

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,

Petitioner,

v.

TELCOM VENTURES LLC,

Patent Owner.

Case No. IPR2025-00974
U.S. Patent No. 10,674,432

PATENT OWNER'S PRELIMINARY RESPONSE

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2001	Interim Processes for PTAB Workload Management, Acting Director Memorandum (March 26, 2025)
2002	FAQs for Interim Processes for PTAB Workload Management
2003	EDTX Litigation Second Amended Docket Control Order (Jan. 29, 2025)
2004	Docket Navigator Statistics for Judge Rodney Gilstrap
2005	Samsung's Preliminary Invalidity Contentions (Feb. 3, 2025)
2006	Exhibit 432-C (Samsung's Subject Matter Eligibility Contentions)
2007	Telcom Ventures Complaint for Patent Infringement
2008	Non-Final Office Action, Application No. 17/730,174
2009	Declaration of Dr. Chuck Easttom
2010	<i>Curriculum Vitae</i> of Dr. Chuck Easttom
2011	Chiradeep BasuMallick, "What is NFC (Near Field Communication)? Definition, Working, and Examples" (Sept. 29, 2022), https://www.spiceworks.com/tech/networking/articles/what-is-near-field-communication/
2012	Liu et al., "Near-Field Communications: A Comprehensive Survey," IEEE (June 2025)
2013	"The Creation of the NFC Forum and its Vision" (2011) https://cs.stanford.edu/people/eroberts/courses/cs181/projects/2010-11/NFCChips/nfcforum.html
2014	McHugh & Yarmey, "Near Field Communication: Introduction and Implication," ERIC (2012)
2015	Coskun et al., "The Survey on Near Field Communication," Sensors (June 5, 2015)
2016	"Cisco SIP IP Phone Administrator Guide, Release 7.5," Cisco https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cuipph/7960g_7940g/sip/7_5/english/administration/guide/ver7_5/sipaxa75.pdf
2017	Rosenberg et al., RFC 3261 SIP: Session Initiation Protocol (June 2002), https://www.ietf.org/rfc/rfc3261.txt
2018	Schulzrinne et al., RFC 3550 RTP: A Transport Protocol for Real-Time Applications (July 2003), https://datatracker.ietf.org/doc/html/rfc3550

2019	Baughner et al., RFC 3711 The Secure Real-time Transport Protocol (SRTP) (Mar. 2004), https://www.rfc-editor.org/rfc/rfc3711.html
2020	Kurose et al., Computer Networking: A Top Down Approach, Chapter 7.4 (March 2012, 6th ed.) https://gaia.cs.umass.edu/kurose_ross/retired/protocols_real_time_interactive.pdf
2021	Rosenberg & Shockey, The Session Initiation Protocol (SIP): A Key Component for Internet Telephony, Computer Telephony, June 2000, at 124 https://gaia.cs.umass.edu/kurose_ross/retired/protocols_real_time_interactive.pdf
2022	Mealling & Daniel, RFC 2915 The Naming Authority Pointer (NAPTR) DNS Resource Record (Sept. 2000) https://www.cs.columbia.edu/sip/articles/SIP_tutorial_CT_Magazine_June2000.pdf
2023	Jeremy George, DNS Configuration, SIP.edu Cookbook (May 12, 2003), https://web.mit.edu/sip/sip.edu/dns.shtml
2024	Series E: Overall Network Operation, Telephone Service, Service Operation and Human Factors, International Telecommunication Union (Nov. 2010), https://www.itu.int/rec/t-rec-e.164-201011-i/en

TABLE OF CLAIMS

Claim	Limitation
1[pre]	A method of operating a smartphone in performing a plurality of financial transactions, the method comprising:
1[a][i]	responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone,
1[a][ii]	enabling a mode to communicate by the smartphone information requesting an authorization;
1[b]	while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted;
1[c]	receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data, the second data relating to the plurality of financial transactions to be conducted and differing from the first data;
1[d]	performing a first transaction of the plurality of financial transactions by:
1[e]	detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity, wherein the first entity is distinct from the first device;
1[f]	establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity, in response to the proximity condition having been satisfied between the smartphone and the first entity;
1[g]	receiving, using the first air interface, a short-range signal from the first entity; and

Claim	Limitation
1[h]	responsive to receiving the short-range signal from the first entity, sending by the smartphone to the first entity over the first air interface, information associated with the second data received from the first device; and
1[i]	independent of performing said first transaction, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface,
1[j]	wherein said transmitting by the smartphone first data and said receiving by the smartphone second data are performed over an air interface that differs from the first air interface.
2[pre]	The method of claim 1,
2[a]	wherein establishing the wireless short-range communications link between the smartphone and the first entity is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.
3[pre]	The method of claim 1,
3[a]	wherein sending by the smartphone to the first entity, information associated with the second data, is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.
4[pre]	The method of claim 1,
4[a]	wherein sending by the smartphone to the first entity, information associated with the second data, is performed responsive to a value of at least one parameter associated with the smartphone.
5[pre]	The method of claim 1, wherein the method further comprises:
5[a]	performing a second transaction of the plurality of financial transactions by:

Claim	Limitation
5[b]	detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity, wherein the second entity is distinct from the first entity and is further distinct from the first device;
5[c]	establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity, in response to the proximity condition having been satisfied between the smartphone and the second entity;
5[d]	receiving, using the first air interface, a short-range signal from the second entity; and
5[e]	responsive to receiving the short-range signal from the second entity, sending by the smartphone to the second entity over the first air interface, information associated with the second data received from the first device.
6[pre]	The method of claim 1,
6[a]	wherein said transmitting by the smartphone first data to a first device includes transmitting by the smartphone data relating to a request to pay for a transaction; and
6[b]	wherein said receiving by the smartphone second data from the first device includes receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction.
7[pre]	The method of claim 1, comprising:
7[a]	transmitting by the smartphone third data to a second device; the second device being distinct from the first device and further being distinct from the first entity; and
7[b]	receiving by the smartphone fourth data from the second device relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction,

Claim	Limitation
7[c]	wherein said transmitting by the smartphone third data to a second device and said receiving by the smartphone fourth data from the second device are performed over the air interface that differs from the first air interface.
8[pre]	The method of claim 1, wherein said operations further comprise:
8[a]	responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices.
9[pre]	The method of claim 1,
9[a]	wherein the second air interface comprises an Orthogonal Frequency Division Multiplexed and/or an Orthogonal Frequency Division Multiple Access (OFDM/OFDMA) technology.
10[pre]	A smartphone that is configured to perform operations associated with a plurality of financial transactions; the operations comprising:
10[a]	responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization;
10[b]	while the mode is enabled, transmitting first data to a first device as a precursor to performing the plurality of financial transactions; and
10[c]	receiving second data from the first device responsive to said transmitting the first data;
10[d]	performing a first financial transaction of the plurality of financial transactions by:
10[e]	detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity, wherein the first entity is distinct from the first device;

Claim	Limitation
10[f]	establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity, in response to the proximity condition having been satisfied between the smartphone and the first entity;
10[g]	receiving, using the first air interface, a short-range signal from the first entity; and
10[h]	responsive to receiving the short-range signal from the first entity, sending to the first entity over the first air interface, information based on the second data received from the first device; and
10[i]	independent of performing a transaction to pay for one or more items, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface,
10[j]	wherein said transmitting first data and said receiving second data are performed over an air interface that differs from the first air interface.
11[pre]	The smartphone of claim 10,
11[a]	wherein establishing the wireless short-range communications link between the smartphone and the first entity is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.
12[pre]	The smartphone of claim 10,
12[a]	wherein sending by the smartphone to the first entity, information based on the second data, is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.
13[pre]	The smartphone of claim 10,
13[a]	wherein sending by the smartphone to the first entity, information based on the second data, is performed responsive to a value of at least one parameter associated with the smartphone.
14[pre]	The smartphone of claim 10, wherein the operations further comprise:

Claim	Limitation
14[a]	performing a second financial transaction of the plurality of financial transactions by:
14[b]	detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity; wherein the second entity is distinct from the first entity and is further distinct from the first device;
14[c]	establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity, in response to the proximity condition having been satisfied between the smartphone and the second entity;
14[d]	receiving, using the first air interface, a short-range signal from the second entity; and
14[e]	responsive to receiving the short-range signal from the second entity, sending by the smartphone to the second entity over the first air interface; information associated with the second data received from the first device.
15[pre]	The smartphone of claim 10,
15[a]	wherein said transmitting by the smartphone first data to a first device includes transmitting by the smartphone data relating to a request to pay for a transaction; and
15[b]	wherein said receiving by the smartphone second data from the first device includes receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction.
16[pre]	The smartphone of claim 10, wherein said operations further comprise:
16[a]	transmitting third data to a second device; the second device being distinct from the first device and further being distinct from the first entity; and

Claim	Limitation
16[b]	receiving by the smartphone fourth data from the second device relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction;
16[c]	wherein said transmitting by the smartphone third data to a second device and said receiving by the smartphone fourth data from the second device are performed over the air interface that differs from the first air interface.
17[pre]	The smartphone of claim 10, wherein said operations further comprise:
17[a]	responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices.

