

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

VASU HOLDINGS, LLC,
Patent Owner.

Case IPR2025-00449
U.S. Patent No. 10,368,281

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	OVERVIEW OF THE '281 PATENT	2
A.	The '281 Patent (Ex. 1001)	2
B.	Prosecution History of the '281 Patent	3
C.	Prosecution History of the '181 Patent	5
D.	Overview of the Challenged Claims	8
E.	Priority Date of the '281 Patent Claims	11
III.	LEVEL OF ORDINARY SKILL IN THE ART	12
IV.	CLAIM CONSTRUCTION	12
V.	OVERVIEW OF THE ASSERTED REFERENCES	14
A.	Enzmann (Ex. 1010).....	14
B.	Dorenbosch (Ex. 1005)	14
C.	Chaskar (Ex. 1004).....	14
D.	Willhoff (Ex. 1006)	15
E.	Iizuka (Ex. 1011).....	16
F.	Donovan (Ex. 1007)	17
VI.	PETITIONERS FAIL TO DEMONSTRATE A REASONABLE LIKELIHOOD OF SUCCESS ON ANY CHALLENGED CLAIM.....	17
A.	Chaskar and Willhoff Fail to Render Obvious the Activation of a Timer Limitations (All Grounds)	17

B.	Iizuka Fails to Teach Limitation [45.b]: Establishing a Second Communication Link Between the Interface Server and an End Destination Device Without Disrupting the First Communication Link (Ground 2 and 4, Claim 45).....	23
1.	Rerouting a First Connection is Not the Same as Establishing a Second Connection.....	24
2.	Disclosure of a VoIP Call That “Still Continues” Does Not Satisfy Establishing a Second Communication Link Without Disrupting a First Communication Link.....	28
VII.	CONCLUSION.....	32

PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	U.S. Patent Application Publication No. 2005/0239498 ("Dorenbosch-498")
2002	Declaration of James Hannah in Support of Patent Owner's Request for Discretionary Denial
2003	Excerpt from U.S. District Court – National Judicial Caseload Profile Federal for the Eastern District of Texas, available at https://www.uscourts.gov/sites/default/files/2024-12/fcms_na_distprofile0930.2024.pdf
2004	Spreadsheet regarding Magistrate Judge Payne's average time to issue a <i>Markman</i> Order after a <i>Markman</i> hearing, from July 1, 2023, to present, exported from Docket Navigator, https://brochure.docketnavigator.com/
2005	Intentionally Omitted
2006	Intentionally Omitted
2007	Intentionally Omitted
2008	Order, <i>California Institute of Technology v. Samsung Electronics Co., Samsung Electronics America, Inc.</i> , Case No. 2:21-cv-00446-JRG, Dkt. No. 108 (E.D. Tex. Jan. 20, 2023)
2009	Order, <i>Resonant Systems, Inc., d/b/a RevelHMI v. Sony Group Corporation and Sony Interactive Entertainment Inc.</i> , Case No. 2:22-cv-00424-JRG, Dkt. No. 84 (E.D. Tex. July 9, 2024)
2010	Order, <i>MyPort, Inc. v. Samsung Electronics Co., Samsung Electronics America, Inc.</i> , Case No. 2:22-cv-00114-JRG, Dkt. No. 73 (E.D. Tex. June 13, 2023)
2011	Order, <i>General Access Solutions, Ltd. v. Cellco Partnership d/b/a Verizon Wireless</i> , Case No. 2:22-cv-00394-JRG, Dkt. No. 225 (E.D. Tex. May 22, 2024)

Patent Owner's Preliminary Response
IPR2025-00449 (U.S. Patent No. 10,368,281)

Exhibit	Description
2012	U.S. Patent Application Publication No. 2004/0030791 ("Dorenbosch-791")
2013	U.S. Patent Application Publication No. 2005/0059400 ("Jagadeesan")
2014	U.S. Patent Application Publication No. 2004/0153676 ("Krantz")
2015	U.S. Patent No. 7,398,088 ("Belkin")
2016	U.S. Patent No. 8,041,360 ("Ibe")
2017	Excerpts of File History for U.S Patent 8,886,181
2018	Intentionally Omitted
2019	Intentionally Omitted
2020	Intentionally Omitted
2021	Intentionally Omitted
2022	U.S. Patent No. 8,886,181
2023	Claim Construction Order, <i>Vasu Holdings, LLC v. Samsung Elecs. Co.</i> , Case No. 24-cv-00034-JRG-RSP, Dkt. No. 78 (E.D. Tex. May 19, 2025)

I. INTRODUCTION

Patent Owner, Vasu Holdings, LLC (“Vasu”), respectfully requests that the Board deny the Petition challenging claims 23 and 45 (“the Challenged Claims”) of U.S. Patent No. 10,368,281 (Ex. 1001, “the ’281 Patent”).

All Grounds (1-4) asserted in the Petition rely on a combination of Chaskar (Ex. 1004) and Willhoff (Ex. 1006) for rendering obvious “wherein upon activation of a timer, the switching system causes the second communication module to change state from a sleep mode to an active mode, wherein the timer is activated to establish a time window of a predefined size.” The Petition should be denied because Chaskar and Willhoff do not disclose activating a timer and because the signal strength averaging windows of Chaskar and Willhoff are not time windows for changing a communication module state from sleep mode to an active mode or for comparing a signal level to a threshold value.

The Petition should also be denied because the Petitioners have failed to demonstrate that Iizuka (Ex. 1011) discloses “establishing a second communication link between the interface server and the end destination device without disrupting the first communication link.” Like the prior art distinguished during examination of a related patent in the ’281 Patent family, Iizuka discloses switching between communication mediums by **rerouting** the existing connection, which disrupts the first communication link.

Thus, the Petition should be denied for failure to establish a reasonable likelihood of success as to any Challenged Claims of the '281 Patent.

II. OVERVIEW OF THE '281 PATENT

A. The '281 Patent (Ex. 1001)

The '281 Patent is directed towards a mobile communication device configured to automatically switch a communication that is already in progress using a cellular network to a wireless Voice over IP (VoIP) network, or vice versa. '281 Patent at 2:36-41. This invention addressed the cumbersome problem of having to “manually change the device’s setting by, e.g., pressing one [or] more keys” or the reliability issue stemming from “switching of the call from cellular to VoIP or vice versa [that] may result in the loss of the call.” *Id.* at 2:15-32.

The '281 Patent discloses a mobile communication device having a timer. If the mobile device is conducting a call with its cellular communication module and its Wi-Fi antenna system detects a Wi-Fi signal having a predefined threshold level (strength), that timer is activated to establish a first time window having a predetermined length. *Id.* at 2:54-67. If the Wi-Fi signal level detected during this window at least meets the predefined threshold at the expiration of the timer, the mobile communication device’s switching system causes the in-progress communication to be switched from its cellular module to its Wi-Fi communication module and through a VoIP network without losing the in-progress cellular call. *Id.*

The Wi-Fi communication module is also configured to change state from a sleep mode (during which the Wi-Fi communication module consumes relatively small amounts of power) to a standby mode (during which the Wi-Fi communication module consumes an intermediate amount of power). *Id.* at 3:1-6. Before the in-progress communication is switched to the Wi-Fi communication module, the mobile communication device causes the module to switch to a full active mode, during which the Wi-Fi communication module consumes an amount of power larger than an intermediate amount of power. *Id.* at 3:6-12.

