

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

DH INTERNATIONAL LTD.,
Patent Owner.

IPR2024-01321
Patent 7,628,333 B2

Before KARL D. EASTHOM, BRIAN P. MURPHY, and
ANDREAS BALTATZIS, *Administrative Patent Judges*.

MURPHY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Google LLC (“Petitioner”) filed a Petition pursuant to 35 U.S.C. § 311 requesting institution of *inter partes* review of claims 1–13 of U.S. Patent No. 7,628,333 B2 (Ex. 1001, “the ’333 patent”). Paper 1 (“Pet.”). DH International (“Patent Owner”) timely filed a Patent Owner Preliminary Response. Paper 8 (“Prelim. Resp.”). Pursuant to authorization from the Board, Petitioner filed a Pre-Institution Reply to Patent Owner’s Preliminary Response addressing certain arguments by Patent Owner (Paper 9), and Patent Owner filed a Pre-Institution Sur-Reply (Paper 10).

We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Under § 314, the Board may not institute review on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). If the Board institutes a review, it will institute “on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a). Upon consideration of the Petition, the Preliminary Response, the Pre-Institution Reply, Pre-Institution Sur-Reply, and the evidence of record, for the reasons set forth below, we conclude the Petitioner does not demonstrate a reasonable likelihood that it would prevail in showing the unpatentability of at least one challenged claim in the ’333 patent. Accordingly, we do not institute an *inter partes* review of claims 1–13 of the ’333 patent.

B. Real Parties in Interest and Related Matters

Petitioner, Google LLC, identifies itself as the real party in interest. Pet. 82. Petitioner also notes that “Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc.,” and “XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.” *Id.* n.6. Patent Owner, DH International Ltd., identifies itself as the real party in interest. Prelim. Resp. 1.

Petitioner identifies the following related matters:

DH International Ltd. v. Google LLC, No. 1:23-cv-01116 (W.D. Tex., Sept. 15, 2023) (voluntarily dismissed Dec. 15, 2023); and

DH International Ltd. v. Apple Inc., No. 1:23-cv-01114 (W.D. Tex., Sept. 15, 2023). Pet. 82–83.

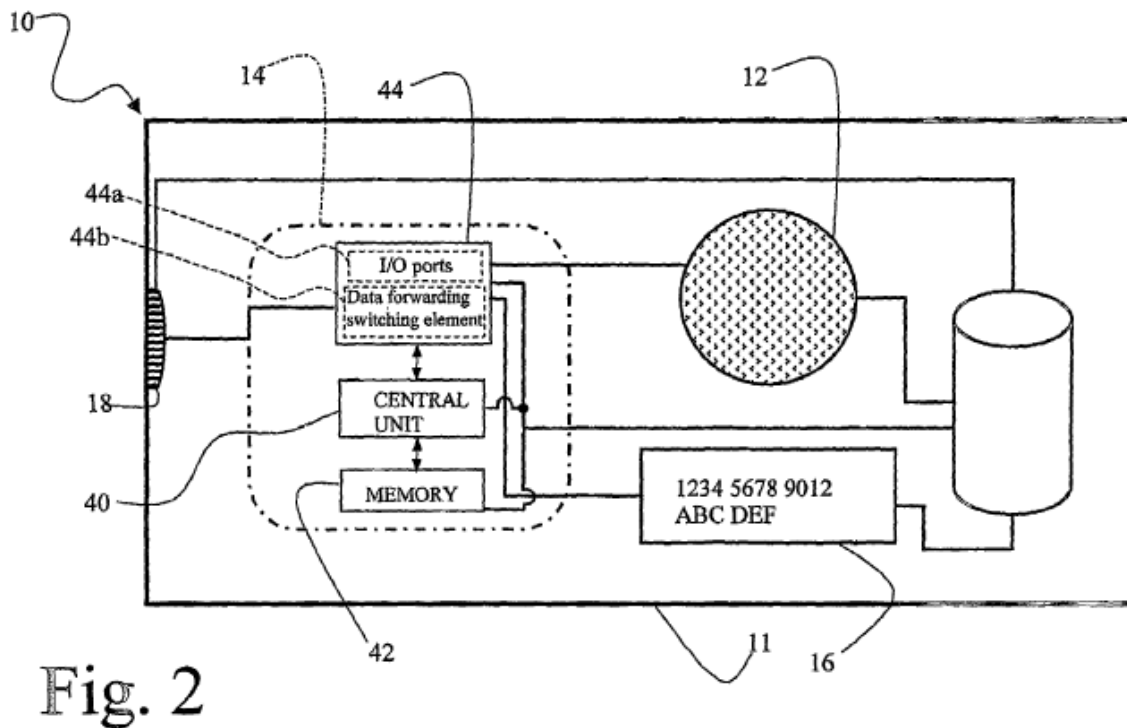
Petitioner notes that “G Holdings Ltd. previously asserted the ’333 patent in *G Holdings Ltd., v. Samsung Electronics Co., Ltd.*, No. 2:20-cv-342-JRG (E.D. Tex., Oct. 29, 2020) (voluntarily dismissed Aug. 19, 2021).” *Id.* at 83 n.7. Petitioner further identifies U.S. Patent No. 9,022,294 (“the ’294 patent”) as issuing from a continuation-in-part application claiming priority to the ’333 patent. *Id.* Petitioner states that it has contemporaneously filed an IPR petition directed to the ’294 patent, which is docketed as IPR2024-01322.

