply fails to address any of this evidence. Instead, Petitioners improperly introduce new arguments that fall outside the scope of the Petition. Such approach should be rejected. Indeed, as shown below, Petitioners have failed to show by a preponderance of evidence that the references invalidate U.S. Patent No. 11,445,241.

II. GROUNDS 1, 2, 4 AND 5 FAIL BECAUSE PETITIONERS FAIL TO SHOW THAT N93, BT-SPEC, AND 3GPP-SPEC CONSTITUTE PRIOR ART

Petitioners' reply fails to cure the evidentiary deficiencies identified in the POR and fails to demonstrate that N93, BT-Spec, and 3GPP-Spec qualify as printed publications under prevailing Federal Circuit and PTAB precedent. The record lacks sufficient evidence that the documents were accessible to a POSITA as of the critical date.

Petitioners attempt to rehabilitate its deficient petition based on Dr. Creusere's new declaration and the deposition testimony of Mr. McNair. Petitioners claim that they were able to access the referenced materials through a sequence of clicks on archived web page. Reply, 2-5. Petitioners overlook that this navigation was conducted in 2025 using the Internet Archive, not in real-time from the actual live websites as they existed in 2007. Reply, 2-5. The reconstruction of a path using modern archival tools does not equate to public accessibility 15+ years ago. *See Samsung Elecs. v. Infobridge*, 929 F.3d 1363, 1370–72 (Fed. Cir. 2019).

Petitioners bear the burden to clearly and consistently present its evidence in the Petition. By attempting to supplement the record, Petitioners in effect are conceding that the Petition did not present sufficient evidence to demonstrate that N93, BT-Spec, and 3GPP-Spec qualify as printed publications. The Board should disregard these new materials Petitioners present in their reply because they are improper and untimely. At bottom, even if the new materials are considered, public accessibility is evaluated based on whether a POSITA could have located the document using tools available and customary at the time, not via hindsight navigation. *See Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380 (Fed. Cir. 2018).

Also, Petitioners fail to rebut Mr. McNair's testimony and in fact, reinforce his testimony that 3GPP-Spec was not indexed in a meaningful way that would permit a person of ordinary skill in the art to locate it. POR, 8-9. Petitioners speculate

on two paths that could be taken to navigate to 3GPP-Spec, but both these paths require a person to ***already*** know of 3GPP-Spec in order to locate it. Reply, 3-5; see EX1032 at 10.

For example, Petitioners state to use the “specifications file server area” to locate the 3GPP-Spec. Reply, 4. The 3GPP site states that the “specifications file server area” are “***for those who know where they are going,***” confirming Mr. McNair’s point that “Without knowing of the document already, POSITA would not be able locate the 3GPP-Spec on the 3GPP FTP server.” POR, 8-9; EX1032 at 10.

Petitioners also rely on an alternate path that is subject to the same issues. The 3GPP site also provides that “To find a ***particular*** spec quickly, go here and click on the links in the specs-series or use the links in the ‘further information’ section.” EX1032 at 10. These statements on the 3GPP site reflect that someone would need ***preexisting*** knowledge to locate the specific 3GPP-Spec and Petitioners present no evidence that a person in 2007 with a bachelor’s degree in electrical engineering and one year of experience in the field of wireless communications would know over 15 years ago to navigate to this specific 3GPP-Spec. Thus, Petitioners have not shown this evidence was publicly accessible.

III. GROUND 1: PETITIONERS FAIL TO ESTABLISH THAT THE CLAIMS ARE RENDERED OBVIOUS BY THE COMBINATION OF N93, DUA, AND HERLE

A. Limitation [1a]

Petitioners improperly try to shift the burden onto PO because Petitioners failed to provide any evidence of inherency or properly establish a finding of obviousness in the Petition. Reply, 5-6. PO provided an example, based on Petitioners' own exhibits, that there are various modulation schemes and frequencies that can be associated with Bluetooth (or other wireless communication technologies), and thus such modulation schemes and frequencies are not inherent. POR, 10-11. Inherency requires necessity. Petitioners provides no evidence of such necessity. POR, 10-11.