B. Prosecution History of the '281 Patent

The '281 Patent issued from U.S. Patent Application No. 15/480,293, filed on April 5, 2017. Ex. 1002 at 56 (Filing Receipt). The '281 Patent is a continuation application in a chain of continuation applications starting from U.S. Patent Application No. 11/031,498 (“the '498 Application”), filed on January 6, 2005, which claims priority to U.S. Provisional Application No. 60/534,466 filed January 6, 2004. *Id.*

Additionally, the '281 Patent is related to U.S. Patent Application No. 13/240,776, which issued as U.S. Patent No. 8,886,181 (Ex. 2022, “the '181 Patent”) on November 11, 2014. The '181 Patent is a divisional application of U.S. Patent Application No. 11/330,675, filed on January 11, 2006, and is a continuation-in-part of the '498 Application. Ex. 2022 at 1-2.

The '281 Patent was subject to a comprehensive and substantive examination. In a January 16, 2018, Office Action and April 4, 2018, Final Office Action, the Examiner rejected the claims using combinations of U.S. Patent Publication No. 2004/0030791 to Dorenbosch ("Dorenbosch-791," Ex. 2012), U.S. Patent Publication No. 2005/0059400 to Jagadeesan ("Jagadeesan," Ex. 2013), U.S. Patent Publication No. 2005/0239498 to Dorenbosch ("Dorenbosch-498", Ex. 2001), and Chaskar (Ex. 1004). *See* Ex. 1002 at 434-444 (Non-Final Office Action dated 1/16/18); *see also id.* at 493-499 (Final Office Action dated 4/4/2018).

In response, Applicant distinguished the '281 Patent's claims over the Examiner's rejections by various claim amendments and arguments. Ex. 1002 at 567, 570, 573, 575 (amending pending claims 17, 45, 76, 85 [issued claims 1, 23, 37, and 45] to add "wherein upon activation of a timer, the switching system causes the second communication module to change state from a sleep mode to an active mode, wherein the timer is activated to establish a time window of a predefined size").

The Examiner agreed with Vasu's arguments and indicated the claim amendments overcame the combination of references including Dorenbosch-791, Dorenbosch-498, and Chaskar. In a September 12, 2018, Office Action (and in a January 9, 2019, Final Office Action), the Examiner rejected the claims using a new combination of Jagadeesan and U.S. Publication No. 2004/0153676 to Krantz

("Krantz," Ex. 2014). Ex. 1002 at 598-605 (office action dated 9/12/2018); *id.* at 672-676 (final office action dated 1/9/2019). In response, Applicant amended the claims to incorporate allowable subject matter from then-pending claim 21. *Id.* at 634-637 (second response to office action dated 12/12/2018); *id.* at 702-705 (second response to final office action dated 3/8/2019).

The Examiner allowed all pending claims in view of the timer limitations found in each:

Regarding claims 17, 45, 76 and 85, the prior art fails to teach "wherein if a Wi-Fi signal monitor [detects] that a Wi-Fi signal level is below a second predefined threshold value V_{th2} ; the timer is activated to establish a second time window of the second predefined size T_2 , wherein a third predefined threshold value V_{th3} is smaller than V_{th2} .", in linking with other subject matters in the claim.

Id. at 732 (Notice of Allowance dated 3/15/2019). The '281 Patent issued on July 30, 2019. For clarity of reviewing the '281 Patent File History, it is noted that then-pending claims 17, 33, 45, 56, 76, and 85 issued as Challenged Claims 1, 12, 23, 31, 37, and 45, respectively. *Id.* at 767.

C. Prosecution History of the '181 Patent

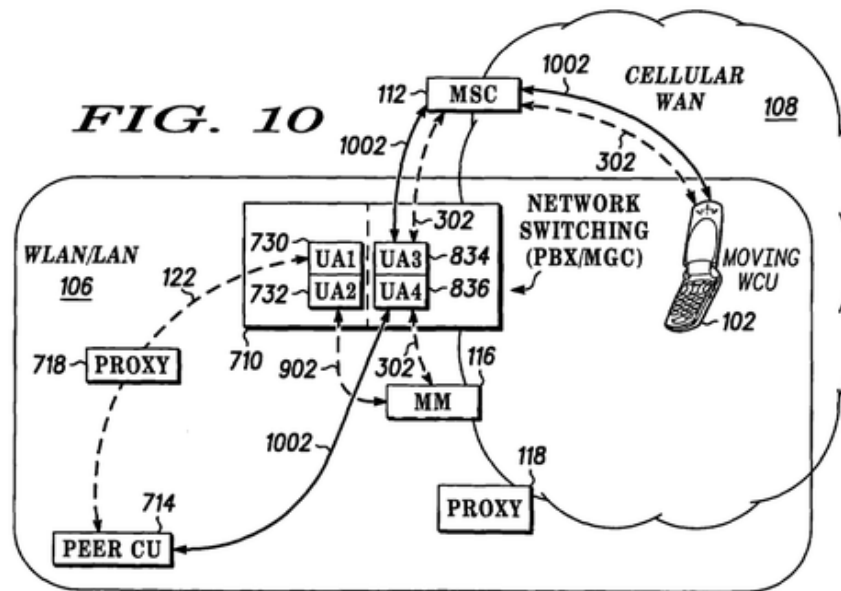
As mentioned *supra*, the '281 Patent is related to U.S. Patent Application No. 13/240,776, which issued as the '181 Patent, and which is a divisional application of U.S. Patent Application No. 11/330,675, filed on January 11, 2006, and is a

continuation-in-part of the '498 Application. The prosecution history of the '181 Patent is relevant to Petitioners' challenge of Claim 45, because Claim 45 is patentable over the Petitioners' asserted references for similar reasons that distinguished the claims over prior art during examination.

At one point in the '181 Patent's examination, the Examiner rejected the then-pending claims 1-9 as allegedly being obvious over U.S. Patent No. 8,041,360 to Ibe ("Ibe," Ex. 2016) in combination with U.S. Patent No. 7,398,088 to Belkin (Ex. 2015, "Belkin"). The Examiner cited Belkin as disclosing notifying an interface server with the mobile communication device and establishing a second communication link between the interface server and the end destination device. Ex. 2017 at 7 (citing Belkin (Ex. 2015) at Figs. 7-10, 13:32-44, 5:67-6:3, 13:45-14:2). Specifically, the Examiner cited Belkin for disclosing a wireless communication unit that initiates a handover call ("notifying an interface server"), which is routed via network switching function 112 to network switching function 110 ("interface server"). *Id.* (citing Belkin (Ex. 2015) at Fig. 7-10, 13:32-44, 5:67-6:3).