Patent Owner identifies *DH International Ltd. v. Apple Inc.*, N.D. CA, No. 3:23-cv-06185-TLT and *Apple Inc. v. DH International Ltd.* IPR2025-00172, filed December 3, 2024, as well as *Google LLC v. DH International Ltd.* IPR2024-01322, filed September 11, 2024, challenging claims 1–20 of the ’294 patent, as related matters. Prelim. Resp. 1–2; Paper 7, 2–3.

Patent Owner also identifies this IPR and *Apple Inc. v. DH International Ltd.* IPR2025-00173, filed December 3, 2024 challenging claims 1–13 of the '333 patent, as related matters. *Id.*

C. The '333 Patent

The '333 patent, titled “Portable Electronic Device Capable of Alternate Data Conveyance Operations Responsive to an Invariable Activation Command,” is directed to a portable electronic device such as “keycards, identification devices, or credit or debit devices such as the so-called smart cards.” Ex. 1001, code (54), code (57), 1:15–19. The portable electronic device is depicted in Figure 2 below:



Id. at 4:3–5, Fig. 2. In Figure 2, the portable electronic device includes control device (12) operatively connected to electronic circuit (14) connected through I/O controller 44, a user interface (16), a power means,

and a data transceiver (18).¹ *Id.* at code (57), 1:49–2:14, 4:19–30, 4:58–60. The portable electronic device “can be used for example for monetary transactions or identification purposes.” *Id.* at 4:16–18.

The control device can be a button, PIN keypad, fingerprint scanner, or “any suitable device allowing the portable electronic device holder to selectively trigger a data conveyance operation.” *Id.* at 5:5–8. If the control device includes a PIN keypad, a device holder can “type in a personal identification number (PIN) which will be compared by central unit 40 to a PIN pre-saved in memory unit 42, with a PIN match validating the portable electronic device user and triggering the data conveyance operation.” *Id.* at 5:19–26. The control device is “triggered when the portable electronic device holder has successfully accomplished the necessary steps for control device 12 to issue an activation command, for example when the PIN or fingerprint scan was authenticated.” *Id.* at 5:33–37.

The data forwarding “switching element 44b can comprise a decisional logic circuit” that “directs the data flow towards an appropriate destination” depending on whether the switching element is in “an activated state” or “an inactive state.” *Id.* at 4:26–30, 6:14–25. The state of the switching element is determined “in response to an activation cue being received by transceiver 18 or not” from a remote data exchange device (Figs. 1, 9), such as an ATM or public transportation debit machine. *Id.* at 5:47–54, 6:4–14, 8:32–41. The remote data exchange device may be “any sort of data exchange device . . . able to cooperate with transceiver 18 of device

¹ Quotations from patent documents may omit or de-emphasize bold numerals.

10.” *Id.* at 5:47–54, 7:55–67. “By default, switching element 44b is in its inactive state” until an activation cue is received. *Id.* at 6:26.

The ’333 patent states that “[t]he exact nature of this data conveyance operation will depend on the state of switching element 44b,” which depends on whether or not the switching element has received an activation cue:

More particularly, if *no activation cue is received* by portable electronic device 10, then switching element remains in its *inactive state*. Upon *control device 12 being selectively triggered by the portable electronic device holder*, data will be forwarded from electronic circuit 14 to user interface device 16, for communicating information to the portable electronic device holder.

However, upon an *activation cue being received* by portable electronic device 10, switching element 44b switches to its *activated state*. If control device 12 is selectively triggered by the portable electronic device holder while switching element 44b is in this activated state, *a data exchange will be initiated between portable electronic device 10 and the external data exchange device 9*.

Id. at 6:48–65, Fig. 2 (emphasis added). In short, element 44b can switch between alternate data conveyance pathways depending on whether or not an activation cue was received at the time the control device is triggered.

The ’333 patent describes how an electronic public transportation debit card would work. If a cardholder wants to check the amount of “pre-stored electronic money” remaining on his transportation card before entering a public transportation station, “switching element 44b is in its inactive state, i.e., not within the activation cue emission range” of a public transportation debit machine located inside the station. *Id.* at 7:55–61, 8:24–27. If the cardholder enters a PIN that is authenticated, then the control device issues an invariable activation command that triggers the switching element to convey “data from electronic circuit 14 . . . to display screen 16

to display the total amount of electronic money remaining in card memory 42.” *Id.* at 8:27–31. Because the switching element is in the inactive state, “[n]o data exchange with an external debit machine would then be attempted by [the] card.” *Id.* at 8:30–31.