Petitioners also reiterate Dua's statement that "The short-range transceiver 108 and antenna system 117 are specifically designed to support the widest array of communication protocols and broadcast standards in order to allow the media player 100 to establish communication with a multiplicity of devices now available or which later become available" to state that any combination of communication protocols on a device is rendered obvious by Dua. But such an aspirational statement fails to disclose the specific combinations of technologies onto one device as alleged by Petitioners. See POR, 10-11. Petitioners also fail to address how its own hypothetical device—that is a combination of N93, Dua, and Herle—would be

“specifically designed to support the widest array of communication protocols and broadcast standards.” Reply, 5.

PO has provided evidence of the state of the art on or around November 28, 2007, that indicates that creating a device with multiple wireless communication technologies alleged by Petitioners presented various challenges including passing stringent FCC testing requirements and voiding warranty of the N93 device being modified. POR, 10-11; EX2017 ¶¶ 184-87. This evidence is unrebutted.

B. Limitation [1b]

Petitioners refer to claims 12 and 15 in relation to the QAM and OFDM modulation schemes. Reply, 6. PO similarly discusses the QAM and OFDM modulation schemes in relation to claims 12 and 15.

C. Limitation [1c]

Petitioners erroneously assert that PO waived a “separate” construction. Reply, 6. PO never waived construction and it is clear Petitioners recognize a dispute on construction. Regardless, under either construction, Petitioners arguments fail because Petitioners failed to identify any alleged UMTS and GSM radio communication circuits. For Mapping A, the Petition conflated “UMTS” and “GSM” capability with alleged “UMTS” and “GSM” radio communication circuits, while failing to cite to any component or structure that would meet the claim limitation. POR, 13-15; see Pet., 23; Reply, 6. Pointing to a network protocol alone

does not necessitate presence of multiple radio communication circuits. *See* POR, 13-15; EX2017 ¶¶ 168-77, 195.

Petitioners' Reply confirms that Petitioners failed to provide evidence of appropriate "radio communication circuits." Reply, 6-7. Recognizing the deficiency in its Petition, Petitioners speculate in the Reply that there is probably some different circuitry involved but fail to identify any alleged radio communication circuits or define the metes and bounds of which components would satisfy the claim language of radio communication circuit. Reply, 6-7. Such speculative assertions do not carry Petitioners' burden.

Petitioners cite to Kao in an attempt to fill the gaps, but Kao is not part of Ground 1. Reply, 6. Petitioners point to "different RF modules" and baseband processing modules" for Kao,¹ but fail to establish what components in Kao would constitute an alleged GSM or UMTS radio communication circuit. Petitioners provide no combination rationale for how Kao would be illustrative of a system like

1. This improper integration of Kao in this Ground also causes issues when viewing the claim as a whole, because Kao teaches multiple baseband processing modules, which further calls into question which component "controls assignment" (*e.g.*, limitations [1.g] and [1.j]) and how this would fit into Petitioners' mapping that the CPU in Dua would control all connections.

N93 or Dua, particularly because Dua shows its own block diagram which does not include alleged GSM and UMTS radio communication circuits for cellular connections. EX1008 Fig. 1.

Petitioners' selective quoting of PO's exhibits omits relevant context: ***"Contemporary 3G handsets contain a radio chipset that supports both 3G and 2G."*** EX2006 at 99. This further calls into question how any alleged portion of Kao would be illustrative of the implementation details of N93 and Dua. This is because sources describe that a single radio chipset will support both 3G and 2G features.

Petitioners never identified the alleged GSM and UMTS radio communication circuits in its cited references for this ground and instead relied on the capability to connect to "UMTS" and "GSM" networks. POR, 13-15. As stated in the POR, a POSITA would not understand UMTS and GSM capabilities to necessarily require separate radio communication circuits. *Id.* Petitioners fail to rebut PO's evidence of the operation of cellular components to choose between networks and change modulation schemes and how these are consistent with the specification. *See* Reply, 6-7; POR, 13-14. Petitioners fail to rebut the evidence that its own references, such as N93, confirm this characterization. POR, 14; EX1010 at 113. Petitioners provide no evidence that the references disclose that the "CPU assigns the SIP connection to the UMTS radio" or explanation of how this meets the claim language. Reply, 10.