The Examiner also cited Belkin's rerouting of the voice bearer RTP stream from the peer CU 714 (the "end destination device") to the network switching function 710 (the interface server) as allegedly meeting this limitation. Ex. 2017 at 7 (citing Ex. 2015 (Belkin) at Figs. 7-10, 13:45-14:2, 15:2-6). The Examiner pointed to the resulting RTP stream "link 1002" (seen in Fig. 10 of Belkin), as the claimed

second communication link between end destination device and interface server. *Id.*; see also *id.* at 64-66 (Examiner clarifying the rejection in Final Office Action dated 6/27/2013).



Ex. 2015 (Belkin) at Fig. 10.

In response to this Office Action, the Applicant argued that Belkin only “teaches [] that the single connection between the peer CU 714 and the network switching function 710 is rerouted to the handover call port, not that a second connection is made between the peer CU 714 and the network switching function 710,” and that “[r]erouting a connection is not the same as establishing a second connection.” Ex. 2017 at 36 (emphasis original). The Examiner considered this argument and issued a Final Office Action, repeating its rejection of the claims in view of Ibe and Belkin. *Id.* at 64-66 (6/27/2013 Final Office Action).

Applicant reiterated its argument that link 1002 between the peer CU 714 and the network switching function 740 is a rerouting of link 120 (alleged first communication link); it is not a separate or second link, as required by the claims. Ex. 2017 at 83. To “emphasize this difference,” Applicant amended the claims to recite “establishing a second communication link between the interface server and the end destination device without disrupting the first communication link.” *Id.* (Response to Final Office Action 8/23/2013); *see also id.* at 77 (emphasis modified).

The Examiner agreed with Applicant's arguments and indicated the claims were non-obvious over Ibe and Belkin “in view of Applicant's amendments and arguments as filed on 8/23/2013.” *Id.* at 94 (Notice of Allowance). There was further prosecution of other claims 14-18 and 38, which Applicant ultimately canceled. A Notice of Allowance was issued on July 10, 2014 and the '181 Patent issued on November 11, 2014. Ex. 2022, Cover.

D. Overview of the Challenged Claims

The Petition presents the following prior art combinations as its respective grounds for invalidating claims of the '281 Patent:

Ground ¹	Claims	Basis	References Relied Upon
1	23	§ 103	Enzmann, Dorenbosch, Chaskar, and Willhoff
2	45	§ 103	Iizuka, Chaskar, and Willhoff
3	23	§ 103	Enzmann, Dorenbosch, Chaskar, Willhoff, and Donovan
4	45	§ 103	Iizuka, Chaskar, Willhoff, and Donovan

Pet. at 7.

Claims 23 and 45 are both independent claims. Claim 23 recites a mobile communication device, claim 45 is a method claim, and both are reproduced below, using the Petition's element numbering:

[23.pre] A mobile communication device comprising:

¹ Petitioners' chart sets forth that "Grounds 3-4" provide Claims "23, 45" as being obvious over "Grounds 1-2 in further view of Donovan." Pet. at 7. It is unclear from Petitioners' chart whether Petitioners are challenging claims 23 and 45 both in each ground or separately and over what precise combination of references. And the Petition's analysis and Petitioners' expert testimony are equally ambiguous. Pet. at 78-82; Ex. 1003 at ¶¶ 215-221. For purposes of this preliminary response, Vasu assumes the Grounds are as summarized in this Table.

[23.a] a first communication module adapted to communicate with a first wireless network;

[23.b] a second communication module adapted to communicate with an access point associated with a second network; and

[23.c] a switching system to switch operation between the first communication module and the second communication module,

[23.d] wherein if a context changes, the second communication module is activated and a second communication type is initiated,

[23.e] wherein if the context does not change, the second communication type is continued without switching,

[23.f] wherein switching is based on detecting a second context being preferred over the context within a set of known networks or from a newly discovered network,

[23.g] wherein upon activation of a timer, the switching system causes the second communication module to change state from a sleep mode to an active mode,

[23.h] wherein the timer is activated to establish a time window of a predefined size,

[23.i] wherein if a Wi-Fi signal monitor detects that a Wi-Fi signal level is below a second predefined threshold value V_{th2} , the timer is activated to establish a second time window of a second predefined size T_2 ,

[23.j] wherein a third predefined threshold value V_{th3} is smaller than V_{th2} .

[45.pre] A method comprising:

[45.a] monitoring a context of a first communication link;

[45.b] when a network is detected as available with a second communication link with a context preferable to the first communication link, notifying an interface server and establishing the second communication link between the interface server and an end destination device without disrupting the first communication link; and

[45.c] re-directing the second communication link from the interface server to a mobile communication device, thereby establishing the second communication link between the communication device and a second network,

[45.d] wherein upon activation of a timer, a switching system causes a second communication module to change state from a sleep mode to an active mode, wherein the timer is activated to establish a time window of a predefined size,

[45.e] wherein if a Wi-Fi signal monitor detects that a Wi-Fi signal level is below a second predefined threshold value V_{th2} , the timer is activated to establish a second time window of a second predefined size T_2 ,

[45.f] wherein a third predefined threshold value V_{th3} is smaller than V_{th2} .

E. Priority Date of the '281 Patent Claims

Petitioners acknowledge that Claim 23 is entitled to an effective filing date of January 6, 2004, *i.e.*, the filing date of Provisional Application No. 60/534,466 listed in the '281 Patent's priority claim. Pet. at 7.

And for purpose of this preliminary response only, Vasu applies Petitioners' alleged priority date for Claim 45 as April 5, 2017, *i.e.*, the actual filing date of the

’281 Patent. *Id.* at 6-7, 10. Even under this priority date, and under the AIA versions of 35 U.S.C. §§ 102 and 103, Petitioners have failed to demonstrate by a reasonable likelihood that at least one of the Challenged Claims are unpatentable. *Id.* at 6 (arguing that “the AIA applies”).

III. LEVEL OF ORDINARY SKILL IN THE ART

Vasu applies the definition of a person of ordinary skill in the art (“POSITA”) as an individual who possesses (1) a Bachelor’s degree in electrical engineering, computer science, or the like, and (2) has an advanced degree or at least two years of relevant work experience in the field. Additional work experience could serve as a substitute for a lack of education, and vice versa.

IV. CLAIM CONSTRUCTION

On May 19, 2015, numerous claim terms in the Challenged Claims were construed by the district court in the corresponding litigation (Case No. 2:24-cv-00034-JRG-RSP), and are summarized in the below table:

Claim Term	Court’s Claim Construction
“interface server” (Claim 45)	“a server that interacts with multiple wireless networks such that a wireless communication device can roam between the wireless networks.” Ex. 2023 at 12.