When the cardholder enters the station and approaches a public transportation debit machine that “emit[s] an activation cue in the form of a predetermined contactless data transmission,” the transportation card receives the activation cue and “switching element 44b switches to its activated state.” *Id.* at 6:59–61, 7:61–8:2. If the cardholder enters a PIN that is authenticated, then “a data exchange in the form of an electronic money transaction would occur between the payment card and the debit machine” via a communication link, because the switching element is in the activated state. *Id.* at 5:44–46, 8:2–5, Fig. 1. The cardholder would then be allowed to enter the public transportation system. *Id.* at 8:32–38.

The ’333 patent states:

The present invention is thus particularly advantageous, in that the portable electronic device holder needs only trigger [the] control device to *issue an invariable activation command for either the data exchange or the data display to occur*. By means of the switching element and transceiver acting as a cue receiver, both located on portable electronic device, the proper data conveyance within portable transaction device will occur automatically upon this invariable activation command being issued.

Id. at 8:51–59 (emphasis added).

In summary, when a user selectively triggers the control device (e.g., enters a PIN that is authenticated), the control device issues “an invariable activation command . . . that would result in two different possible data conveyance operations” depending on whether the switching element has

received an activation cue (activated state) or not received an activation cue (inactive state). *Id.* at 8:32–41; *see also id.* at 5:33–39, 6:42–50, 7:15–17.

D. Illustrative Claim

Petitioner challenges all claims 1–13 of the '333 patent. Claims 1 (device), 10 (system), and 11 (method) are the independent claims. Claims 2–9 depend, directly or indirectly, from claim 1. Claims 12 and 13 depend from claim 11. Claim 1, reproduced below using Petitioner's bracketed identifiers, illustrates the claimed subject matter:

[1.pre] A portable electronic device, comprising:

[1.a] an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;

[1.b] a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered;

[1.c] a user interface device operatively linked to said electronic circuit;

[1.d.i] a data transceiver operatively linked to said electronic circuit, said data transceiver being for exchanging data between said electronic circuit and an external data exchange device, and [1.d.ii] for receiving a selectively emitted activation cue from a source external to said portable electronic device;

[1.e] a data conveyance switching element operatively linked to said electronic circuit, said switching element being in an activated state upon an activation cue having been received by said data transceiver, and being in an inactive state when no activation cue was received by said data transceiver; and

[1.f] power means for providing power to said portable electronic device;

[1.g] wherein upon said control device being selectively triggered to issue an[] invariable activation command:

[1.g.i] if said switching element is in said activated state, a data exchange will be initiated through the instrumentality of said data transceiver for exchanging data between said electronic circuit and an external data exchange device;

[1.g.ii] if said switching element is in said inactive state, data will be conveyed from said electronic circuit to said user interface

device for communicating information to the portable electronic device holder.

Ex. 1001, 9:61–10:26.

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–13 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 6–9, 11–13	103(a) ²	Ong, ³ Hoff ⁴
5	103(a)	Ong, Hoff, Palmer ⁵
10	103(a)	Ong, Hoff, Rolf ⁶

Pet. 2. Petitioner relies on the declaration of Stuart Lipoff (Ex. 1003) in support of the Petition. Patent Owner relies on the declaration of Safwan Zaheer (Ex. 2001) in support of the Preliminary Response.

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), includes revisions to 35 U.S.C. § 103 that became effective after the filing of the application that led to issuance of the challenged patent. Hence, this *inter partes* review is governed by the pre-AIA provisions of 35 U.S.C. §§ 102, 103.

³ U.S. Patent No. 7,278,581 B2 to Ong filed Feb. 16, 2001, issued Oct. 9, 2007 (“Ong”) (Ex. 1005).

⁴ Patent Cooperation Treaty (“PCT”) International Publication No. WO 1990/013096 A1 to Hoff published Nov. 1, 1990 (“Hoff”) (Ex. 1006).

⁵ U.S. Patent No. 7,337,326 to Palmer filed March 27, 2003, issued Feb. 26, 2008 (“Palmer”) (Ex. 1007).

⁶ U.S. Patent No. 7,376,583 to Rolf filed Aug. 10, 2000, issued May 20, 2008 (“Rolf”) (Ex. 1008).

II. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner contends:

A person of ordinary skill in the art (“POSITA”) at the time of the alleged invention of the ’333 patent would have had at least a bachelor’s degree in electrical engineering, or a related field, and at least two years of experience in design, development, and/or testing of network-enabled consumer devices, and familiarity with payment cards, or the equivalent, with additional education substituting for experience and vice versa.