I. INTRODUCTION

Telcom Ventures LLC (“Telcom Ventures” or “Patent Owner”) respectfully submits this Preliminary Response (“POPR”) requesting that the Board deny institution of the Petition for *inter partes* review (Paper 1, “Petition,” or “Pet.”) filed by Petitioner Samsung Electronics Co. Ltd. (“Samsung” or “Petitioner”).

The Petition seeks *inter partes* review (“IPR”) of claims 1-17 (the “Challenged Claims”) of U.S. Patent No. 10,674,432 (“the ’432 Patent,” Ex. 1001). The Petition sets forth two grounds. Petitioner’s first ground asserts that U.S. Patent Application No. 2009/0069049 to Jain (“Jain,” Ex. 1017) alone would have rendered the Challenged Claims obvious. Petitioner has only identified disparate disclosures within Jain and has drawn conclusions contrary to the reference’s teachings by relying heavily on gap filling and expert testimony in an attempt to reach the claimed inventions of the ’432 Patent.

Petitioner’s single-reference obviousness ground based on Jain fails for several reasons. First, despite the claims requiring a smartphone in both the preamble and the body, Petitioner relies on two separate devices (i.e., a mobile device and a separate transaction card) in Jain to meet the claims. *See* Pet. at 9-12. Worse, Petitioner’s combination of Jain’s distinct transaction card and mobile device to meet the required smartphone fails because there can be no dispute that Jain’s transaction card—not the mobile device—performs the financial transactions. Jain

would not have rendered the required smartphone obvious because Jain specifically teaches performing certain actions by its mobile device and certain actions by its transaction card.

Second, Petitioner argues that activating the transaction card's antenna would have rendered obvious the claimed "enabling a mode to communicate . . . information requesting an authorization." Pet. at 15-16. But the transaction card antenna in Jain has nothing to do with "requesting an authorization." Petitioner must then point to a completely distinct process using a separate mobile device antenna, method 900, for the claim requirement of "while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted." Pet. at 16-19. Petitioner does not and cannot allege that it would have been obvious to combine the two processes, utilizing separate hardware, to render obvious the claim limitation.

Third, Petitioner contends that the activation code of Jain would have rendered obvious the claimed "enabling a mode to communicate by the smartphone information requesting an authorization" and "receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data, the second data relating to the plurality of financial transactions to be conducted and differing from the first data." Pet. at 15-19. But Jain's activation code cannot be the claimed second data because Petitioner fails to establish that the activation code

is an authorization. The activation code must still be compared to a pre-stored code on the mobile device before authorization occurs. As such, Petitioner has failed to demonstrate that the activation code alone can be the claimed “authorization.”

Finally, Petitioner cannot demonstrate that Jain’s mobile device detects “that a proximity condition is satisfied between the smartphone and a first entity,” *see* Pet. at 19-24, because only the transaction card (not the mobile device) includes Near Field Communications (“NFC”) capabilities. Shifting this capability to the mobile device would contradict Jain’s disclosure of using a separate and distinct transaction card capable of independently performing financial transactions. Accordingly, Ground 1 (alleged obviousness based on Jain alone) fails.

Petitioner’s second ground asserts that U.S. Patent Application No. 2006/0165060 to Dua (“Dua,” Ex. 1018) alone would have rendered the Challenged Claims obvious. *See* Ex. 1009 at 169. But Dua fails to render any of the Challenged Claims obvious, and Petitioner’s single-reference obviousness ground based on Dua impermissibly disregards key requirements and gap fills missing disclosures. Petitioner’s Dua ground fails for multiple reasons.

First, Petitioner ignores that the claimed “enabling a mode to communicate” must be “responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone” by pointing to establishing Session Initiation Protocol (“SIP”) communications as the claimed “enabling a mode to

communicate.” Pet. at 48-53. But establishing SIP communications in Dua is not “responsive to at least one physiological parameter” because SIP communications begin prior to any disclosed use of such parameters. Worse, while Dua discloses that SIP uses a separate authentication process.

Second, Petitioner hand-waves away Dua’s lack of disclosure of the claimed “detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity” by asserting that NFC meets the limitations of the claims. *E.g.*, Pet. at 57-60. That is, the Petition solely relies on NFC to address “detecting by the smartphone that a proximity condition is satisfied.” *Id.* But Petitioner fails to recognize that Dua mentions NFC only in passing in its background and never discloses or suggests using NFC for its disclosed embodiments—embodiments that Petitioner expressly relies upon for obviousness. *See* Ex. 2009 ¶¶136-143. Dua thus makes clear that it specifically chose not to rely on NFC in its innovation. Without disclosure in Dua, Petitioner is left to rely on impermissible gap-filling by its expert. *E.g.*, Pet. at 57-60.

Accordingly, the Petition fails to establish that either ground would have rendered the Challenged Claims obvious. Petitioner has failed to meet its burden to show a reasonable likelihood of unpatentability of any of the Challenged Claims. *See* 37 C.F.R. § 42.108(c). Accordingly, Patent Owner requests that the Board deny institution of *inter partes* review.

II. LEGAL STANDARD

It is Petitioner's burden to demonstrate unpatentability by a preponderance of the evidence. The Petition must establish, with particularity, the grounds and evidence that support invalidating the patented claims. 35 U.S.C. § 312(a)(3). Petitioner "must 'specify where each element of the claim is found in the [relied upon] prior art patents.'" *In-Depth Geophysical, Inc. v. ConocoPhillips Co.*, IPR2019-00850, Paper 56 at 27 (P.T.A.B. Sept. 3, 2020) (quoting 37 C.F.R. § 42.104(b)(4)). The Petition must both "clearly point out the differences between the claimed invention and [the prior art]" and "explain why a person of ordinary skill in the art would have found the claimed subject matter obvious in spite of those differences." *Synopsys, Inc. v. Mentor Graphics Corp.*, IPR2012-00041, Paper 16 at 14 (P.T.A.B. Feb. 22, 2013). Petitioner must recite where each challenged limitation is found in the reference(s) and explain why a person of ordinary skill in the art ("POSITA") would have modified the primary reference. *Microsoft Corp. v. Secure Web Conf. Corp.*, IPR2014-00745, Paper 12, 11-13 (P.T.A.B. Sept. 29, 2014).

In addition, the Board may institute based only on what the Petition actually presents and not what the Petition could have reasonably contained. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016). The Board cannot "deviate from the grounds in the petition and raise its own" theories of invalidity.

Sirona Dental Sys. GmbH v. Institut Straumann AH, 892 F.3d 1349, 1356 (Fed. Cir. 2018).

III. BACKGROUND

A. The '432 Patent

Applicants filed U.S. Patent Application No. 16/251,834 on January 18, 2019, and the '432 Patent issued on June 2, 2020. Ex. 1009 at 58, 356. The '432 Patent claims the benefit of U.S. Patent Application No. 12/264,711—later issued as U.S. Patent No. 9,462,411—which has a filing date of November 4, 2008. Ex. 1001 at 2.

The '432 Patent describes mobile wireless devices and methods of using a mobile wireless device to perform financial transactions, but only when certain conditions or criteria are met, such as the satisfaction of a proximity condition and a criterion for the value of a parameter, e.g., a physiological parameter. '432 Patent, 1:22-27; 6:14-25; *see also* Ex. 2009 ¶57. In the prior art, mobile wireless devices were rigidly configured to perform a predetermined number of functions. '432 Patent, 1:36-41; *see also* Ex. 2009 ¶57. To overcome this rigidity, the '432 Patent describes devices and methods that “may be used to enable adaptively one or more modes/functions of a device” based upon satisfying certain criteria. '432 Patent, 1:45-51; *see also* Ex. 2009 ¶57. The '432 Patent explains that the invention advantageously allows “a mobile wireless device [to] act as a ‘wallet’ (over and

above other functions) only when it is time to pay for an item and not act as a wallet when there is no need to do so.” ’432 Patent, 1:41-44; *see also* Ex. 2009 ¶57.

The ’432 Patent also describes estimating “a value of at least one other parameter that may be associated with the wireless communications device . . . and/or an entity (living or otherwise) that is associated with and/or is proximate to the wireless communications device.” ’432 Patent, 6:14-20; *see also* Ex. 2009 ¶58. Such parameters include “velocity, acceleration, ToD, ToM, ToY, humidity, temperature, height, level of brightness, level of darkness, a blood pressure, a heart rate, a blood content, a physiological state, a psychological state, etc.” ’432 Patent, 6:20-25; *see also* Ex. 2009 ¶58. These parameters can be estimated using “sensors that may, according to some embodiments, be device-based and/or network assisted/based means and/or sensors.” ’432 Patent, 6:25-31; *see also* Ex. 2009 ¶58. The disclosed wireless communications devices may be “configured to selectively enable the first communications mode/function” responsive to a value of such a parameter. ’432 Patent, 6:41-50; *see also* Ex. 2009 ¶58.