“context” (Claims 23, 45)	“characteristic of a signal and/or of a network” Ex. 2023 at 15.
“establishing [a/the] second communication link between the interface [server] and [an/the] end destination device” (Claim 45)	“establishing [a/the] communication link between the interface [server] and [an/the] end destination device that is distinct from the first communication link.” Ex. 2023 at 15, 18.
“wherein upon activation of a timer, the switching system causes [the/a] second communication module to change state from a sleep mode to an active mode” (Claims 23, 45)	“wherein in the process or course of activation of a timer, the switching system causes [the/a] second communication module to change state from a sleep mode to an active mode” Ex. 2023 at 21.
“wherein a third predefined threshold value Vth3 is smaller than Vth2” (Claims 23, 45)	“wherein a third predefined threshold value Vth3 smaller than Vth2 is used for signal monitoring during the second predefined window” Ex. 2023 at 25, 28.
“wherein a third predefined threshold value is smaller than a second predefined threshold value” (Claims 23, 45)	“wherein a third predefined threshold value smaller than a second predefined threshold value is used for signal monitoring during the second predefined window” Ex. 2023 at 25, 28.

V. OVERVIEW OF THE ASSERTED REFERENCES

A. Enzmann (Ex. 1010)

Enzmann is a U.S. Printed Publication No. 2005/0136927 and discloses a method for performing a call handoff from an 802.1x network to a cellular network, and vice versa. Ex. 1010 at Abstract. Petitioners rely on Enzmann in Grounds 1 and 3 (Claim 23) for allegedly disclosing a mobile communication device and a handoff procedure. Pet. at 31 (limitation [23.pre]), 35-37 (limitation [23.d]), 39-42 (limitations [23.e]-[23.f]).

B. Dorenbosch (Ex. 1005)

Dorenbosch is U.S. Patent Publication No. 2005/0048977 and discloses a system and method to improve handover and registration behavior between WLANs and WANs and the battery life of a mobile device when a user is stationary in border cells. Dorenbosch at [0002]. Dorenbosch is relied upon in Grounds 1 and 3 (Claim 23) for allegedly disclosing a switching system and WLAN and WAN transceivers. Pet. at 31-35 (limitations [23.a]-[23.c]), 38-39 (limitation [23.d]), 42-43 (limitation [23.g]).

C. Chaskar (Ex. 1004)

Chaskar is U.S. Patent Publication No. 2004/0137902 and discloses a method and apparatus for controlling handover between a first technology network and a second technology network by detecting information about regions of an area of the

first technology network, and deciding whether to initiate a handover procedure between the first and second technology networks based on the detected region information. Ex. 1004 (“Chaskar”) at Abstract.

As discussed *supra* in Section II.B, the Office previously used Chaskar to reject the Challenged Claims during examination of the '281 Patent. Ex. 1002 at 438-443, 493-499. Vasu distinguished the Challenged Claims over Chaskar by argument and by amending the claims to recite elements such as limitations [23.g], [45.d]: “upon activation of a timer, the switching system causes the second communication module to change state from a sleep mode to an active mode, wherein the timer is activated to establish a time window of a predefined size.” *Id.* at 545, 550.

Petitioners rely on Chaskar as a reference in all Grounds 1-4. Pet. at 7. Petitioners do not contest the absence of an activated timer in Chaskar, and instead rely on a combination with Willhoff to satisfy the activated “timer” limitations. *Id.* at 29 (acknowledging “Chaskar does not specify implementation details of its . . . signal strength averaging windows”); *id.* at 44-45.

D. Willhoff (Ex. 1006)

Willhoff is U.S. Patent No. 6,049,715 and discloses a method and apparatus for determining and executing correct handoff decisions in a wireless communications system. Willhoff at 1:15-20. Willhoff describes using a “long term

average and a short term value of the strength of a received signal [] to determine a trigger condition in a mobile communications system to perform such functions as control channel or traffic channel reselect.” *Id.* at Abstract. The long term average removes the effects of short term fades in the short term signal that otherwise may cause a premature trigger decision. *Id.* The short term value offsets historical bias that may be built into long term average. *Id.* Willhoff describes that “[t]he actual trigger is only realized when both the long term average and the short term value exceed predetermined thresholds in a positive or negative direction.” *Id.*

Willhoff is relied upon in all Grounds 1-4 for allegedly disclosing “activation of a timer” and activating the timer to establish time windows of predefined sizes. Pet. at 44-48 (limitations [23.g]-[23.h]); *id.* at 76-78 (limitations [45.d]-[45.e]. For all of the reasons discussed below, the long-term and short-term averages disclosed in Willhoff do not use timers or establish time windows for comparing signal strength against a threshold value, as claimed.

E. Iizuka (Ex. 1011)

Iizuka discloses a mobile terminal that can “use a plurality of communication mediums enabling a wireless call by dynamically switching between the plurality of communication mediums during a call.” Ex. 1011 (“Iizuka”) at Abstract. Iizuka is the primary reference in Grounds 2 and 4 (Claim 45). *See* Pet. at 60-78.

F. Donovan (Ex. 1007)

Donovan is U.S. Patent Publication No. 2005/0063348 and discloses a wireless station communicates with at least one other wireless station in a local area network (LAN). Ex. 1007 at Abstract. Donovan is relied upon in Grounds 3 and 4 as a backup reference “[t]o the extent further disclosure of a ‘sleep mode’ is required.” Pet. at 78-82.

**VI. PETITIONERS FAIL TO DEMONSTRATE A REASONABLE
LIKELIHOOD OF SUCCESS ON ANY CHALLENGED CLAIM**

**A. Chaskar and Willhoff Fail to Render Obvious the Activation of a
Timer Limitations (All Grounds)**

The Board should deny the Petition because Petitioners have failed to demonstrate by a reasonable likelihood that the asserted references render obvious each and every element of the Challenged Claims. Specifically, Chaskar and Willhoff do not teach or suggest at least limitations [23.g] and [23.h]: “***wherein upon activation of a timer***, the switching system causes the second communication module to change state from a sleep mode to an active mode, ***wherein the timer is activated to establish a time window of a predefined size.***” ’281 Patent at Claim 23

(emphasis added). Claim 45 recites similar limitations requiring the activation of a timer to establish time windows of particular predefined sizes.²

Petitioners map Chaskar's "signal strength averaging windows" to the claimed establishment of a time window of a predefined size. Pet. at 43. But Petitioners acknowledge that Chaskar fails to describe "a timer," or performing an action upon "activation of a timer." *Id.* at 29 (acknowledging "Chaskar does not specify implementation details of its . . . signal strength averaging windows for determining when to handover").

To cure this deficiency, Petitioners cite Willhoff for disclosing the use of an "RSSI average to determine when a handoff condition is to be checked" in a cellular system. Pet. at 44 (citing Willhoff at 9:53-56). Petitioners then argue that a POSITA would have understood, or found it obvious, that a timer is used to measure the RSSI "window." Pet. at 44-45. Petitioners' proposed combination of Chaskar and Willhoff would fail to yield the Challenged Claims because Chaskar's and Willhoff's signal strength measurement techniques with "averaging windows" are

² Claim 45 recites "wherein upon activation of a timer, a switching system causes a second communication module to change state from a sleep mode to an active mode, wherein the timer is activated to establish a time window of a predefined size." '281 Patent at 12:12-16 (limitation [45.d]).

categorically different from the claimed “time windows” during which measurement values are compared to a threshold value.