While Petitioners accuse PO of basing its arguments on a “theoretical product that implements GSM and UMTS as a combined circuit,” this is a red herring. Reply, 6. Petitioners specifically relied on Dua in relation to this limitation, which does not disclose GSM or UMTS radio communication circuits (or other hardware details) and instead only shows a single component—a network transceiver—for interacting with networks. EX1008 at Fig. 1. Petitioners previously conceded N93 lacks implementation details such as hardware details and relied on Dua to fill these gaps. *See* Pet., 11 (“Dua additionally teaches (a) internal hardware implementation details for a cellular phone like N93.”). They should be held to this concession and cannot now change the ground presented in the Petition.

For Mapping B, Petitioners’ Reply fails to rebut that it would not be obvious to include both 2.4 GHz and 5 GHz frequency band support for Wi-Fi on a mobile device or even whether such frequency band support would function properly in N93 or Dua’s architecture and obtain appropriate regulatory approvals. Reply, 7.

D. Limitation [1g]

Petitioners mischaracterize that “PO makes essentially the same argument it previously made.” Reply, 7. For example, PO provides additional expert testimony, evidence of separate components that operate to control assignment, and evidence that user indications do not cause assignment. POR, 16-23.

Petitioners fail to rebut evidence that shows specific detail of how mobile devices that could connect to multiple cellular networks including a baseband processor and CPU that split processing/control. POR, 20-21. Petitioners' arguments are circular. Petitioners use the ***absence*** of lower-level implementation details to state that certain features would be obvious. Reply, 7-10. Petitioners fail to rebut more detailed descriptions of how a POSITA would understand a cellular device to operate prior to November 28, 2007. *See* POR, 16-22. Petitioners have previously conceded that Dua lacks such detail and turned to other sources (*e.g.*, Rooyen, Desai) to selectively fill gaps in Dua, Pet., 51, but now attempts to take advantage of Dua's lack of specific disclosure to overstate the capabilities of Dua's CPU. *See* Reply, 6-7.

Petitioners fail to meaningfully rebut the POR and make conclusory statements that misrepresent Dua's disclosures while describing what controls cellular operations. Reply, 8-9. Dua fails to provide any specific detail on cellular connections, such as how a CPU would operate to control alleged GSM and UMTS radios. POR, 16-22. As stated previously, Dua fails to disclose the operation of its CPU in relation to connecting to both "GSM" and "UMTS" networks, and only generally discusses a network transceiver. EX1008 at Fig. 1.

Petitioners' Reply also highlights that it has failed to establish the causal aspect that is foundational to its theory: that a CPU processes user indications to

assign radios. Petitioners rely on a series of user indications and in the Petition, alleged assignment does not occur until the final selection of a step to send an e-mail, MMS, or receive a video call.² Pet., 30-31. Also, Petitioners' expert stated that he believes assignment occurs when the processor "***make[s] a decision to assign the radio.***" EX2030 at 28:22-24. Petitioners must show that the processor makes a decision to assign the radio in response to this series of user indications but fail to do so.

Based on Petitioners' own articulated theory, Petitioners failed to establish that a CPU would process the identified user indications to assign alleged GSM or UMTS radios. While Petitioners state that "No radio can bypass the CPU and 'assign itself' as there is no way for an individual radio to even know they had been indicated," Petitioners fail to establish that an architecture such as what is present in Dua would work with the user indications of N93, and further fails to even establish that the user indications of N93 cause assignment of an alleged radio communication circuit. POR, 16-22. Once again, without having any details of the implementation of radio communication circuits and controller, Petitioners relay on the absence of

2. Petitioners do not allege that assignment occurs at the time a preference between GSM or UMTS is selected, but instead state that this is just one preliminary step that must be performed before finally selecting a specific application.

evidence to speculate about what could be possible. Further, N93 calls into question Petitioners' mapping, because N93 states that a connection to a UMTS network ***must*** be present for the user indications to be available, not the other way around (*i.e.*, that Petitioners' identified user indications cause connection to a cellular network to be assigned). EX1010 at 61.