During prosecution, the Examiner rejected proposed Claims 1-19 under 35 U.S.C. § 103 as being unpatentable over Dua in view of Creamer et al. (US 2004/0143550). Ex. 1009 at 169. Applicants filed a request for continued examination along with a response. Ex. 1009 at 233-254. Applicants noted that “Amended claim 1 recites in pertinent part: responsive to at least one physiological

parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization” Ex. 1009 at 253. Applicants also stated:

The Final Office Action asserted that paragraphs [0026], [0089], and [0495] of Dua taught “the service parameters interaction based on the transaction reads on a physiological parameter”. None of these paragraphs, however, nor anywhere else in Dua or Creamer, teach or suggest “enabling a mode to communicate . . . responsive to at least one physiological parameter . . .” as recited in amended claim 1. Independent claims 5, 9, and 14 include similar language.

Ex. 1009 at 253. A notice of allowance issued on April 22, 2020. Ex. 1009 at 269-278. The Examiner stated in the notice of allowance that:

Dua alone or in combination fails [to] teach[] or fairly suggest[:] responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization; while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted; . . . independent of performing said first transaction, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface, wherein said transmitting by the smartphone first data and said receiving by the smartphone second data are performed over an air interface that differs from the first air interface.

Ex. 1009 at 275-276 (emphasis in original).

B. Jain (Ex. 1017)

U.S. Patent Application No. 2009/0069049 to Jain is titled “Interfacing Transaction Cards with Host Devices.” Ex. 1017 at 1. Jain has a filing date of

September 5, 2008, and was published on March 12, 2009. Jain describes a transaction card that interacts with a separate and distinct mobile device to perform financial transactions. Jain's transaction card independently performs financial transactions because it is the only device in Jain that includes the short range communication functionality required to conduct financial transactions. Ex. 2009 ¶69. According to Jain: "For example, the transaction card 112 may execute a contactless transaction with the POS [point of sale] device 114 *independent of* the mobile device 110a." Jain ¶[0023] (emphasis added).

Figure 3 of Jain shows an exemplary transaction card.

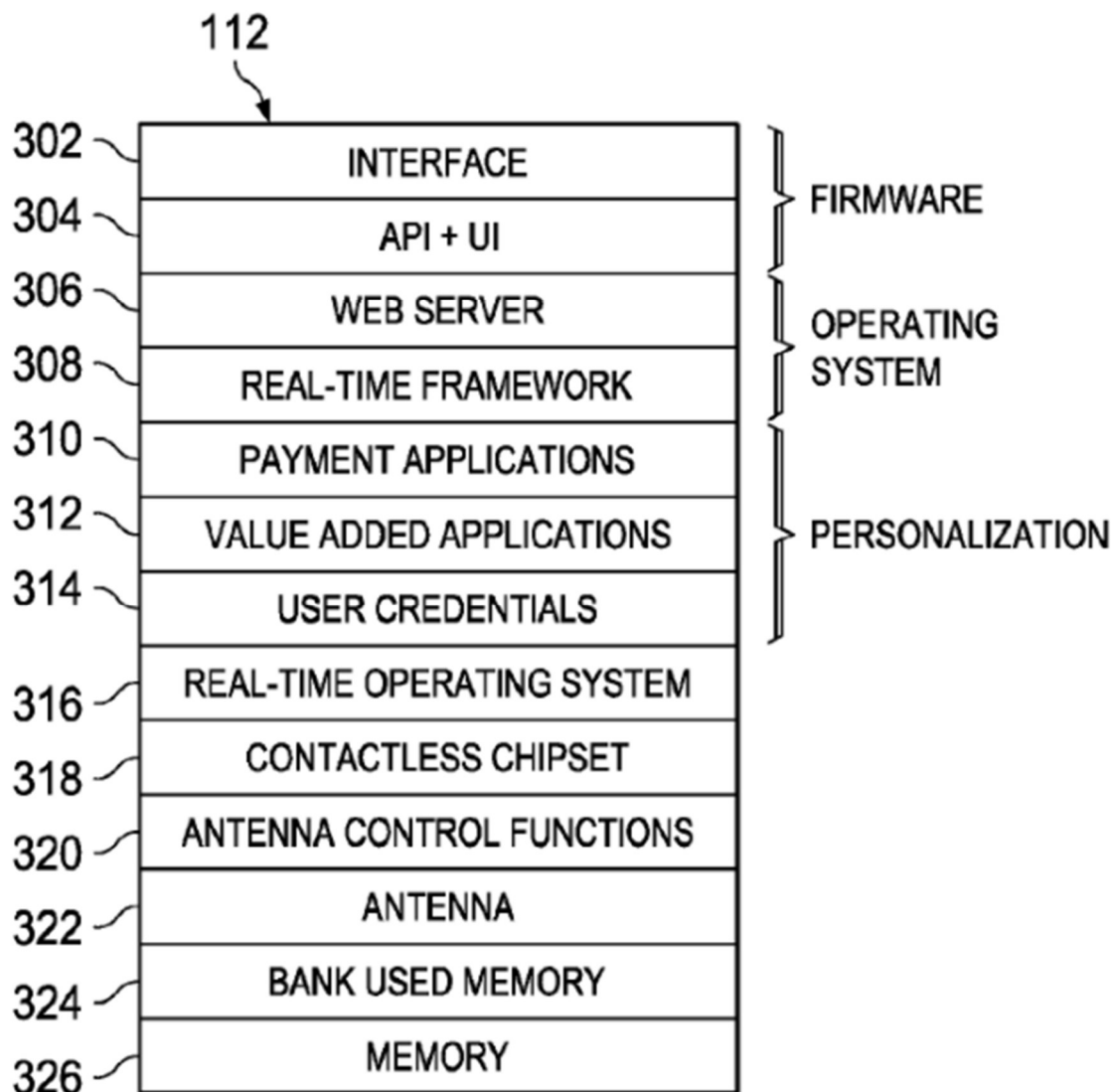


FIG. 3

Jain, Fig. 3; *see id.* ¶¶[0009], [0049].

C. Dua (Ex. 1018)

U.S. Patent Application No. 2006/0165060 to Dua is titled “Method and Apparatus for Managing Credentials Through a Wireless Network.” Dua has a filing date of January 21, 2005, and was published on July 27, 2006. Dua at 1. Dua

discloses that “[t]he ultimate goal of the present invention is to securely, accurately and rapidly distribute credentials to the proper wireless devices based upon the actions of credential issuers.” Dua ¶[0038]. Figure 2 of Dua illustrates the steps in the process for issuing a credential according to a preferred embodiment:

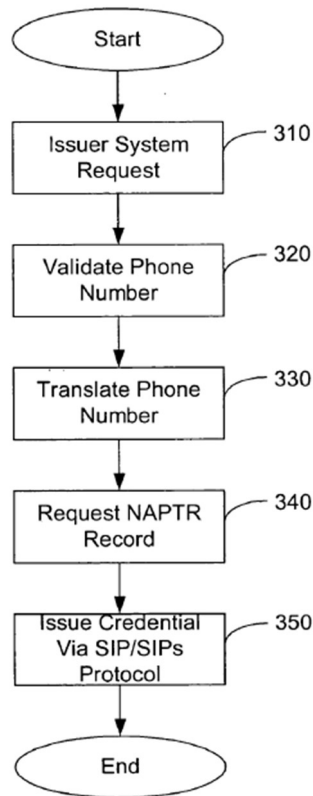


FIG. 2

Dua, Fig. 2.

Dua depends on SIP (Session Initiation Protocol). Ex. 2009 ¶82. SIP is configured to establish a communication session. *Id.* Once the communication session is established, Dua discloses another protocol, such as Real Time Protocol

(“RTP”) or Secure Real Time Protocol (“sRTP”), to transmit any data. *Id.* According to Dua:

Associated with SIP is the SDP, defined in RFC 2327. SIP is used to invite one or more participants to a session, while the SDP-encoded body of the SIP message contains information about what media encodings (for example, voice, video) the parties can and will use. After this information is exchanged and acknowledged, all participants are aware of the participants’ IP addresses, available transmission capacity, and media type. Then, data transmission begins, using an appropriate transport protocol. Typically, the RTP is used.

Dua ¶[0110].

In Dua, the issuer’s system issues the credentials and transmits the credentials to the wireless device via the Wireless Credential Manager. Dua ¶¶[0040], [0043].

IV. CLAIM CONSTRUCTION

Claim terms should be given their plain and ordinary meaning to a POSITA as of the earliest effective filing date. *See, e.g., Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1320 (Fed. Cir. 2016). “The ordinary meaning of a claim term is not ‘the meaning of the term in the abstract.’ Instead, ‘the ‘ordinary meaning’ of a claim term is its meaning to the ordinary artisan after reading the entire patent.’” *Id.* (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)).