Signal strength averaging windows do not satisfy the claimed time windows. Chaskar describes the use of “signal strength **averaging** windows” and “having different values for the widths of **averaging** windows.” Chaskar at [0076]-[0077] (emphasis added). Willhoff describes two similar types of signal strength averages: a “long . . . term average[.]” and a “short term average[.]” Willhoff at 6:9-10. The long term average is essentially a moving average “computed by averaging samples” contained in a so-called “window of time.” *Id.* at 9:56-62, 7:27-29 (describing the mobile station maintains “a running average (i.e. the long term average) of the last five signal strength measurements.”) The short term average is also an average of signal strength samples, but an “average over a smaller window of time.”³ Willhoff at 9:59-61.

³ Willhoff interchangeably uses the terms “short term value,” “short term average,” “short term sample rate,” and Second Stage Sample Rate (SSSR). *Compare* Willhoff at 4:66-5:2 (“Referring to FIG. 1, curves for both short term values (individual samples) 102 and a long term (five sample) average 104 are shown indicating the strength of a received signal”) *with id.* at 5:3-5 (“the long term average generally

These so-called “windows of time” refer to a range of past measurement samples that Willhoff’s technique uses to calculate the signal strength averaged over a backward-looking sliding window of measurement samples. These types of moving averages seen in Willhoff and Chaskar do not use the type of “timer” that, for example, starts at a particular moment in time and is forward-looking. Indeed, there is no timer of predetermined size set because, as Willhoff explains, the short and long term averages are continuously measured and *indefinitely* compared to each other. Willhoff depicts its approach to collecting past measurement samples in Figures 15A and 15B. Here, Willhoff discloses long-term and short-term sample buffers are used to store the many samples used in calculating the long term and short term averages:

tracks the trend of the short term average”); *id.* at 6:9-10, 10:42-45, 10:56-57; *id.* at 13:59-62 (independent claim 1 reciting “short term average value”).

FIG. 15a

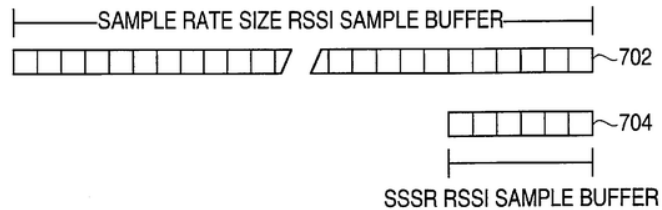
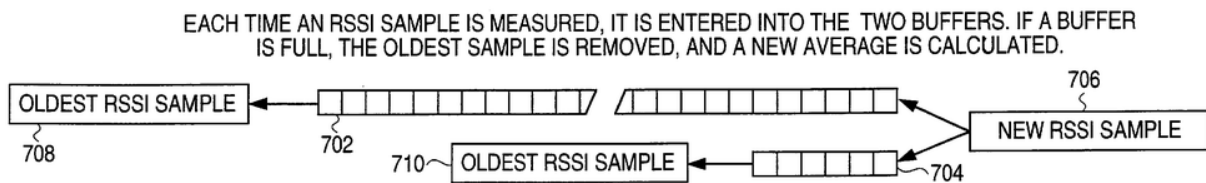


FIG. 15b



Willhoff at FIGS. 15A and 15B; *id.* at 12:5-12 (describing example buffers sized to store 160 past samples long term, and 5 past samples short term).

Each time an RSSI sample is measured, the sample is saved and entered into two buffers, one associated with a long term average (item 702) and another buffer associated with the short term average (item 704). Willhoff at 12:61-13:2. The “window of time” of these signal strength averages is the span of time defined by the time that the oldest sample in the buffer was recorded and the time that the newest sample in the buffer was recorded. *Id.* And this window slides over time because Willhoff teaches that if the buffer is full, the oldest samples (708) are discarded, and a new average is calculated. *Id.*

Contrary to Petitioners’ argument, a POSITA would not have understood that a timer is used to measure the “window of [a] longer ‘width’,” because no such

window is actually measured. Pet. at 44. Willhoff's long term average is computed by averaging samples "contained in a particular window of time," but Willhoff does not use a timer to establish or measure that "particular window of time." *Id.* For example, Willhoff describes an example long term average having a width of "3.2 seconds," but Willhoff does not actually describe measuring a 3.2 seconds window of time. Willhoff at 12:5-10. Instead, the long-term average is composed of a buffer storing signal samples that happened to be collected during the last 160 intervals of 20 ms. *Id.* No timer is set for measuring 3.2 seconds. Petitioners extensively rely on expert testimony to argue a POSITA's understanding of a necessary "timer" implementation, but none of this testimony addresses this deficiency. Pet. at 44-45; *see* Ex. 1003 at ¶¶ 135-137.

In contrast to the Challenged Claims, Willhoff describes that when both the long-term average and short-term averages exceed an appropriate threshold value, then the "trigger is . . . realized." Willhoff. at 3:24-37, 9:15-25, 12:36-39 ("If the SSSR RSSI buffer average is less than the handoff threshold in step 504, then the conditions for a handoff trigger have been met, i.e. both the long term average and the short term signal strength values are below the threshold."). There are no timers set and no time window during which the "trigger is . . . realized." *Id.* Instead, the trigger triggers any time the long-term and short-term averages cross a threshold. *Id.*

Accordingly, Chaskar and Willhoff do not render obvious limitations [23.g], [23.h] and [45.d]: “wherein upon activation of a timer, the switching system causes the second communication module to change state from a sleep mode to an active mode, wherein the timer is activated to establish a time window of a predefined size” as recited in claims 23 and 45. For at least similar reasons, Chaskar and Willhoff do not render obvious limitations [23.h] and [45.e], also reciting activation of the timer, specifically “wherein if a Wi-Fi signal monitor detects that a Wi-Fi signal level is below a second predefined threshold value V_{th2} , the timer is activated to establish a second time window of a second predefined size T_2 .”