Petitioners' conclusory statements that "N93's user indications related to the cellular radio (e.g., preference for UMTS/GSM) is an extremely simple user setting that the CPU disclosed in Dua could easily implement to control assignment." Reply, 9. As stated above, Petitioners fail to rebut that Petitioners did not meet their burden to show that Dua's "implementation details" could be used in combination with a device such as N93 and overstate Dua's teachings in this regard. POR, 21-22.

E. Limitation [1i]

Petitioners fail to establish causality between its user indications and alleged assignment of radio. Petitioners also fail to meaningfully rebut that another component could be controlling assignment of alleged GSM and UMTS radio communication circuits by using the lack of detail in Dua. Reply, 9-11.

Petitioners' expert stated that he believes assignment occurs when the processor "***make[s] a decision to assign the radio.***" EX2030 at 28:22-24. But N93 states that "To receive share invitations, you must be registered to the service, have an active UMTS connection, and be within the UMTS network coverage." EX1010

at 61. If an alleged UMTS radio is **already** assigned, Petitioners fail to provide how assigning a “SIP” connection meets the language of the claim, because there is no assignment of the alleged UMTS **radio** in response to the user indication, which is how Petitioners’ expert analyzed assignment.

Petitioners’ theory for controlling assignment is that user indications are processed by the CPU, and the CPU will process the user indications to assign specific radios accordingly. Reply, 9-10. But Petitioners’ identified user indications do **not** cause assignment of the alleged UMTS radio in the N93. POR, 24-25. For example, the alleged UMTS radio must already be assigned in relation to the “Live” function. EX1010 at 61. Petitioners fail to rebut this testimony and in fact **concede** that a connection to the UMTS radio is assigned. Reply, 10.

The Patent Office has rejected similar arguments during reexamination in stating that user indications in Tee did not cause assignment because the user indications occur after a connection is already assigned. EX2006 ¶ 137 (“Importantly, Tee’s user input relates to whether or not to relay a streaming video signal; and that input occurs after control processor 210 has already assigned a connection to the communication circuits.”). Petitioners do not otherwise establish assignment of connection.

Petitioners also criticize “PO’s attempt to incorporate twelve paragraphs of its expert declaration is improper” and proceeds to also cite twelve paragraphs of its

own expert declaration. Reply, 10 (citing paragraphs 16-26, 33 of its expert declaration).

F. Limitation [1j]

Petitioners fail to rebut whether there would be a reasonable expectation of success in relation to this limitation or motivation to combine.

Petitioners criticize that PO's simultaneous arguments are not commensurate with the scope of the claims. Reply, 11. However, PO's arguments were merely in response to Petitioners' arguments, which relied on "simultaneous" functionality to state this limitation was rendered obvious by the cited references. *See, e.g.*, Pet., 35-38 (repeatedly discussing "simultaneous operation" in relation to this claim limitation).

Petitioners state that there is no "legitimate dispute that N93 teaches the functionality of serving as a modem." Reply, 11. However, Petitioners fail to rebut that N93 does not disclose the transmission of **video** over an alleged Bluetooth radio while connecting to the Internet over an alleged UMTS radio, whether through its modem description or any other description. Reply, 12. PO called into question the use of a modem to disclose this limitation, because there is silence on video transmission via a modem let alone transmissions of video via one modem while connecting to the internet via another modem given the limitations with streaming video during the relevant time period. *See, e.g.*, POR, 23-25.

Petitioners argue that incorporation of Bluetooth streaming is obvious in light of Dua's vague and speculative statements regarding a radio "designed to support the widest array of communication protocols." As stated previously, POR disputes whether such statement can be read to incorporate any combination of technology in the way alleged by Petitioners, particularly considering the state of the art at the time of the invention. Section I.A. Petitioners also fail to address that such support for Bluetooth streaming, particularly in combination with other features, was beyond the skill of a POSITA based on the definition provided by both PO and Petitioners. POR, 30-33; Reply, 12-14.