Petitioner contends that “[n]o express constructions are required to find the ’432 Patent claims invalid.” Pet. at 7. Patent Owner agrees that the Board should apply the plain and ordinary meaning of the terms in the Challenged Claims. Patent

Owner does not waive its right to raise additional issues of claim construction in any litigation, nor does it waive any argument in any litigation that claim terms are not indefinite or are otherwise valid. The failure of the Petition to render obvious the Challenged Claims is clear in view of the arguments below without construing any specific claim term.

V. LEVEL OF ORDINARY SKILL IN THE ART

Each of the arguments below is considered from the standpoint of a POSITA in the field of the '432 Patent at the time of the invention. For purposes of this POPR, Patent Owner disputes the definition of a POSITA proposed by Petitioner. Patent Owner contends that a POSITA would have had at least a bachelor's degree in electrical engineering, computer engineering, or a related field, with about two years of experience in wireless communications. Ex. 2009 ¶41. This contrasts with Petitioner's proposal, which calls for "at least a Bachelor of Science in electrical engineering, computer engineering, or similar fields and at least two years of practical experience in the field of secure wireless communication applications." Ex. 1002 ¶82. Patent Owner disagrees that a POSITA should be required to have any experience in secure wireless communications. The claims of the '432 Patent do not have any requirement that the communications be "secure," such as encryption or encoding of the wireless communications. *E.g.*, '432 Patent at cl. 1; *see also* Ex.

2009 ¶42. Regardless, Petitioner fails to meet its burden under either POSITA definition.

VI. THE BOARD SHOULD NOT INSTITUTE *INTER PARTES* REVIEW

Both of Petitioner's grounds fail. As described below, neither Jain alone nor Dua alone—whether considered based solely on the reference's disclosures or based on the disclosures in view of a POSITA's knowledge—would have rendered obvious all elements of any of the Challenged Claims.

A. Petitioner Has Failed to Establish a Reasonable Likelihood That Jain Would Have Rendered Any of the Challenged Claims Obvious (Ground 1).

Petitioner's first ground asserts that the Challenged Claims would have been obvious over Jain (Ex. 1017). Pet. at 7-9. In this ground, Petitioner haphazardly combines disparate components and processes within Jain and draws flawed obviousness conclusions contrary to the reference's teachings to try to reach the claimed inventions of the '432 Patent. In view of the deficiencies discussed below, Petitioner failed to demonstrate a reasonable likelihood of prevailing based on Jain.

1. Jain Does Not Disclose and Would Not Have Rendered Obvious “a method of operating a smartphone in performing a plurality of financial transactions.”

Jain does not disclose or render obvious “a method of operating a smartphone in performing a plurality of financial transactions” of independent claim 1[pre] or “a smartphone that is configured to perform operations associated with a plurality of financial transactions” of independent claim 10[pre]. *See* Ex. 2009 ¶¶87-100. There

can be no dispute that the preambles of the independent claims are limiting, and thus require a “smartphone,” because the preambles provide antecedent basis for the “smartphone” recited later in the claims. *See, e.g.,* ’432 Patent, cl. 1[a] (claiming “responsive to sensing at least one parameter by at least one sensor of the **smartphone**”) (emphasis added); 10[a] (same); *see also C.W. Zumbiel Co. v. Kappos*, 702 F.3d 1371, 1385 (Fed. Cir. 2012) (“[T]he preamble constitutes a limitation when the claim(s) depend on it for antecedent basis.” (citing *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 8089 (Fed. Cir. 2002))). All dependent claims of the ’432 Patent depend from one of these two independent claims and thus include these same requirements.

Petitioner inconsistently points to distinctly described elements as comprising the claimed “smartphone” of the ’432 Patent. *See, e.g., Google LLC v. Uniloc USA, Inc.*, IPR2017-02082, Paper 10 at 13 (P.T.A.B. Mar. 29, 2018) (denying institution because “Petitioner inconsistently maps the recited ‘instant voice message’ to different elements of Zydney without sufficient explanation for this incongruity”). Petitioner incorrectly asserts that the claimed “smartphone” (and method of operating a “smartphone”) can be met by the functionality provided by Jain’s “mobile device” in some instances, and the functionality of Jain’s separate and distinct “transaction card” in other instances. For example, Petitioner states “Jain’s smartphone sends transaction response 119 identifying information associated with

a payment account to the nearby POS 114 (*entity*) using NFC.” Pet. at 24 (citing Jain ¶¶[0023], [0027], [0029]) (emphasis in original). But Jain does not disclose the participation of the mobile device in financial transactions at all. Instead, Jain ¶[0027] confirms it is just the transaction card that participates. As Jain states, “*the transaction card 112* may transmit one or more transaction responses 119 identifying information associated with a payment account.” Jain ¶[0027] (emphasis added); *see also id.* ¶[0023] (“For example, the transaction card 112 may execute a contactless transaction with the POS [point of sale] device 114 *independent of* the mobile device 110a.”) (emphasis added).

Petitioner’s misrepresentations, or at least lack of clarity, regarding Jain’s disclosures violate 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.104(b)(4). *See* 35 U.S.C. § 312(a)(3) (a petition “may be considered only if . . . the petition identif[ies], in writing and *with particularity*, . . . the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim”) (emphasis added); 37 C.F.R. § 42.104(b)(4) (the petition must “specify where each element of the claim is found in” the prior art); *see also, e.g., Google LLC*, IPR No. 2017-02082, Paper 10 at 14; *Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371, 1377 (Fed. Cir. 2023) (“Ultimately, it is the petitioner’s burden to present a clear argument.”). Petitioner’s reliance on two separate structures in Jain must fail.

The '432 Patent contemplates a *single* device capable of performing a financial transaction. Ex. 2009. ¶¶89-93. But Petitioner points to two separate pieces of hardware that purportedly meets these limitations. Pet. at 18 (pointing to the activation code for *the mobile device* as the claimed “while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted” and “receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data, the second data relating to the plurality of financial transactions to be conducted and differing from the first data”); Pet. at 20-21 (pointing to *the transaction card* as the hardware that executes transactions using NFC as the claimed “detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity”).

Petitioner also asserts that Figure 1 of Jain shows that mobile device 110a includes or incorporates transaction card 112a. Pet. at 9. But Figure 1 describes a system where the transaction card is connected to—not incorporated within—the mobile device. Ex. 2009 ¶94. Furthermore, Petitioner’s logic fails when applied elsewhere within Figure 1. Using Petitioner’s logic, because the transaction card is “incorporated within” the mobile device, the mobile device must also be incorporated within the offline store, as it appears within the mobile store in the depiction. *Id.* Under Petitioner’s logic, the mobile device within the store would

itself become a part of the store—a non-sensical result and one not contemplated by Jain. *Id.*

Contrary to Petitioner’s assertion regarding a block diagram, Jain specifically requires a *distinct* transaction card that is “*independent*” of the mobile device. Jain ¶[0076] (“The intelligent card 806 is configured to . . . execute transactions *independent of the host device 810.*”) (emphasis added); *see also id.* ¶[0023] (“[T]he transaction card 112 may wirelessly execute transactions *without aspects of the transaction being executed by the mobile device 110.*”) (emphasis added); *see also* Ex. 2009 ¶95. The transaction card alone, rather than the combination of the transaction card and mobile device, is essential to executing transactions in Jain. *See* Jain ¶[0018] (“By providing an intelligent card, the system 100 may wirelessly execute transactions”); *see also* Ex. 2009 ¶95. Because Jain describes a separate and distinct transaction card, the transaction card cannot be considered part of the mobile device; thus, Petitioner’s combination does not disclose the claimed “smartphone.”¹ *See* Ex. 2009 ¶¶94-95.

Jain specifically touts that the “mobile device 110 does not require additional hardware, software, and/or firmware” as an advantage because the transaction card

¹ Jain discloses a smartphone but even this smartphone does not include the functionality of the separate transaction card. Jain ¶[0021].

itself already has the required functionalities, such as NFC. Jain ¶[0023]; *see also id.* ¶[0018] (“An intelligent card is a device configured to . . . access or otherwise execute services (e.g., transactions) independent of the host device.”); *see also* Ex. 2009 ¶97. In fact, Jain discloses a transaction card that “include[s] any software, hardware, and/or firmware configured to wirelessly execute transactions with the POS device 114” independent of the mobile device. Jain ¶[0023] (explaining that “the transaction card 112 may include one or more chipsets that execute an operating system and security processes to independently execute the transaction”); Ex. 2009 ¶97. For example, it is only the Jain transaction card itself that includes hardware to transmit short range signals, such as NFC. Jain ¶[0023].

Next, Petitioner alleges that integrating the mobile device and the transaction card would have been obvious because “separability of the transaction card *is not always advantageous* (e.g., smartphone vendor *might find it* commercially advantageous to provide transaction-card functionality with their smartphone and not allow interoperability with other devices).” Pet. at 11 (emphasis added). Not only is this an example of gap filling by Petitioner, without a sufficient motivation to combine, but Jain in fact teaches away from any integration of its transaction card with the mobile device. Ex. 2009 ¶¶95, 97; *K/S HIMPP v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365 (Fed. Cir. 2014) (affirming the refusal to “accept a conclusory

assertion from a third party about general knowledge in the art without evidence on the record”).