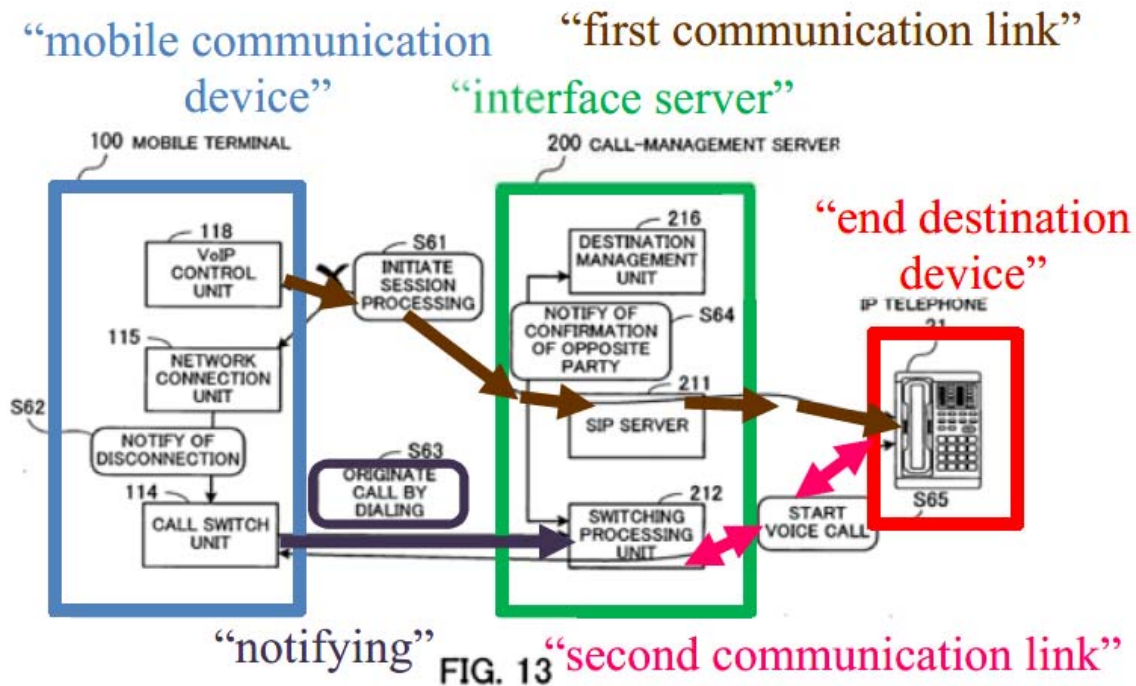
B. Iizuka Fails to Teach Limitation [45.b]: Establishing a Second Communication Link Between the Interface Server and an End Destination Device Without Disrupting the First Communication Link (Ground 2 and 4, Claim 45)

Grounds 2 and 4 challenge Claim 45 over combinations of Iizuka, Chaskar, Willhoff, and, optionally, Donovan. Both of these grounds should be rejected because Iizuka does not disclose or suggest establishing a second communication link between the interface server and the end destination device without disrupting the first communication link, and Petitioners do not argue that Chaskar, Willhoff, and Donovan teach that limitation.

1. Rerouting a First Connection is Not the Same as Establishing a Second Connection

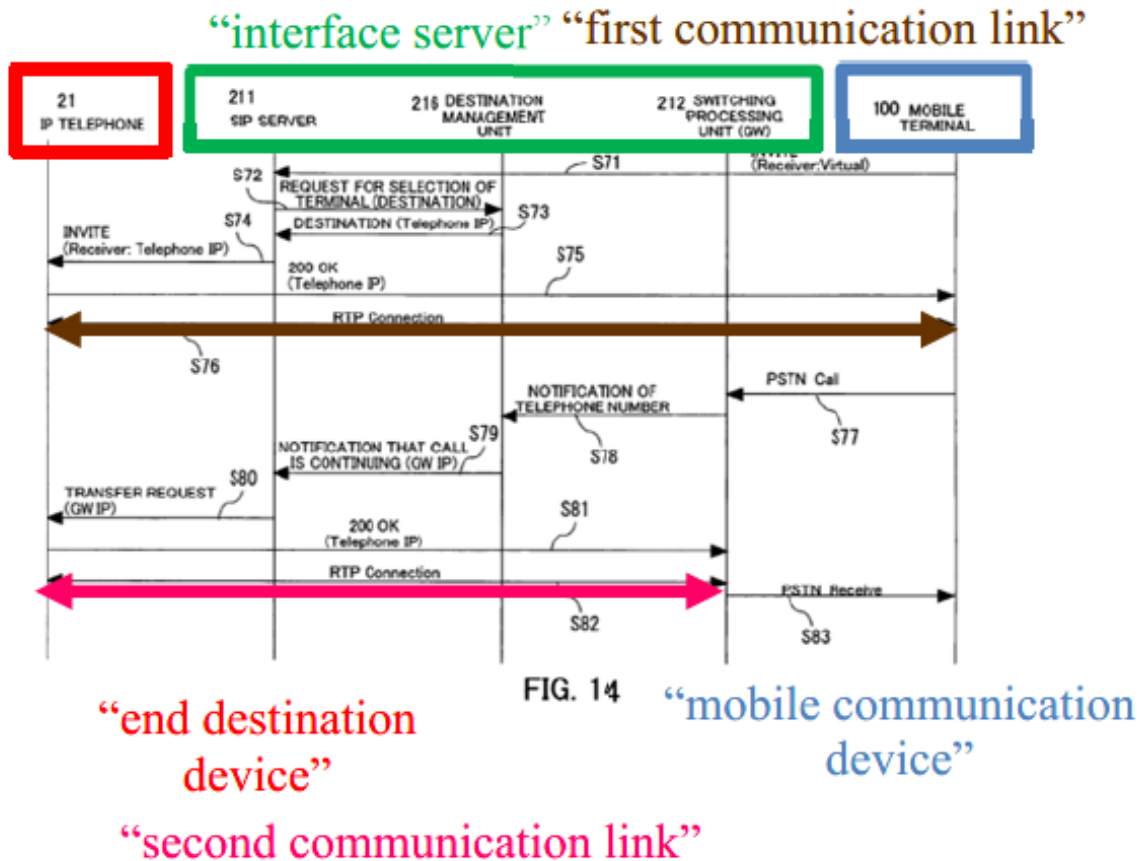
Iizuka in view of Chaskar and Willhoff do not teach or suggest the limitation [45.b]: “when a network is detected as available with a second communication link with a context preferable to the first communication link, notifying an interface server and *establishing the second communication link between the interface server and an end destination device without disrupting the first communication link*,” as recited in Claim 45. ’281 Patent at 12:1-6 (emphasis added).

Petitioners map Iizuka to the elements of Claim 45 as follows: Iizuka’s mobile terminal 100 to the claimed “**mobile communication device**,” Iizuka’s call management server 200 to the claimed “**interface server**,” and Iizuka’s IP telephone 21 to the claimed “**end destination device**.” Pet. at 65-68.



Id. at 68 (Fig. 13 of Iizuka, annotated).

Under Petitioners’ theory, the “**first communication link**” limitation is met by a VoIP call or SIP session established between the mobile terminal 100 and the IP telephone 21. *Id.* at 62-63. And the “**second communication link**” is established when “(an RTP (Real-time Transport Protocol) connection for real-time audio streams)” is set up between the call-management server and the IP telephone “as depicted in Iizuka’s Fig. 14.” *Id.* at 67 (citing Iizuka at [0175]).



Id. at 68 (annotating Fig. 14 of Iizuka, highlighting RTP Connection at S76 in **brown** as “**first communication link**” and highlighting RTP Connection at S82 in **pink** as “**second communication link**”).