Pet. 4–5 (citing Ex. 1003 ¶¶ 48–50). Patent Owner states that it “agrees with Petitioner on the level of ordinary skill in the art.” Prelim. Resp. 11 (citing Ex. 2001 ¶¶ 29–32).

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “These factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art.” *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). There is uncontested evidence in the record before us that reflects the knowledge and experience of a POSITA.

We adopt the parties’ agreed level of ordinary skill in the art, which is consistent with the description in the ’294 patent and the prior art of record.

B. Claim Construction

In this *inter partes* review, we apply the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). In applying this standard, we give claim terms their ordinary and customary meaning as would be understood by a POSITA at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc).

No construction of claim terms is necessary to determine whether to institute a trial in this case. *See, e.g., Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Asserted Obviousness of Claims 1–4, 6–9, and 11–13 Over Ong and Hoff (Ground 1)

Petitioner asserts claims 1–4, 6–9, and 11–13 are obvious over Ong and Hoff. Pet. 8–70 (citing Lipoff Declaration Ex. 1003 ¶¶ 62, 63, 67–182). The Petition relies on Ong as the primary reference and asserts that Ong discloses, teaches, suggests or otherwise renders obvious the limitations recited in the independent claims. *Id.* at 14–45 (claim 1), 56–65 (claim 11), 76–81 (claim 10).⁷ The Petition also argues that, to the extent Ong does not teach certain elements recited in the independent claims, the combination of Ong and Hoff discloses, teaches, suggests, or otherwise renders obvious those claim elements. *Id.*

⁷ Ground 3 in the Petition asserts that independent claim 10 is obvious over Ong, Hoff, and Rolf. Pet. 74–81 (citing Ex. 1003 ¶¶ 65, 193–207).

Patent Owner argues the Petitioner has failed to meet its burden to show a reasonable likelihood that at least one of the challenged claims is unpatentable. Prelim. Resp. 1, 16–47 (citing Zaheer Declaration Ex. 2001 ¶¶ 65–170).

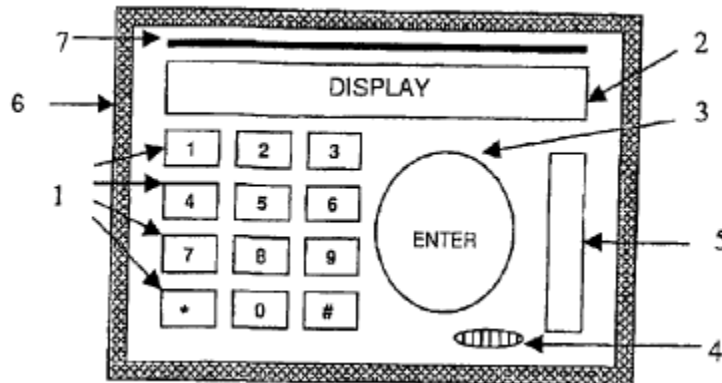
“In an *inter partes* review, the burden of persuasion is on the petitioner to prove ‘unpatentability by a preponderance of the evidence,’ 35 U.S.C. § 316(e), and that burden never shifts to the patentee.” *In re Magnum Oil Tools Int’l Ltd.*, 829 F.3d 1364, 1375 (Fed. Cir. 2016) (quoting *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015)); *see also Aqua Products, Inc. v. Matal*, 872 F.3d 1290, 1306 (Fed. Cir. 2017 (en banc (quoting *Magnum Oil*)).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)). Obviousness is resolved based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). A party who petitions the Board for a determination of obviousness must show that “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 994 (Fed. Cir. 2009) (quoting *Pfizer, Inc. v.*

Apotex, Inc., 480 F.3d 1348, 1361 (Fed. Cir. 2007)). We assess Petitioner’s evidence and argument according to the above-referenced standard. We determine that the Petition does not satisfy the reasonable likelihood of prevailing standard under 35 U.S.C. § 314(a).

1. Overview of Ong

Ong, titled “Electronic Credit Card-ECC,” is directed to “an electronic device that enables transmission/reception of data and/or digital information to/from a host computer via a Terminal Station,” such as an ATM transaction station. Ex. 1005, code (54), Abstract (code 57), 1:12–14. Figure 10 of Ong, reproduced below, depicts an electronic credit card (“ECC”). Ex. 1005, 3:15–16.



The ECC in Ong Figure 10 includes keypad 1, display 2, “enter/confirmation” button 3, audio transducer 4, and a combination of infra-red transmitter receiver 5, magnetic induction device 6, and radio frequency (RF) antenna 7 forming part of the communication means. *Id.* at 3:26–40, 4:31–34.