For example, Petitioners cite several references to state that Bluetooth streaming would be possible, but fail to address how implementation of the technology in these research articles would be within the level of skill of a POSITA. Reply, 13. Petitioners also fail to provide how these articles show streaming over Bluetooth while connecting to the Internet using a UMTS network. Reply, 13. The research paper relied on by Mr. McNair, published in 2014, includes a literature review of previous papers and confirms the lack of suitability of Bluetooth to stream video and details the various shortcomings of streaming video over Bluetooth, not just "improv[ing] the quality of streaming." Reply, 13; see EX2010 at 6 ("Bluetooth wireless technology is a hot research topic (Amrit and Singh, 2003; Chong and Beg, 2003). Unfortunately, it is not suitable for traditional

media encoding and real time transition (Kassem et al., 2009) due to limited bandwidth (Smith, 2012; Tariq et al., 2000), [and a] high degree of error rates (Peterson et al., 2003).”); *id.* at 16 (“Media streaming over Bluetooth connection is a huge challenge.”).

Petitioners also fail to rebut that it would be obvious to combine this feature, particularly in light of more suitable technologies. Reply, 11-1. For example, Petitioners fail to rebut that there would be no motivation to combine or that it would be nonobvious to combine any Bluetooth streaming aspects, because a POSITA would not incorporate Bluetooth streaming in light of other wireless protocols that were better suited. POR, 32; Reply, 11-14.

Petitioners reject evidence of the state of the art reflecting technical limitations and instead rely on Dua’s lack of detail to assume ” “all permutations are supported.” Reply, 14. Petitioners fail to acknowledge that a POSITA would read Dua in light of available technology, instead of the other way around. *Id.* Petitioners rely on other references, but even these cited references provide detail that show that certain connections would **not** be possible. EX1006 at 444 (“If it is impossible to create another connection (even with adjusting the parameters of existing connection or connections) **without blocking** the usage of another radio connection, the process moves to 414, where one radio connection is either put on a standby state or even **terminated**. The radio connection put on a standby state or terminated may be an

existing connection, but also the creation procedure of the new radio connection may be cancelled”).

Petitioners’ rejection of PO’s arguments based on “the fact that the specification simply states four-adjacent radios can operate simultaneously,” Reply, 14, ignores the fact that the express purpose of the Challenged Patent *is* to enable communications with video transfer via one radio communication circuit while connecting to the Internet via another radio communication circuit, and thus discloses numerous details on how to enable such functionality. *See, e.g.*, EX1001 at 1:48-2:52; 7:49-8:63; Figs. 1-4. Further, Petitioners’ mapping is based specifically on some combination of alleged Bluetooth, Wi-Fi, GSM, UMTS, and NFC radio communication circuits and therefore Petitioners bear the burden to show that these alleged radio communication circuits would meet the language of the claim.

At bottom, Petitioners speculate with conclusory assertions without providing any evidence of the specific communications required to meet the claim language.

G. Limitation [1k]

Petitioners fail to rebut PO’s evidence that there would be lack of motivation and reasonable expectation of success, and instead overstate the problem-solving ability of Herle in relation to specialized devices such as N93. *See* Reply, 14-17.

PO’s assertions on when products launched OTA updates go to state of the art during the relevant time period and whether there was a reasonable expectation of

success or motivation to combine in light of the various tradeoffs. The fact that there was difficulty in implementing over-the-air updates reflects that technical issues, disadvantages, and the like made incorporating Herle's over-the-air updates with specialized devices based on Petitioners' mapping of N93 and Dua was non-obvious. POR, 35-41. This evidence is un rebutted by Petitioners.

Petitioners fail to provide a showing, based on the Petition's references, that it would be obvious to incorporate Herle's over-the-air updates for specialized devices such as the N93 device or Dua-based device.