The central flaw in Petitioners’ theory is that because the RTP connection established in Step S76 (the alleged “first communication link”) is rerouted to switching processing unit 212 (of call-management server 200), the first communication link is disrupted, and no **second** connection is established between the IP telephone 21 and the switching processing unit 212 (of the call-management server 200). See Iizuka at [0173] (disclosing the transmittal of “a transfer request in

which the IP address of the switching processing unit 212 is designated”); *see also id.* at Fig. 14 (disclosing Step S80 as “Transfer Request (GW IP)”).

As Vasu explained to the Office when distinguishing similar claim language in the related '181 Patent's claims from prior art during examination, rerouting a connection is not the same as establishing a second connection for at least two reasons. *See* § II.C, *supra*; Ex. 2017 at 83. First, rerouting a first connection without the establishment of a second connection fails to satisfy the district court's claim construction (which Petitioners proposed and urged the district court to adopt) in the parallel litigation that the second communication link be “distinct from the first communication link.” *See* § IV (Claim Construction), *supra*; Ex. 2023 (Claim Construction Order) at 15-18. Second, by rerouting the first connection at S81, the first communication link is disrupted:

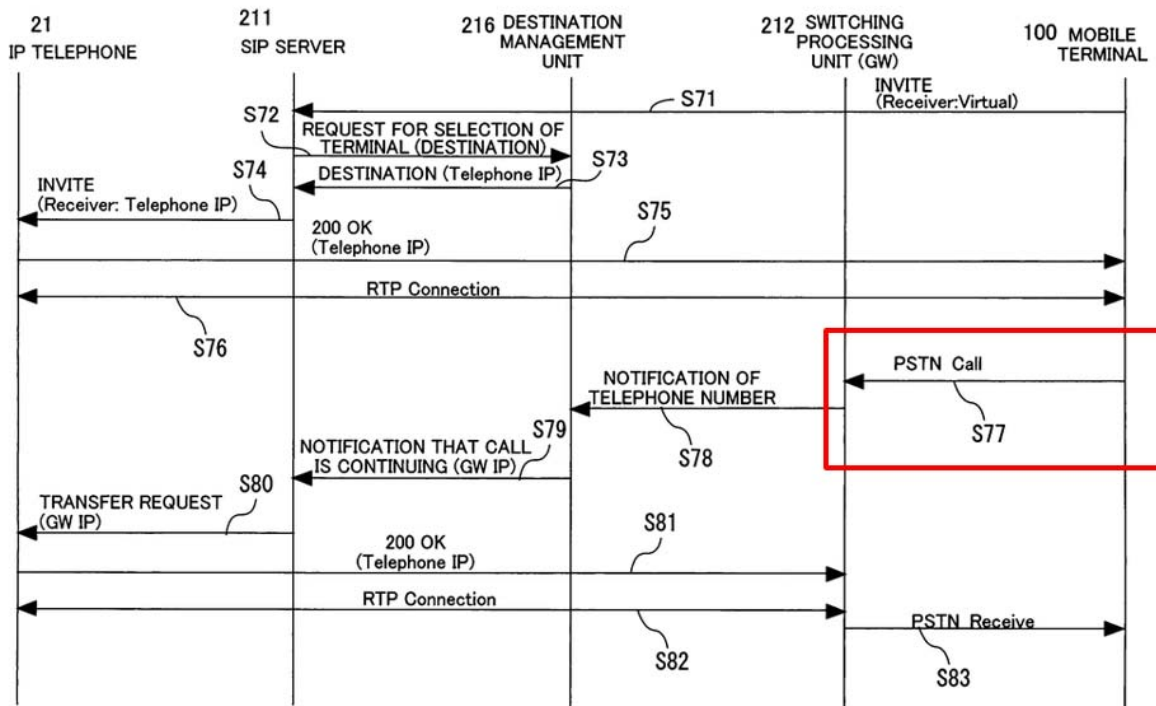


FIG. 14

Iizuka at Fig. 14 (annotated).

For at least the foregoing reasons, Iizuka does not teach or suggest “establishing the second communication link between the interface server and an end destination device without disrupting the first communication link.”

2. Disclosure of a VoIP Call That “Still Continues” Does Not Satisfy Establishing a Second Communication Link Without Disrupting a First Communication Link

The Petition argues that Iizuka’s disclosure that the “VoIP call ‘still continues’” satisfies the claim requirement of “without disrupting the first communication link.” Pet. at 67 (citing Iizuka at [0162]). This is incorrect and unsupported by the record because Petitioners incorrectly cross-reference steps at

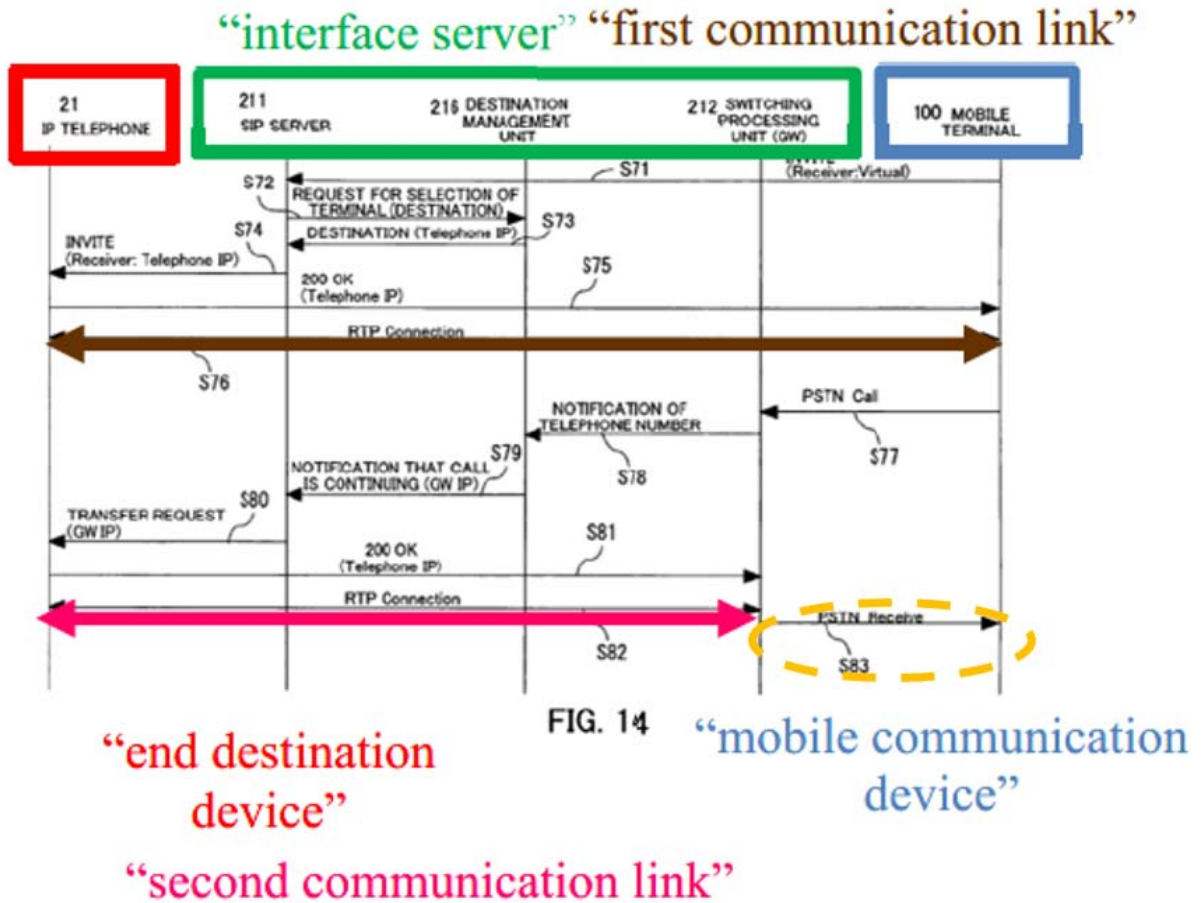
different stages in Iizuka's switching process to support their theory that Iizuka discloses "establishing a second communication link between the interface server and the end destination device without disrupting the first communication link." *Id.* (citing steps disclosed [0160]-[0162] and steps disclosed [0170]-[0175] in Iizuka).