In operation, a user enters a PIN number “whereby the user verification means verifies that the PIN number is correct and thus the identity of the user is verified.” *Id.* at 3:51–54. After user verification, Ong’s ECC “then generates the [unique] authorisation code which is

provided . . . to the communication means which communicates [the data] to a transaction station to facilitate an electronic funds transfer transaction.” *Id.* at 3:54–59. Ong’s ECC “verifies the identity of the user before it is activated,” and if a predetermined number of PIN entries fail to activate the ECC it “will be disabled” as a fraud prevention mechanism. *Id.* at 4:51–55.

Ong’s ECC can also be disabled at a transaction station “through a system control function by the issuing company or organization.” *Id.* at 4:59–62. Disabling the ECC “will enable immediate termination of [the] electronic credit card if required.” *Id.* Ong further teaches that, if an ECC is disabled, only “[a]n authorising distributor or other authorised body could re-initialise the electronic credit card through a controlled management system used to issue the electronic credit card.” *Id.* at 4:55–58.

2. *Analysis of Ong and the Independent Claims*

Petitioner relies on an unpersuasive reading of Ong in an effort to fit a square peg into a round hole. The fundamental premise of the Petition—that Ong’s disablement means is a “*data conveyance switching element*”—is at odds with the disclosures in Ong and the ’333 patent. Pet. 33-35, (citing Ex. 1003 ¶¶ 112–113; Ex. 1005, 1:65–2:3, 4:46–58), 61, 80. We address the Petition’s arguments when attempting to read Ong onto select limitations recited in independent claim 1, below.⁸

a. The asserted “data conveyance switching element” in Ong

Claim 1 recites:

A portable electronic device, comprising . . .

[1.e] *a data conveyance switching element* operatively linked to said electronic circuit, said switching element being *in an activated state*

⁸ Our analysis applies equally to the corresponding limitations recited in independent claims 10 and 11.

upon an activation cue having been received by said data transceiver, and being *in an inactive state when no activation cue was received by said data transceiver*; . . .

[1.g.] wherein upon said *control device being selectively triggered* to issue and [said]⁹ *invariable activation command*:

[1.g.i] if said switching element is in said activated state, a data exchange will be initiated through the instrumentality of said data transceiver for exchanging data between said electronic circuit and an external data exchange device;

[1.g.ii] *if said switching element is in said inactive state, data will be conveyed from said electronic circuit to said user interface device* for communicating information to the portable electronic device holder

As stated above, the '333 patent describes the claimed “*data conveyance switching element*” in limitation [1.e] as a data forwarding switch that conveys data between alternate pathways depending on whether or not an activation cue was received at the time the control device is triggered. Ex. 1001, 6:4–7, 6:48–65, Fig. 2 (emphasis added). For example, if an electronic payment card user enters a verified PIN at a time when an activation cue is received, the device is in the “*activated state*” and a payment transaction will occur. If the users enters a verified PIN when no activation cue is received, the device is in the “*inactive state*” and a payment transaction will not occur, but the control device still issues an invariable activation command and the switching element will convey data through an alternate path, e.g., to display the amount of electronic money remaining in

⁹ Limitation [1.g] appears to contain a typographical error. See Ex. 1001, 2:4–6 (“said control device being selectively triggered to issue said invariable activation command”), 5:33–36 (“control device 12 to issue an activation command”), 6:42–44 (“upon control device 12 being selectively triggered . . . an activation command will be issued by control device 12”) (emphases added).

memory on the electronic payment card. *Id.* at 8:24–29. In either case, the electronic payment card must be functional so the user can trigger the control device to issue an invariable activation command.

Ong’s ECC works in a different way. When a user enters a verified PIN in Ong, an authorization code issues to facilitate an electronic funds transaction. If an incorrect PIN is entered a predetermined number of times, the ECC is disabled to prevent unauthorized use for electronic funds transactions. The Petition argues that Ong’s means for disabling the ECC places the ECC in the “*inactive state*” of the data forwarding switching element described and claimed in the ’333 patent. Pet. 33–35.

In particular, the Petition makes the curious argument that Ong’s ECC must be disabled, i.e., non-functional, and then re-initialized in order to act as a “*data conveyance switching element*” recited in limitation [1.e]:

Ong’s “disablement means [(data conveyance switching element)] is activatable remotely by an issuer of the electronic credit card or other authority” and “*disabl[es] use of the electronic credit card.*” When in a disabled state, “[a]n authorising distributor or other authorised body could re-initialise the electronic credit card.” A POSITA would have recognized that Ong’s disablement means is in one of two states: a first state in which the disablement means has not been triggered (activated state) or a *second state in which the disablement means has been triggered (inactive state)*.

When Ong’s disablement means (data conveyance switching element) is in the inactive state and no signal to “re-initialise the electronic credit card” is received, *it would remain in the inactive state (preventing the credit card from being used)*.