Petitioner then asserts that it might not have been advantageous to have a separate transaction card because of (1) the cost of implementing an independent transaction card and (2) the possible inadvertent loss of the transaction card. Pet. at 11-12 (citing Ex. 1002 ¶¶104-105). First, Petitioner does not identify anything in Dr. Almeroth’s declaration that references a reduction in cost, likely because the cost of modifying a mobile device far outweighs the cost of a transaction card.

Regardless, Jain does not support Petitioner’s argument. Ex. 2009 ¶¶97-99. Contrary to Petitioner’s argument, Jain touts the benefit that the “mobile device 110 does not require additional hardware, software, and/or firmware” and, thus, reduces the cost of having to modify an existing mobile device. Jain ¶[0023]; *see also* Ex. 2009 ¶97. Further, Petitioner admits that Jain implements security to guard against lost transaction cards, such as by way of a PIN. Pet. at 12-13 (citing Jain ¶¶[0072], [0075], Fig. 7B). Under Petitioner’s theory, the inadvertent loss of a transaction card is simply replaced by the inadvertent loss of a mobile device, which provides no added benefit. Ex. 2009 ¶99.

Jain emphasizes, as a stated benefit of the invention, using a separate and distinct transaction card capable of executing transactions independently of the mobile device. Ex. 2009 ¶98. An independent transaction card that can perform

financial transactions offers increased versatility regarding compatible host mobile devices and reduces the cost to redesign mobile devices, which is a benefit that would be diminished if the transaction card were integrated within the mobile device. *See* Jain ¶[0021] (identifying digital cameras, pagers, MP3 players, camcorders and portable computers as possible mobile devices); *see also id.* ¶[0037] (“For example, the user may want to re-personalize the transaction card 112 *to change host devices, to have multiple host devices*, and/or other reasons.”) (emphasis added); *see also* Ex. 2009 ¶¶98, 99. Jain actually emphasizes this benefit when it states that the “mobile device 110 does not require additional hardware, software, and/or firmware to wirelessly execut[e] a transaction,” which is a benefit directly attributable to the transaction card being independent of the mobile device. Jain ¶[0023].

Jain does not disclose and would not have rendered obvious “a method of operating a smartphone in performing a plurality of financial transactions” of independent claim 1, nor the “smartphone” of independent claim 10.

2. Jain Does Not Disclose and Would Not Have Rendered Obvious “while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted.”

Under limitation 1[b] and 10[b], the claimed “transmitting” step must occur “*while* the mode [to communicate] is enabled.” In order to allege that this limitation is taught or suggested by Jain, Petitioner mixes and matches steps from two separate

and distinct processes of Jain. Pet. at 16-19. The two relevant methods of Jain are (1) method 700, which describes “automatically bootstrapping an intelligent card in response to at least insertion into a host device,” and (2) “method 900 for activating a wireless transaction system including an intelligent card.” Jain ¶¶[0072], [0080]. Thus, method 700 relates to connecting or bootstrapping the transaction card to the mobile device (because they are separate) while method 900 relates to activating the transaction card itself. In applying Jain to try to meet these limitations—i.e., the requirements that “while the mode is enabled . . . transmitting by the smartphone first data . . . requesting the authorization to establish said capability” and “receiving by the smartphone second data . . . comprising the authorization”—Petitioner continues to misinterpret the separate tasks performed by the mobile device and the transaction card in Jain by pointing to *both* method 700 and method 900 as if they were the same single continuous method. Pet. at 15-19. They are not. Ex. 2009 ¶106.

a. Turning on the Transaction Card’s Antenna Is Not the Claimed “Enabling a Mode to Communicate”

As an initial matter, Petitioner ignores the requirement of “while the mode is enabled” in limitations 1[b] and 10[b]. *See* Pet. at 16-19 (never addressing the required claim language). This oversight alone is fatal.

Regardless, even if Petitioner had addressed “while the mode is enabled,” Petitioner must be consistent with the alleged “mode to communicate.” Petitioner asserts with regard to limitation 1[a][iii] that Jain “step 714: ‘turn antenna on and

update host device signature in plug-in’” is the “claimed **enabling**” in limitation 1[a]. Pet. at 15 (citing Jain, Fig. 7A) (emphasis in original). Petitioner equates enabling the antenna of the transaction card (*see, e.g.*, Figure 7, step 714) with the claimed “enabling a mode to communicate” and, thus, requires that the antenna of the transaction card be enabled throughout the “transmitting” and “receiving” steps of the claims. Pet. at 15-16.

As Dr. Easttom points out, turning on the antenna via step 714 of method 700 cannot be the claimed “enabling a mode to communicate.” Ex. 2009 ¶104. To satisfy limitation 1[b], the smartphone must “transmit[] by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted” **while** the mode to communicate is enabled. But the Jain transaction card antenna is not involved in any alleged authorization process.² Instead, once the transaction card’s antenna is turned on by step 714 of method 700, Jain’s

² Figure 7 is described by Jain as: “FIG. 7 is a flow chart illustrating an example method 700 for automatically bootstrapping an intelligent card in response to at least insertion into a host device. In general, an intelligent card may execute one or more authentication procedures prior to activation.” Jain ¶[0072]. Activation in Figure 7 relates to activation of the antenna 714 that occurs after the various authentication options.

bootstrapped system is ready to perform financial transactions via antenna 322, not an authorization using a different antenna (the antenna on the mobile device), i.e., no while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted” and “receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data, the second data relating to the plurality of financial transactions to be conducted and differing from the first data ” occurs. *See* Jain ¶[0073] (“As for the example, the transaction card 112 **may activate the antenna for wireless transactions . . .**”) (emphasis added); *see also id.* ¶[0023] (“[T]he transaction card 112 may wirelessly execute transactions **without aspects of the transaction being executed by the mobile device 110.**”) (emphasis added); *see also* Ex. 2009 ¶¶103-116. Accordingly, step 714 of method 700, which turns on the transaction card’s antenna, does not disclose “responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information **requesting an authorization.**” ’432 Patent, cls. 1, 10.

b. Petitioner Lacks a Sufficient Motivation to Combine Elements of Distinct Method 700 and Method 900

Regardless, even using Petitioner’s own mapping (e.g., enabling the mode is turning on the transaction card’s antenna via step 714), Petitioner must show that the claimed “transmitting” step occurs **while** the antenna of the transaction card is turned

on. Petitioner cannot do so. When alleging that Jain performs the claimed “transmitting” and “receiving” steps, Petitioner pivots to a distinct method, method 900 and Figure 9, and alleges that Jain’s *mobile device* (not the transaction card or the card’s antenna 322) performs the steps of Figure 9 after a user has been authenticated and the antenna has been turned on. Pet. at 16 (“Only after bootstrapping/authentication (Figure 7) can activation (Figure 9) begin, which includes communicating with a financial institution ‘using *cellular radio technology* of the host device’” (emphasis added)). Petitioner’s pivot is problematic because method 900 is unrelated to method 700 and uses a different antenna—the antenna on the mobile device, *not* the antenna on the transaction card as in Figure 7.³ See Jain ¶[0063] (“As illustrated, the intelligent card 400 includes *an antenna 402 . . .*”) (emphasis added); see also *id.* ¶[0081] (“For example, the transaction card 112d of Fig. 2 may wirelessly transmit an activation request to the financial institution 106 *using the cellular radio technology of the mobile host device.*”) (emphasis added); see also *id.* (“If the activation code is not manually entered by the user, then at step 920, the transaction card wirelessly transmits a request for the

³ Antenna 322 on the transaction card is “a short range wireless antenna connected to an NFC inlay via a software switch such as a NAND Gate or other element.” Jain ¶[0061].

activation code using the cellular radio technology of the host device.”); *see also* Ex. 2009 ¶106. Thus, turning on the transaction card’s antenna by the process of method 700 has no bearing on method 900, and there would have been no reason to have antenna 714 enabled while performing method 900.

Petitioner does not identify any disclosure in Jain indicating that method 900 necessarily occurs after method 700 or that method 900 occurs *while* NFC antenna 322 is turned on. Ex. 2009 ¶107. And for good reason. Method 900 pertains to activating a previously inactive card or account. *See* Jain ¶[0080] (“Fig. 9 is a flow chart illustrating an example method 900 for activating a wireless transaction system including an intelligent card.”) (emphasis added); *see also id.* ¶[0081] (“Method 900 begins at step 902 where a request to activate a transaction card is received If an account activation is included”) (emphasis added); *see also* Ex. 2009 ¶107.