The "still continues" phrase refers to a step in Iizuka's switching process that occurs after the alleged first communication link has already been transferred, *i.e.*, disrupted. Iizuka at [0162], [0176]. The full context of the "still continues" phrase is in Iizuka's "Step S65," which reads: "[t]he switching processing unit 212 realizes a voice call through the mobile telephone network 10 while the VoIP call which has already been established ***still continues***." *Id.* at [0162] (emphasis added). Thus, while the VoIP call "still continues" between the switching processing unit and the IP telephone, the mobile device's communication link was already disrupted. *Id.*

Petitioners argue in a footnote that Iizuka describes "the same switching embodiment in connection with Figure 13 . . . and Figure 14" for a switching process, and, therefore, the Petition uses parallel citations to the relevant disclosures for both Figures 13 and 14. Pet. at 51, n.5. But, assuming that Figures 13 and 14 describe the same embodiment, the Petition incorrectly cites steps out of order to support their theory. Specifically, Step S65 of Figure 13 corresponds to Step S83 of Figure 14, as demonstrated by comparing the texts in the below table.

Iizuka's Figure 13 embodiment	Iizuka's Figure 14 embodiment
[0162]: “[Step S65] <i>The switching processing unit 212</i> realizes a voice call <i>through the mobile telephone network 10</i> while the VoIP call which has already been established still continues.”	[0176]: “[Step S83] <i>The switching processing unit 212</i> returns to the mobile terminal 100 a response to the origination of the call by dialing, and establishes a connection <i>through the mobile telephone network 10</i> . Thus, a call between the IP telephone 21 and the mobile terminal 100 becomes possible.”

Iizuka at [0162], [0176] (emphasis added). Like Step S65, Step S83 of Figure 14 occurs ***after*** Steps S80, S81, and S82 (*i.e.*, after the RTP connection has already been transferred (*i.e.*, disrupted). This timing is seen in Petitioners' annotated figure reproduced below.



Pet. at 68 (citing Fig. 14 of Iizuka) (further annotations added in orange dashed circle). The Petition's reliance on Figure 13's Step S65 and paragraph [0162] is also problematic because the Petition later relies on essentially the same step for meeting limitation [45.c] (the “re-directing . . .” limitation). *Id.* at 71-72 (citing Iizuka at [0176]). That is, the Petition points to Figure 14's Step S83, which again corresponds to Step S65 already relied on for limitation [45.b], for satisfying limitation [45.c]. *Id.*

The Petition does not explain how the phrase “still continues” demonstrates that Iizuka teaches a second communication link is established without disrupting

the first communication link. Pet. at 53, 66, 67 (citing the phrase “still continues” or “continues” without explanation). The Petition also does not explain how the phrase “still continues” demonstrates no disruption to a first communication link contrary to the surrounding paragraphs and accompanying Figures 13 and 14 that plainly describe that a first RTP connection is transferred (i.e., disrupted) and rerouted between the call-management server 200 and the IP telephone, as discussed above. See Iizuka at [0162], [0173]-[0174]; see § VI.B.1, *supra*. Nor does Petitioners' expert provide any analysis or explanation of the phrase “still continues” in his declaration. See Ex. 1003 at ¶¶ 181-185 (Petitioners' expert parroting the Petition's arguments).

Accordingly, Iizuka does not disclose “when a network is detected as available with a second communication link with a context preferable to the first communication link, notifying an interface server and establishing the second communication link between the interface server and an end destination device without disrupting the first communication link,” and therefore cannot render obvious Challenged Claim 45 in Grounds 2 and 4.

VII. CONCLUSION

For all of these reasons, Vasu accordingly requests that the Board deny institution of *inter partes* review of the Challenged Claims of the '281 Patent.

Respectfully submitted,

Dated: June 10, 2025

/James Hannah/

James Hannah (Reg. No. 56,369)
Kristopher Kastens (Reg. No. 57,517)
Herbert Smith Freehills
Kramer (US) LLP
333 Twin Dolphin Drive, Suite 700
Redwood Shores, CA 94065
Telephone: (650) 752-1700
Facsimile: (650) 752-1800
James.Hannah@hsfkramer.com
Kris.Kastens@hsfkramer.com

Jeffrey H. Price (Reg. No. 69,141)
Jeffrey Eng (Reg. No. 63,189)
Herbert Smith Freehills
Kramer (US) LLP
1177 Avenue of the Americas
New York, NY 10036
Telephone: (212) 715-7502
Facsimile: (212) 715-8302
Jeffrey.Price@hsfkramer.com
Jeffrey.Eng@hsfkramer.com

Attorneys for Patent Owner
Vasu Holdings, LLC

CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

The undersigned hereby certifies that the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE** has 5,975 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(b). This word count was prepared using the Microsoft Word word-processing system used to prepare this paper.

Dated: June 10, 2025

/James Hannah/
James Hannah (Reg. No. 56,369)

Attorneys for Patent Owner

CERTIFICATE OF SERVICE

The undersigned certifies, in accordance with 37 C.F.R. § 42.6(e), and pursuant to agreement by the parties that filing with the Board through the Patent Trial and Appeal Case Tracking System (P-TACTS) constitutes electronic service, service was made on Petitioners as detailed below.

<i>Date of service</i>	June 10, 2025
<i>Manner of service</i>	Electronic Filing with the Board (james.l.davis@ropesgray.com; alexander.middleton@ropesgray.com; christopher.bonny@ropesgray.com; Samsung-Vasu-IPR-Ropes@ropesgray.com)
<i>Documents served</i>	PATENT OWNER'S PRELIMINARY RESPONSE
<i>Persons Served</i>	ROPES & GRAY LLP James L. Davis, Jr., Alexander E. Middleton, Christopher M. Bonny

/James Hannah/
James Hannah
Registration No. 56,369
Lead Counsel for Patent Owner