Pet. 33–34 (citing Ex. 1003 ¶ 112; Ex. 1005, 1:65–2:3, 4:46–58) (emphasis added). The Petition expressly acknowledges that in the “*inactive state*” Ong’s ECC is disabled thereby “preventing the credit card from being used.” *Id.* Lost in the shuffle is a persuasive rationale of how a user would

selectively trigger the control device in Ong’s disabled ECC (the “*inactive state*” prior to re-initialization) to issue an invariable activation command needed to convey data through an alternate pathway on the ECC device.

Ong’s disablement means is akin to an on/off switch, rather than a data conveyance switch that alternates between data conveyance pathways in response to whether or not an activation cue is received. Prelim. Resp. 27 (citing Ex. 2001 ¶ 73), 29 (citing Ex. 2001 ¶ 79). Both experts agree that Ong teaches the ECC is disabled after “a predetermined number of attempts [to] verify the identity of the user fail” or “at a transaction station through a system control function.” Ex. 1005, 1:65–2:3, 4:51–62; *see also* Ex. 1003 ¶¶ 62 (“The [ECC] also includes a ‘disablement means’ for disabling use of the electronic credit card remotely by a card issuer or other authority”), 112 (“Ong explains its ‘disablement means’ . . . ‘disables use of the electronic credit card.’); Ex. 2001 ¶ 96 (“Once disabled, the electronic credit card [of Ong] is not working and does not have the ability to take any actions or to conduct a transaction.”). Therefore, the record evidence establishes that Ong’s disabled ECC is switched “off” in the “*inactive state*” and will not function until an “authorized body could re-initialise the electronic credit card through a controlled management system.” *Id.*

We also credit the testimony of Mr. Zaheer that a “POSITA would understand that disabling the electronic credit card of Ong refers to the functioning of the credit card and not switching between data or data flows within the credit card as claimed in the ’333 patent.” Prelim. Resp. 33 (citing Ex. 2001 ¶ 95). Mr. Zaheer’s testimony is consistent with the disclosures in Ong and the ’333 patent and with Mr. Lipoff’s testimony. *See* Ex. 1003 ¶ 62 (“The card also includes a ‘disablement means’ for *disabling use of the electronic credit card* remotely by a card issuer or other

authority.”) (emphasis added). We agree with Patent Owner that “what Ong describes is not the state of the claimed switching element because once disabled, the card cannot be reenabled; rather, it must be re-initialized.” Prelim. Resp. 34–35 (citing Ex. 2001 ¶¶ 99–100). Thus, we fail to see how Ong teaches or suggests the “*data conveyance switching element*” recited in limitation [1.e].

b. The asserted “control device being selectively triggered to issue [said] invariable activation command” in Ong

The Petition also does not explain persuasively how Ong’s disabled ECC (in the asserted “*inactive state*” prior to re-initialization) could verify a device holder’s PIN or otherwise verify the user to selectively trigger generation of an authorization code—the “*control device being selectively triggered to issue [said] invariable activation command*” recited in limitation [1.g]. Pet. 21–22 (citing Ex. 1003 ¶¶ 88–89), 40–42 (citing Ex. 1003 ¶¶ 123–127).

Ong discloses that a user PIN must be verified before the ECC will generate and issue a unique authorization code to complete an electronic funds transaction. Ex. 1005, 3:50–62 (“verifies that the PIN number is correct . . . *then generates* the authorisation code”) (emphasis added). Ong expressly states the ECC “verifies the identity of the user *before* it is activated,” so as to prevent unauthorized fraudulent transactions. *Id.* at 4:51–55 (emphasis added). As pointed out by Patent Owner, “If Ong describes disabling the ECC as to put [it] in the inactive state, then no action is taken by the ECC, and no authorization code can be generated by the user verification means.” Prelim. Resp. 37–38; Ex. 2001 ¶ 109; *see also* Ex. 2001 ¶ 112 (“if the PIN is invalid, the code (the purported invariable activation command) is not created”). In contrast, when the device claimed

in the '333 patent is in the “*inactive state*” it is not disabled. In the “*inactive state*,” “[u]pon [the] control device being selectively triggered by the portable electronic device holder, data will be forwarded from [the] electronic circuit to [the] user interface device, for communicating information to the portable electronic device holder.” Ex. 1001, 6:42–57; *see also id.* at 5:5–32, 8:24–29.