Petitioners fail to rebut that N93 repeatedly teaches against modification and includes warnings that any modifications would void warranty. *See, e.g.*, EX1010 at 7, 9, 125; EX2017 ¶ 112. Petitioners wrongly characterize PO's arguments regarding "bodily incorporation" when PO's arguments address whether there was adequate motivation to combine or a reasonable expectation of success in light of the state of the art at the time. POR, 35-41.

H. Claim 4

See Claim 1.

I. Claim 5

Petitioners' mapping is based on the specific inclusion of some combination of Bluetooth, GSM, UMTS, Wi-Fi, and NFC technologies, in combination with the other claimed features to create a hodge podge device based on teachings of multiple

different devices disclosed across different references, that historical evidence shows was not obvious prior to November 28, 2007. POR, 42-43. Petitioners fail to produce any evidence rebutting this testimony and rely on Dua's speculative disclosure to assert that every permutation of wireless communication technologies were possible, despite evidence that incorporating all such wireless communication technologies onto one device was beyond reasonable skill during the relevant time period. *See* POR, 42-43. Petitioners' conclusory statement that the Challenged Patent does not disclose any practical implementation details for dealing with radios ignores the various details of how radios are implemented in relation to a controller via diagrams and descriptions, what types of actions are performed by each radio, and/or the like that pervade the Challenged Patent. *See, e.g.*, EX1001 at Figs. 4-6, 13:40-14:12; *see generally id.* Figs. 1-4 and accompanying descriptions.

J. Claims 6, 8-9

See Claim 1.

K. Claim 11

See Claim 1.

L. Claim 12

With respect to the implementation of QAM modulation in a hypothetical N93+Dua+Herle device, Mr. McNair has explicitly questioned the capability to make certain modifications ***in combination*** based on the state of the art prior to

November 28, 2007. EX2017 ¶¶ 89-104. Petitioners' arguments regarding capability to incorporate a single modulation scheme fail to address any of PO's arguments regarding motivation to combine and incorporating the modulation scheme in combination with other features. Reply, 20. "Even if a person of skill would have this knowledge, it does not necessarily follow that such an artisan would have any motivation to combine the prior art in this manner." *Provisur Techs., Inc. v. Weber, Inc.*, No. 2021-1851, 2022 WL 17688071, at *5 (Fed. Cir. 2022) (nonprecedential).

Petitioners also misrepresent Mr. McNair's testimony. Reply, 21. Mr. McNair's testimony reflected that he did not specifically opine on whether UMTS is "an enhancement to UMTS." EX1057 at 41:14-18. Mr. McNair has clearly established in his declaration that HSDPA is different than UMTS networks. EX2017 ¶ 191.

Petitioners' arguments that "3GPP" encompasses EUTRAN and other supposed networks is irrelevant because Petitioners specifically accused UMTS as the radio communication circuit, not 3GPP. Petitioners fail to establish any sort of equivalency with 3GPP and UMTS in the Petition or in their Reply. 3GPP itself describes association with GSM (a network Petitioners distinguish from UMTS), and also distinguishes between UTRAN, UMTS, and FOMA networks. EX1032 at 10. The metes and bounds of how Petitioners allege radio communication circuits lacks clarity and therefore conflicts with its own references.

Also, Dua describes **compliance** with existing 3GPP standards. EX1008 ¶ [0069]. There are ways to be compliant without incorporating all features of standards. Petitioners ask the Board, based on a single statement in Dua, to incorporate by reference every standards document associated with 3GPP. Such an inference and incorporation by reference is improper. *See Paice LLC v. Ford Motor Co.*, 881 F.3d 894, 906–07 (Fed. Cir. 2018).

Petitioners state that Dr. Creusere’s testimony reflected that “UMTS” referred to all 3G capabilities, but Dr. Creusere clarified that this was only “approximately correct.” EX2030 at 13:10-16.

M. Claim 13

See Claim 1.

N. Claim 14

See Claim 1.

O. Claim 15

Petitioners fail to rebut that OFDM is not a modulation scheme associated with UMTS. Reply, 22-24. Petitioners accused UMTS as the second radio communication circuit in its Petition and now seek to modify this UMTS radio communication circuit by requiring it to implement OFDM. *See, e.g.*, Pet., 8, 9, 20-22.