Petitioner attempts to cover this deficiency by pointing to paragraph [0072] of Jain, which discloses that “an intelligent card may execute one or more authentication procedures prior to activation.” Pet. at 16 (citing Jain ¶[0072]). However, the activation being described there is activation *of the transaction card’s antenna* described in the immediately following paragraph, not an unrelated activation described in a separate figure and several paragraphs later. *See* Jain ¶[0073] (“As for the example, the transaction card 112 *may activate the antenna for wireless transactions*”) (emphasis added).

A POSITA would not have been motivated to combine methods 700 and 900. *See* Ex. 2009 ¶108. Petitioner makes no attempt to combine the two methods, much less to explain why a POSITA would have been motivated to make such a combination. *Abiomed, Inc. v. Maquet Cardiovascular, LLC*, IPR2017-01204, Paper 9 at 11 (PTAB Oct. 23, 2017). Accordingly, Jain does not disclose and would not have rendered obvious the “while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted” in limitations 1[b] and 10[b].

3. Jain Does Not Disclose and Would Not Have Rendered Obvious “enabling a mode to communicate by the smartphone information requesting an authorization” and “receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data”

Limitations 1[a][ii] and 10[a] both require “enabling a mode to communicate by the smartphone information requesting an authorization.” ’432 Patent, Cls. 1, 10. Tellingly, Petitioner seems to split this limitation in two, addressing “enabling a mode to communicate” at pages 15-16 and citing to method 700 while addressing “requesting an authorization” in connection with completely different limitations (limitations 1[b] and 1[c]) at pages 16-19 and citing to method 900. Worse, Petitioner’s “enabling a mode to communicate” relates to step 714, which is enabling antenna 322 (NFC antenna) whereas “requesting an authorization” relates to steps 920 and 924, which is requesting an authorization using a different communications

mode, cellular. It is non-sensical that activating an NFC mode of communication and requesting authorization via a different cellular pathway would render the claims obvious. This further highlights Petitioner’s error, as it improperly conflates two different processes using two different communication means. *See* Section VI.A.3, *supra*.

Regardless, Petitioner points to method 900 of Jain for the claimed “second data” that is received after “requesting an authorization.” Pet. at 16-19. Method 900 describes the process of activating a card. Jain ¶[0081]; Ex. 2009 ¶110. At step 920, the transaction card, via the mobile device, “wirelessly transmits a request for the activation code using the cellular radio technology” of the mobile device to the financial institution. Jain ¶[0081]; Ex. 2009 ¶110. The transaction card then identifies a locally stored activation code at step 922 and compares this locally stored activation code to the received activation code from the financial institution at step 924. Jain ¶[0081]; Ex. 2009 ¶110. If the activation codes match, the transaction card is activated by step 926. Jain ¶[0081]; Ex. 2009 ¶110. Accordingly, it is the **transaction card** that determines whether a particular card can be used. Jain ¶[0080] (“In general, an **intelligent card** may execute one or more activation processes in response to, for example, a selection from a user.”) (emphasis added); *see also* Ex. 2009 ¶111. Because Jain’s transaction card must perform the additional step of

comparing the received activation code to a locally stored code, the received “activation code” is not itself a received “second data.” *See* Ex. 2009 ¶111.

Next, Petitioner argues that a POSITA would “understand that *receiving* the activation code *(second data) relat[es] to the plurality of financial transactions to be conducted* because the financial institution would not provide a matching activation code to a smartphone’s request unless the smartphone is authorized to perform payment services with the financial institution.” Pet. at 19 (emphasis in original). But Jain explicitly discloses that the financial institution *would* provide a valid activation code to an unauthorized user because the requested activation code must still match the locally stored code. Jain ¶[0081] (“If the provided information does not match the locally stored information, then execution ends.”); *see also* Ex. 2009 ¶¶112-113. In this express disclosure of Jain, the financial institution has provided a non-matching code. Ex. 2009 ¶113. Indeed, Jain does not require that the financial institution first verify that the user is indeed authorized before sending the activation code, which occurs at step 920. Jain ¶[0081] (“[A]t step 920, the transaction card wirelessly transmits a request for the activation code using the cellular radio technology of the host device.”). The financial institution issues the activation code regardless of whether the transaction card is authorized. *See* Jain ¶[0081]; *see also* Ex. 2009 ¶113 (“[A] POSITA would have understood that Jain allows a financial institution to send a code to an unauthorized user because the

transaction card must compare the two codes and determine that the codes match before activation occurs.”).

A POSITA would have recognized that Jain’s transaction card compares the received code with the locally stored code because Jain anticipates that institutions will receive requests from unauthorized users, such as users having fraudulent transaction cards. *See, e.g.*, Ex. 2009 ¶113 (“In response to one or more events matching or otherwise violating rules, the transaction card 112 may execute one or more processes to substantially prevent or otherwise notify the financial institutions 106 of potentially fraudulent activity.” (quoting Jain ¶[0026])). For instance, if an unauthorized user received a valid activation code, the transaction card would not be activated because the requested code and the locally stored code would not match and execution would end. *See* Ex. 2009 ¶113 (citing Jain ¶[0081]).

Petitioner fails to establish that Jain discloses or would have rendered obvious the limitations of Claims 1[a][ii], 1[c], 10[a], and 10[c]. *See* Ex. 2009 ¶¶109-116.

4. Jain Does Not Disclose and Would Not Have Rendered Obvious “detecting by the smartphone that a proximity condition is satisfied.”

Limitations 1[e] and 10[e] require “detecting *by the smartphone* that a proximity condition is satisfied.” As stated above, Jain lacks the required “smartphone” because the transaction card cannot be considered part of the separate and distinct mobile device. *See supra* § VI.A.1. But it is Jain’s transaction card that

has NFC capability that Petitioner identifies as disclosing a proximity condition. Pet. at 19-24. The Petition fails to identify “detecting *by the smartphone* that a proximity condition is satisfied” and is instead inconsistent about which aspect of Jain performs the “detecting” function required of the smartphone. Accordingly, institution should be denied. *See Google LLC*, IPR No. 2017-02082, Paper 10 at 14; *see also* Ex. 2009 ¶¶117-120.

Again, Petitioner misquotes Jain. Petitioner alleges that “[t]he *mobile device* first ‘wirelessly receive[s] a request from the POS device 114 to execute a transaction and/or . . . provide a response.’ Jain ¶[0023].” Pet. at 19-20 (emphasis added). But Jain actually says that “*the transaction card 112* may execute one or more of the following: wirelessly receive a request from the POS device 114 to execute a transaction and/or and [sic] provide a response.” Jain ¶[0023] (emphasis added); *see also* Ex. 2009 ¶119. Furthermore, Jain describes *the transaction card* as capable of “execut[ing] transactions with the POS device 114 using short range signals such as NFC.” Jain ¶[0023]; *see also* Ex. 2009 ¶119. Because the transaction card is equipped with NFC, “the transaction card 112 may wirelessly execute transactions *without aspects of the transaction being executed by the mobile device 110*.” Jain ¶[0023]; *see also* Ex. 2009 ¶119. However, the alleged “detecting” step must be performed by the smartphone rather than the transaction card. Ex. 2009 ¶119. For the same reasons as above with respect to Section VI.A.1, Jain similarly

does not disclose the claimed “detecting by the smartphone that a proximity condition is satisfied.” *See supra* Section VI.A.1.

Next, Petitioner argues that Jain renders this limitation obvious. Pet. at 23-24. However, Petitioner does not explain why a POSITA would have disregarded Jain’s teachings and added an NFC capability to the mobile device itself. *See* Jain ¶[0023]; *see also* Ex. 2009 ¶120. This is another example of an unsupported argument, particularly in view of Jain’s teaching that the mobile device and transaction card are and should remain independent. *See K/S HIMPP*, 751 F.3d at 1365. Therefore, Jain fails to disclose or render obvious “detecting by the smartphone that a proximity condition is satisfied” in independent claims 1 and 10.

B. Petitioner Has Failed to Establish a Reasonable Likelihood That Dua Would Have Rendered Any of the Challenged Claims Obvious (Ground 2).

Petitioner’s second ground asserts that the Challenged Claims would have been obvious over Dua (Ex. 1018) alone. But, for at least the reasons stated below, Petitioner’s second ground fails to establish a reasonable likelihood that Dua would have rendered the Challenged Claims obvious. Here, Petitioner hand-waves away claim limitations and gap fills holes in Dua with unsupported assertions by Dr. Almeroth. In view of the deficiencies discussed below, Petitioner has failed to demonstrate a reasonable likelihood of prevailing based on Dua.

1. Dua Does Not Disclose and Would Not Have Rendered Obvious “responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization.”