The Petition attempts to address the challenges articulated above, but we are not persuaded. For example, the Petition relies on the following parsed quote from the '333 patent in support of its argument:

While the “control device 12 may include more than one button, biometric parameter detector, etc.” and the “invariable activation command will trigger alternate data conveyance operations” depending on the “reception or non-reception of an activation cue, ... the initial activation command *will not depend on the reception or non-reception of an activation cue.*”

Pet. 21–22 (citing Ex. 1001, 7:30–54) (emphasis added). The Petition then argues that “*Ong* discloses the same” and makes the following leap:

Once the user's identity has been validated by the user verification means, a unique authorization code is generated. Ong, 3:51-59. This authorization code is an “invariable activation command” because it is automatically and inevitably generated once the user is verified. Ong does not indicate the user verification is dependent on the disablement means (§VI.A.3.g ([1.e])). Id. It would have been obvious for the disablement means to prevent the “authorization code” (invariable activation command) from being “provided ... to the communication means” as this would prevent it from being “communicate[d] ... to a transaction station to facilitate an [EFT] transaction.” Lipoff, ¶89. *The authorization code is the same regardless of whether the card is in an activated or inactive state (i.e., regardless of whether an “activation cue was received”). Id.; §VI.A.3.f ([1.d.ii])).*

Id. (emphasis added). As we understand the argument, Petitioner asserts that even though Ong’s ECC is disabled and non-functional in the “*inactive state*” (prior to re-initialization), the disabled ECC would somehow still verify a user to permit issuance of an authorization code because “Ong does not indicate the user verification is dependent on the disablement means.” *Id.*

[T]he Petition’s argument is unavailing. Ong expressly states that the ECC “verifies the identity of the user *before* it is activated,” so as to prevent unauthorized fraudulent transactions. Ex. 1005, 4:51–55 (emphasis added). If the ECC is disabled because a predetermined number of verification attempts failed, it is common sense that the ECC did not verify the user, which must be done before an authorization code is generated and issued. Thus, the Petition fails to establish how a user of Ong’s disabled ECC in the “*inactive state*” (prior to re-initialization) would selectively trigger an invariable activation command necessary for executing a data conveyance operation.

Patent Owner, moreover, demonstrates that Ong does indicate user verification is dependent on the disablement means. Prelim. Resp. 27–28 (citing Ex. 1005, 1:65–2:3, 4:51–58; Ex. 2001 ¶ 74). Patent Owner and Mr. Zaheer emphasize the following statements in Ong:

Preferably the electronic credit card includes a disablement means for *disabling use of the electronic credit card* if a predetermined number of attempts [to] *verify the identity of the user fail*. Preferably the disablement means is activated remotely by an issuer of the electronic credit card or other authority. [emphasis added];

The electronic credit card *verifies the identity of the user before it is activated*. The electronic credit card *will be disabled if a predetermined number of attempts to gain access to its operation fail* and this will prevent fraud in the event that an electronic credit card is stolen. An authorising distributor or other

authorised body could re-initialise the electronic credit card through a controlled management system used to issue the electronic credit card. [emphasis added].

Id. (citing Ex. 1005, 1:65–2:3, 4:51–58; Ex. 2001 ¶ 74). The record demonstrates that if Ong’s ECC is disabled and not functional because a predetermined number of verification attempts failed, as stated in Ong and acknowledged by the Petition and both experts, then Ong *does* indicate user verification is dependent on the disablement means.

We further agree with Patent Owner and Mr. Zaheer that a POSITA would understand that “if the ECC of *Ong* is disabled due to failed verification attempts, then the card is deactivated and the following ’333 patent claim step (limitation [1.b]) cannot occur:

a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered.

Prelim. Resp. 28 (citing Ex. 1001, 9:65–10:2). Again, Patent Owner and Mr. Zaheer correctly note that Ong’s ECC “is disabled *before* the invariable activation command is generated.” *Id.* (citing Ex. 1005, 4:51–58; Ex. 2001, ¶ 75) (emphasis added).¹⁰ Thus, if Ong’s ECC is disabled in the “*inactive state*” (prior to re-initialization), any attempted user verification will fail and a unique authorization code will not be generated, such that the “*control device*” will not be “*selectively triggered to issue an[] invariable activation command*” as recited in limitation [1.g].

Therefore, we determine Petitioner has not adequately supported the assertion that “Ong does not indicate the user verification is dependent on

¹⁰ The user cannot re-initialize or re-enable Ong’s ECC; that is done remotely by the card issuer or other authority. Ex. 1005, 4:51–58; Ex. 2001 ¶ 75.

the disablement means” such that a disabled ECC would be able to verify a user and generate an authorization code.

3. *The Petition’s reliance on Ong and Hoff*

The Petition’s reliance on the combination of Ong and Hoff does not cure the deficiencies of Ong addressed above.

We start by repeating the Petition’s acknowledgement that when Ong’s disablement means (data conveyance switching element) is in the inactive state and no signal to “re-initialise the electronic credit card” is received, it would remain *in the inactive state (preventing the credit card from being used)*.

Pet. 34 (emphasis added). The Petition similarly acknowledges that

Hoff’s circuitry has two states: a first state in which the “open to buy” status is set (activated state) and a second state in which the “open to buy” status is not set and *the card is disabled (inactive state)*.