Petitioners state that “Dua’s teaching to use all 3GPP standards taught or rendered obvious OFDM,” but this rationale ignores that Petitioners explicitly mapped UMTS to the second radio communication circuit and did not map all cellular technologies associated with 3GPP to the second radio.³ *See* Pet., 9-10. Petitioners even carve out specific parts of the 3GPP standard and allocate them to a different alleged radio communication circuit (*e.g.*, GSM), but now allege that 3GPP and UMTS are equivalent without establishing any such equivalency. *See id.* Further, even if Dua could be read to incorporate by reference all 3GPP standards, 3GPP-Spec would not be incorporated because 3GPP-Spec was a working document that was **not** part of the standard and explicitly teaches against implementation. POR, 56-57; EX1015 at 1. Further, it was not associated with UMTS. Petitioners’ arguments regarding whether OFDM is associated with 3GPP, a standards organization, therefore fails to rebut points the POR. *See* Reply, 22-24.

Petitioners also make various statements regarding EUTRAN and whether 3GPP included EUTRAN. Reply, 23. Whether 3GPP included EUTRAN fails to address the point that Petitioners’ asserted mapping is based on **UMTS**, not **3GPP** and not EUTRAN and UMTS does not implement OFDM. Pet., 8-9. Further,

3. Petitioners did not even allege OFDM in its mappings in relation to UMTS. Pet., 10.

EUTRAN is not UMTS, EUTRAN is LTE. POR, 54-57. Petitioners argue that “the 3GPP website itself listed 3GPP-Spec under Evolved UTRAN.” This further supports POR’s position that 3GPP-Spec was not part of UMTS, as the 3GPP organization *distinguishes* between UTRAN and UMTS. EX1032 at 10 (distinguishing UMTS and UTRAN networks).

Petitioners fail to rebut that OFDM modulation schemes were *never* used to connect to UMTS networks. Reply, 22-24. UMTS uses a completely different infrastructure and uses code division multiple access. POR, 49-52. A POSITA would therefore not be motivated to add OFDM modulation schemes to a UMTS system, because this would be inoperable as it is not an established part of the standard. Petitioners fail to rebut that there was no infrastructure present for LTE prior to November 28, 2007, nor was there any agreement to incorporate OFDM as part of UMTS, so there would be no motivation to incorporate OFDM modulation schemes. POR, 49-52. Petitioners articulated no reason, nor do they even assert, that such a combined system would function properly or would have been obvious to a POSITA. Reply, 22-24.

Instead, Petitioners’ alleged motivation to combine is based on a misunderstanding that OFDM was a modulation scheme associated with UMTS. Reply, 23; Pet., 22. Petitioners never set forth a motivation to incorporate different modulation schemes in relation to UMTS capability, particularly when there was no

base station deployed that was capable of demodulating such transmission. *See* Pet., 23.

Petitioners’ arguments regarding capability to incorporate a single modulation scheme fail to provide adequate motivation to combine, considering that OFDM was not part of the UMTS standard. *See* POR, 48-52; *see also* Reply, 22-24. “Even if a person of skill would have this knowledge, it does not necessarily follow that such an artisan would have any motivation to combine the prior art in this manner.” *Provisur Techs., Inc. v. Weber, Inc.*, No. 2021-1851, 2022 WL 17688071, at *5 (Fed. Cir. 2022) (nonprecedential). Incorporating OFDM modulation into an alleged UMTS radio would serve no purpose, given that OFDM was not part of UMTS. POR, 54-57.

P. Claims 16-27

See claim 1.

IV. GROUND 2: PETITIONERS FAIL TO ESTABLISH THAT THE CLAIMS ARE RENDERED OBVIOUS BY THE COMBINATION OF N93, DUA, HERLE, VAN ROOYEN, DESAI, BT-SPEC, 3GPP-SPEC, AND KAO

A. Combination Rationale

Petitioners fail to rebut whether there would be a reasonable expectation of success in achieving the combination based on a combination of N93, Dua, Herle, Rooyen, Desai, BT-Spec, 3GPP-Spec, and Kao asserted in Ground 2. Reply, 25-27; *see* POR, 54-57. Petitioners never account for the differences in the teachings of

eight different references and how such a hypothetical device would have a reasonable expectation of success or meet regulatory requirements after parts have been combined from all these different systems.