Petitioner argues that Dua would have rendered obvious limitations 1[a][i], 1[a][ii], and 10[a] under two separate theories disclosed by Dua, a “Card-Issuing” Theory and an “External-Storage-Authentication” Theory. Pet. at 48-53. But as Applicants argued during prosecution of the related ’432 Patent, and the Examiner agreed, Dua does not teach or suggest “responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization.” *See, e.g.*, Ex. 1009 at 253, 275-76. For this and for the reasons outlined below, Petitioner’s argument fails. *See* Ex. 2009 ¶¶123-133.

a. Dua’s “Card-Issuing” Theory Fails

According to Petitioner, Dua’s Card-Issuing Theory discloses that “[a]fter [a] matching PIN code or fingerprint is sensed, the wallet application is opened . . . [and] then establishes [a] Session Initiation Protocol (‘SIP’) communication session between the wireless device and the issuer’s wireless credential manager (‘WCM’).” Pet. at 51 (citing Dua ¶¶[0046], [0104], [0128], [0178]). Petitioner points to the SIP session as the claimed “enabling a mode to communicate.” *Id.*

But Petitioner ignores the critical requirement in the Challenged Claims that the “*enabling a mode to communicate* by the smartphone information requesting an authorization to establish said capability” must be “*responsive to* determining that the at least one parameter that is sensed satisfies a criterion.” Petitioner does not cite any disclosure from Dua that requires authentication to take place *prior to* establishing SIP communication. Nor could it. In fact, paragraph [0180] of Dua discloses that “*subsequent to*” establishing a SIP communication session, “the issuer’s system *will authenticate the mobile user’s identity in real-time.*” Dua ¶[0180] (emphasis added); *see also* Ex. 2009 ¶126. This is consistent with how Dua uses a PIN to authenticate a financial transaction. As a result, a POSITA, reading Dua, would have understood that communications (which are not financial transactions) use a separate authentication procedure and do not use a PIN. *See* Ex. 2009 ¶126.

Ignoring the separate and distinct authentication process in SIP, Petitioner fills the gap in Dua by erroneously contending that requiring a PIN prior to initiating SIP communications would have been obvious. Pet. at 50. But Dua undercuts Petitioner’s position because Dua never requires a PIN to start the SIP communication (Petitioner’s mode to communicate) when issuing a credential. *See* Dua ¶[0129] (disclosing initiating a SIP message exchange without first requiring a PIN); *see also* Ex. 2009 ¶126. Petitioner’s reliance on the wallet and encrypted

wallet application (Pet. at 50) is of no moment because Dua does not even require the wallet to be opened prior to SIP communications given that the use of SIP allows for the direct delivery of relevant credentials. *See* Dua ¶[0053] (“For example, a subscriber might wish to install a wallet application on wireless device 200 and register the telephone number as the identifier for the wallet application. Multiple issuers can in turn deliver payment methods, identification, or other types of electronic credentials to the wallet application on the wireless device 200 via the Internet using the phone number as the destination address.”); Dua ¶[0056] (“According to the teachings of this invention, credential issuers may request from applicants (e.g. over the telephone) a properly formatted E.164 phone number in order to target the delivery of credential(s) to a wallet application on wireless device 200.”).

Petitioner’s analysis is almost entirely focused on PIN-entry being required prior to a wallet being opened (not establishing SIP connection). Pet. at 49-50. Petitioner’s citations confirm that Dua relies on a PIN for a financial transaction, not SIP communication. *E.g.*, Dua ¶[0366] (“[d]ata in the wallet application is encrypted and protected with a special wallet PIN code which is set by the wireless device owner during the setup of the application”); ¶[0414] (“Further, online PIN verification also gives certain credential issuers a stronger means by which to validate a person's identity during a transaction”); ¶[0534] (“the user would be

required to provide a E.164 number for a wireless device in order to establish the wallet account on a server hosted and managed by the wallet service provider.”); *see also* Ex. 2009 ¶128. In fact, these citations again reference the use of a connection to provide authentication. Dua ¶[0050] (“the resolved Internet address is used to establish secure real-time communication between WCM 110 and the wallet application on wireless device 200 using the Session Initiation Protocol (SIP) . . . to transfer encrypted credentials.”). The *connection* via SIP is used to *exchange credentials* and Dua provides no support of either the opening of a wallet application or entering a separate PIN because SIP communications has its own authentication scheme. Ex. 2009 ¶¶127-128.

In addition, Petitioner’s argument addressing the claimed “mode to communicate” lacks any support. Petitioner maps the “mode to communicate by the smartphone information requesting an authorization” in this limitation to SIP communications. Pet. at 51-52. But SIP is not used to communicate the information requesting an authorization at all. Dua discloses that a separate mode to communicate—real-time transport protocol (“RTP”)—is used to request the authorization. *See* Dua ¶[0110] (“SIP is used to invite one or more participants to a session, while the SDP-encoded body of the SIP message contains information about what media encodings (for example, voice, video) the parties can and will use Then, data transmission begins, using an appropriate transport protocol.

Typically, the RTP is used.”); *see also id.* ¶[0179] (“In general, the end-to-end data packets *take a different path from the SIP signaling messages.*”) (emphasis added); *see also* Ex. 2009 ¶¶129-130.

Accordingly, Dua’s “Card-Issuing” Theory fails.

b. Dua’s “External-Storage-Authentication” Theory Fails

Petitioner also argues that, under Dua’s “External-Storage-Authentication Theory,” “[r]etrieval of credentials from the external storage is only possible after (*responsive to*) sensing a PIN code or fingerprint (*physiological parameter*) as part of opening the wallet.” Pet. at 52 (citing Dua ¶¶[0353]-[0354], [0366], [0429]; Ex. 1002 ¶227) (emphasis in original). As claimed, there is a separate “enabling” step before the authorization is requested and then received. In contrast, in Dua, to enable SIP communication between the wallet and the storage service (the alleged enabled mode to communicate), Dua requires that the “wallet application and storage service [] exchange encryption keys for secure communication.” Dua, ¶[0493]. These encryption keys include the “username/password for the wallet application to automatically access the storage area” that were established during profile setup. *Id.*, ¶[0492]. The exchange of encryption keys is part of enabling SIP communications. But Petitioner relies on the “username/password” to be first data and not part of the “enabling mode to communicate,” which is improper. Ex. 2009, ¶131. As such, Petitioner fails to establish that Dua teaches or would have rendered obvious “first

data.” Worse, “[n]o credential data or settings are retained in memory of the wireless device after a transaction is completed” (Dua ¶[0495]), further confirming that Dua did not teach and would not have rendered obvious “first data” given that first data (and second data) is related “to a *plurality* of financial transactions to be conducted.” Ex. 2009, ¶131.

Even when categorizing the mode to communicate as SIP communications (which cannot be true as shown above), Petitioner again ignores that “enabling a mode to communicate by the smartphone information requesting an authorization to establish said capability” must be “responsive to determining that the at least one parameter that is sensed satisfies a criterion.” Pet. at 47. The “mode to communicate” articulated by Petitioner is not responsive to a PIN to open the wallet. As shown above, Dua only requires a PIN “subsequent to” establishing a SIP communication session when issuing a credential. *See* Dua ¶[0180]; *see also id.* ¶[0129]; Ex. 2009, ¶132.

Accordingly, Dua’s “External-Storage-Authentication” Theory, like the “Card-Issuing” Theory, fails.

2. Petitioner Fails to Establish That Dua Discloses or Would Have Rendered Obvious “detecting by the smartphone that a proximity criterion is satisfied.”

Limitations 1[e] and 10[e] require “detecting *by the smartphone* that a proximity condition is satisfied.” Petitioner alleges that NFC communications would

meet this limitation. Pet. at 57-60 But Petitioner fails to establish that NFC communications are contemplated by Dua. Ex. 2009 ¶¶136-143. And Petitioner does not allege that it would have been obvious to implement NFC in Dua. Pet. at 57-58. Accordingly, Petitioner fails to establish that Dua discloses “detecting by the smartphone that a proximity criterion is satisfied.”

Petitioner’s sole argument is that NFC teaches or suggests “detecting by the smartphone that a proximity condition is satisfied.” Pet. at 57-58. Other than identifying NFC,⁴ Petitioner does not rely on any other radio technologies for this limitation.

But Dua only refers to NFC in the background of the technology section and never discloses that its device has such functionality. Dua ¶[0016] (“Wireless devices with integrated RFID proximity chips or Near Field Communication (NFC) technology may also provide users the ability to transfer information to a reader device.”); *see also* Ex. 2009 ¶136. Even after acknowledging the existence of NFC

⁴ Dua consistently emphasizes the application of Bluetooth. *See, e.g.*, Dua ¶¶[0321], [0458], [0463]-[0465], [0468], [0485]; *see also* Ex. 2009 ¶137. Petitioner does not allege that Bluetooth meets the claim limitations of 1[d]. Pet. at 57-60. Petitioner’s single-line reference to Wi-Fi further fails to establish that a proximity criteria is detected by the smartphone. Pet. at 59.

in the background, Dua specifically *omits* NFC entirely from the list of network protocols contemplated by the invention. Dua ¶[0041]; *see also* Ex. 2009 ¶136. In fact, in every example where Dua discusses available “wireless” protocols, Dua omits any discussion or even mention of NFC. *See* Dua ¶[0318] (“Connectivity between the wireless device and the reader/POS terminal could be made via 802.11a/b/g, Bluetooth, or other RF protocols.”); *see also id.* ¶[0457] (“The user may accomplish [transferring credentials between devices] using . . . the short-range transmission capability of both devices (e.g. Bluetooth, infra-red, etc.); *see also id.* ¶¶[0102], [0103], [0263], [0429], [0494]; *see also* Ex. 2009 ¶¶136-138.