Petitioners make conclusory assumptions that the “Neither of the separate GSM and UMTS baseband signal processors in Kao are running a UI, OS, or media application.” Reply, 25. Petitioners again use the absence of more detailed disclosures in its references to rebut more detailed disclosures showing the use of a baseband processor that controls cellular functions. POR, 20-21; EX2017 ¶¶ 221-22. Such a reliance on lack of evidence to support a finding does not satisfy Petitioners’ burden and fails to rebut PO’s evidence. *See* POR, 54-57.

For example, Petitioners state that “Only Dua’s CPU can perform those functions and control which of the separate GSM or UMTS baseband processing units will be used based on the user’s indication.” Reply, 25. As stated previously, Petitioners rely on the lack of detail in Dua to state that Dua would teach using the CPU to control assignment of radio communication circuits, when Dua simply does not disclose any alleged GSM or UMTS radio communication circuits. *See* Sections I.D, I.E.

B. Claims 1, 4-6, 8-27

Petitioners state that Rooyen's "Separate GSM and UMTS radio in the combination removes any doubt that the CPU would respond to the user indications to control assignment of the correct, separate radio circuit." Reply, 26.

Petitioners again make conclusory assumptions that a CPU would control alleged GSM and UMTS radio communication circuits when Rooyen shows multiple baseband processors and fails to describe how a controller or baseband processor would perform in response to a user indication. *See* POR, 54-57; Sections I.D, I.E.

V. GROUND 3: PETITIONERS FAIL TO ESTABLISH THAT THE CLAIMS ARE RENDERED OBVIOUS BY THE COMBINATION OF DUA AND HERLE

C. Combination Rationale

Petitioners' arguments are incorrect for the reasons provided above in relation to Ground 1. PO's combination arguments were not based solely on N93 but also account for specialized devices such as Petitioners' combination based on Dua. *See* POR, 36-37, 39-40, 59. For example, Dua is silent regarding updating the operating system and states that over-the-air technique are insecure, and the state of the art at that time show updates to operating systems of specialized devices was non-obvious. *See id.*

D. Claims 1, 4-6, 8-27

Petitioners' arguments are incorrect for the reasons provided above in relation to Ground 1.

VI. GROUND 4: PETITIONERS FAIL TO ESTABLISH THAT THE CLAIMS ARE RENDERED OBVIOUS BY THE COMBINATION OF DUA, HERLE, AND N93

E. Combination Rationale

For the same reasons asserted above in relation to Grounds 1 and 3, which combines the same references, a POSITA would not combine Dua, N93, and Herle.

F. Claims 1, 4-6, 8-27

Petitioners' arguments are incorrect for the reasons provided above in relation to Ground 1.

VII. GROUND 5: PETITIONERS FAIL TO ESTABLISH THAT THE CLAIMS ARE RENDERED OBVIOUS BY THE COMBINATION OF DUA, HERLE, N93, VAN ROOYEN, DESAI, BT-SPEC, 3GPP-SPEC, AND KAO

G. Combination Rationale

Petitioners' arguments with respect to the combination of Dua, Herle, N93, Rooyen, Desai, BT-Spec, 3GPP-Spec, and Kao are insufficient as explained above with respect to Grounds 1, 2, and 3.

H. Claims 1, 4-6, 8-27

See incorporated claims.

VIII. CONCLUSION

The Board should confirm the patentability of Claims 1, 4-6, 8-27.

Dated: August 13, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of August, 2025, a copy of the attached
PATENT OWNER SUR-REPLY, together with all exhibits was served by electronic
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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant 37 CFR 42.24(d), the undersigned certifies that this Sur-Reply complies with the type-volume limitation of 37 CFR §42.24(a). The word count application of the word processing program used to prepare this Sur-Reply indicates that the Sur-Reply contains 5,557 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

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