In fact, Dua’s “local environment,” also described as the “proximity environment,” does not include consideration of, much less use of, NFC technology. *See* Dua ¶¶[0314]-[0315]; *see also* Ex. 2009 ¶140. Dua discloses the “proximity environment” as “serv[ing] as a replacement for single-purpose cards and tokens” during which the device “can transmit . . . information to a reader using the short range transmission capability of the wireless device (e.g. RF).” Dua ¶[0315]; *see also* Ex. 2009 ¶140. Dua explains that this proximity environment can allow “a wireless device loaded with a wallet application, *that also has an integrated RFID chip* can simply be waved slowly in close proximity to a reader device to facilitate a transaction.” *Id.* (emphasis added); *see also* Ex. 2009 ¶140. Here, a POSITA would have understood that Dua was specifically relying on RFID. *See* Dua ¶[0011]

(“RFID technology is typically used for POS payments, electronic toll collection, access control, and numerous other applications.”). Ignoring the specific disclosure of RFID, Petitioner summarily states that a “communicating with the POS terminal using NFC means the wireless device has *detected that a proximity condition is satisfied*” (Pet. at 57); however, Dua does not include NFC in this embodiment, and Petitioner does not provide any reason to do so.

Petitioner then argues that a POSITA would have found it obvious to detect that a proximity condition is satisfied via detecting NFC signals from a POS terminal. Pet. at 58-60. Petitioner points to claims 33, 36, and 50 of Dua as a motivation to implement NFC. *Id.* (citing Dua, cls. 33, 36, 50). But none of these claims in Dua contemplate a short-range communications protocol, let alone NFC. *See* Ex. 2009 ¶141. Dua’s claims 33 and 36 make no mention of a communications protocol. *See* Dua, cl. 33 (“The method of claim 1, wherein said credential corresponds to an account not previously opened by a customer.”); *see also id.*, cl. 36 (“The method of claim 35, wherein said electronic payment transfer is a business-to-business transfer.”); *see also* Ex. 2009 ¶141. And Dua’s claim 50 describes the wireless connection between a wireless device and *an issuer*, not a supposed NFC connection between a wireless device and a point-of-sale terminal. *See* Dua, cl. 50 (“A system for transmitting a credential *from an issuer to a wireless device . . .*”) (emphasis added); *see also* Ex. 2009 ¶141. Petitioner also points to Dua’s disclosure

of a peer-to-peer communication session as allegedly suggesting NFC communications. Pet. at 59 (citing Dua ¶[0359]). However, prior disclosures in Dua indicate that RF communications are used and not any NFC communications. *See* Dua ¶[0354] (“If a matching key is found within the wallet application, the corresponding loyalty information will be transmitted to the reader from the wireless device *via RF*.”) (emphasis added); *see also* Ex. 2009 ¶141.

After incorrectly alleging that Dua discloses using NFC in its environment, Petitioner pivots to an in-depth discussion of third-party materials regarding NFC as actually disclosing that “a proximity criterion has been satisfied between the smartphone and an entity.” Pet. at 58-60. Petitioner relies on the ECMA-340 standard as allegedly disclosing “that a proximity criterion has been satisfied.” *Id.*

Petitioner does not allege that Dua in combination with ECMA-340 would have rendered obvious this limitation. Petitioner is clear that it relies on Dua alone. Petitioner contends that “Dua discloses all limitations of the ’432 patent claims. Petitioner presents Dua as an obviousness reference in the event Patent Owner argues differences between Dua’s disclosure and the ’432 patent claims.” Pet. at 58-60. Petitioner therefore fails to allege any combination, much less that there would have been any motivation to combine Dua with the ECMA-340 standard. Petitioner also relies on mere unsupported allegations, and thus fails to establish, that the first or second editions of the ECMA 340 Interface and Protocol Standard for NFC (on

which Petitioner relies) were publicly accessible. Pet. at 21, n. 1. Petitioner does not establish that the ECMA-340 standard was “publicly accessible” prior to the priority date of the ’432 Patent, such as having been publicly accessible via websites before the priority date of the ’432 Patent. Petitioner’s Exhibit 1034, which Petitioner alleges is the 2002 version of the standard, does not have an ISBN number or any copyright information bearing a date. Ex. 1034 at 1-5; Ex. 1047 at 1-5. The dates at the top of the face of the document, and on page 5, are mere hearsay and cannot be relied on to establish the purported publication date. *See Apple Inc. v. DSS Tech. Mgmt., Inc.*, IPR2015-00369, Paper 14 at 6 (PTAB Aug. 12, 2015) (“[T]he stamped date on the face of [the reference] is a hearsay statement [and] the archive date cannot establish when, if ever, [it] became publicly available.”); *see also Laird Techs. Inc. v. A.K. Stamping Co. Inc.*, IPR2017-02038, Paper 6 at 10 (PTAB Mar. 14, 2018) (“We acknowledge that the cover page of Laird includes a date reading ‘April 1, 2010.’ . . . However, the date, is a hearsay statement”) (citation omitted); *ServiceNow, Inc. v. Hewlett-Packard Co.*, IPR2015-00716, Paper 13 at 16-17 (PTAB Aug. 26, 2015) (“To the extent that Petitioner relies on the date on the face of each exhibit and the indications of availability of these references for download . . . for the truth of that information, and considering that Petitioner has not established that any hearsay exception or exclusion applies, we agree [that the statements are inadmissible hearsay] “We are not persuaded that the presence

of a copyright notice, without more, is sufficient evidence of public accessibility as of a particular date.”) (citation omitted) (citing *LG Electronics, Inc. v. Advanced Micro Devices, Inc.*, IPR2015-00329, Paper 13 at 10–13 (PTAB July 10, 2015)). Petitioner has provided no evidence as to how a member of the interested public could have found these standards before the priority date of the ’432 Patent. Because Petitioner has failed to meet its burden to show that members of the interested public would have had access to the ECMA-340 standard, Petitioner’s efforts to indirectly rely on that standard to support Dua must fail.

Even if the Board permits Petitioner to smuggle the disclosures of the ECMA-340 standard into its allegedly single-reference obviousness ground of Dua, Petitioner does not establish that a POSITA would have had a motivation to combine Dua with the standard for NFC. Petitioner alleges that a reference to a separate RF proximity standard, ISO/IEC 14443 would have motivated a POSITA “to also look to the standard for NFC.” Pet. at. 58. But Petitioner fails to explain why a disclosure of one independent standard would have led a POSITA to seek out another. Petitioner’s argument is based entirely on hindsight.

Further, Dua’s disclosure contradicts Petitioner’s view because Dua specifically recites its own concepts for protocols that could be used for connectivity instead of relying on NFC. Ex. 2009 ¶142. For example, Dua discloses that for short-range communications, “[c]onnectivity could initially be established by exchanging

encryption keys via RFID that allow the devices to establish connectivity via an alternate channel securely so no other device can listen in to the communication. Keys could also initially be exchanged via infra-red technology.” *Id.* (quoting Dua ¶[0318]). Dua also identifies a 30-second connectivity time-out period—the type of independent connectivity requirement that would not have motivated a POSITA, reading Dua, to implement un contemplated technologies like NFC.” *Id.* These examples demonstrate that Dua was not relying on NFC.

At bottom, Petitioner relies entirely on NFC-related documents that are not part of Ground 2 to meet this limitation, tacitly admitting that Dua itself does not provide any such disclosure. Petitioner’s attempt to integrate the Dua system with NFC rests solely on a single reference to NFC in Dua’s background, which Petitioner alleges would have motivated a POSITA to disregard Dua’s explicit disclosures of separate and secure peer-to-peer communication protocols (i.e., not NFC) and instead use an NFC standard. Such a leap is not supported by Dua. *See Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993 (Fed. Cir. 2017) (“[O]bviousness concerns whether a skilled artisan not only ***could have made*** but ***would have been motivated to make*** the combinations or modifications of prior art to arrive at the claimed invention.” (quoting *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (italics in original)). Accordingly, Petitioner has not established

that Dua discloses or would have rendered obvious “detecting by the smartphone that a proximity condition is satisfied” in independent claims 1 and 10.

VII. CONCLUSION

For the foregoing reasons, institution should be denied.

Date: September 17, 2025

Respectfully Submitted

By: / Christopher TL Douglas /
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CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response to Petition totals 10,333 which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Date: September 17, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that true and correct copies of the above-captioned PATENT OWNER'S PRELIMINARY RESPONSE and Exhibits 2009-2024 its supporting exhibits were served in its entirety on September 17, 2025 via filing through the Patent Trial and Appeal Case Tracking System (P-TACTS) and electronic mail on the following counsel of record for Petitioner:

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