Id. at 37 (citing Ex. 1003 ¶ 116; Hoff Ex. 1006, 15:1–18) (emphasis added). Hoff, much like Ong, addresses the problem of unauthorized use of a stolen ECC, which Hoff solves by adding circuitry to “update or deactivate a credit card from a remote location” using point-to-point radio communication. Ex. 1006, Abstract code (57), 6:7–10. The Petition posits that Hoff’s ECC, like Ong’s, is either activated or deactivated (the asserted “*inactive state*”) such that “the card is disabled” and must be “re-authorized” remotely to permit further use. Pet. 37; Ex. 1006, 6:7–18 (“possible to update or deactivate a credit card from a remote location”); 15:1–9 (“sequence of numbers either resets the card’s ‘open to buy’ limit or it deactivates the card”).

The Petition also recognizes that “Hoff’s keyboard is used to verify a user” and that, like Ong, Hoff’s ECC “will not work unless the correct PIN is verified.” Pet. 24 (citing Ex. 1006, 4:16–5:7, 10:6–13; Ex. 1011, 36–38). As stated in the Shogase reference cited in the Petition: “At certain stages of

operation, a very smart card simply will not work unless the correct PIN is verified by an access control software module in the security management program.” Ex. 1011, 38 (col. 1). Thus, the Petition’s position, that a disabled ECC in the asserted “*inactive state*” (prior to re-initialization) can act as a “*data conveyance switching element*,” depends on the ability to verify a user (e.g., verify a PIN) in order to generate an authorization code (the asserted “*invariable activation command*”) in the “*inactive state*,” a proposition not supported by the record evidence cited in the Petition.

The Petition further argues that a

POSITA would have been motivated to substitute and/or improve Ong’s disablement means with Hoff’s logical circuitry and means for activating/deactivating the device to achieve advanced functionality such as remotely updating the “open to buy” limits or to “prevent a thief from inhibiting deactivation of the card by shielding it from radio communications”—improvements to Ong that would have been readily recognized by a POSITA.

Pet. 37 (citing Ex. 1003 ¶ 117; Ex. 1006, 6:1–18; Pet. §VI.A.2 (11–14)).

The argument quoted above, however, still does not address the deficiency of the Petition in explaining how or why a user with a disabled ECC in the asserted “*inactive state*” (prior to re-initialization) would be able to generate an authorization code (the asserted “*invariable activation command*”) to trigger a display of Hoff’s VOID message on the ECC. Pet. 13–14 (citing Ex. 1003 ¶¶ 71–72; Ex. 1006, 5:15–17, 5:19–6:18, 6:12–18, 8:22–9:1), 37–

38 (citing Ex. 1003 ¶¶ 115–117; Ex. 1006, 5:19–6:18, 8:22–9:1, 14:3–13, 15:1–18); Pet. 41–45 (citing Ex. 1003 ¶¶ 128, 131–133).

We are further persuaded by the Preliminary Response that the Petition’s argument on this point is inherently contradictory. Patent Owner highlights Petitioner’s argument on page 45 of the Petition:

At [the] very least, when combined with Hoff, it would have been obvious for Ong’s display to present the “VOID” indicator or other “appropriate note” disclosed in Hoff as an indication no transaction was completed upon Ong’s PIN entry (selective triggering).

Prelim. Resp. 37 (quoting Pet. 45). Patent Owner then asserts, correctly, that the quoted argument from Petition page 45 contradicts the Petition’s argument on page 34:

A POSITA would have recognized that Ong’s disablement means is in one of two states: a first state in which the disablement means has not been triggered (activated state) or a second state in which the disablement means has been triggered (inactive state). Lipoff, ¶112.

Id. (citing Pet. 34). Patent Owner emphasizes that when Ong’s disablement means is triggered, as argued in the Petition, it is in

the second state in which the disablement means has been triggered (inactive state). If *Ong* is described by Lipoff as disabling the ECC as to put in the inactive state, then no action is taken by the ECC, and no authorization code can be generated by the user verification means. First, ignoring the fact the ECC is disabled, the message displayed is in response to the “a user verification.” But, the “code” is only generated if the user is verified. *See* Exh. 1005 3:51–59.

Id. (citing Ex. 2001, ¶ 109). We agree. The Petition’s argument on this point is inherently contradictory and unpersuasive.

Patent Owner also demonstrates that Hoff teaches “a one-way communication path with the card device that only has a receiver to receive

the FM broadcast signals,” rather than the recited “*data transceiver . . . for receiving a selectively emitted activation cue*” as recited in limitations [1.d] and [1.e]. Prelim. Resp. 32–33 (citing Ex. 2001 ¶¶ 56–57, 91), 35–36 (citing Ex. 2001 ¶¶ 103–107). We credit Mr. Zaheer’s testimony that given the great “component size and power requirements for an FM transmitter or transceiver . . . a POSITA would understand that it would not be possible” to put an FM transceiver on an ECC. Ex. 2001 ¶ 105. The upshot is that the Petition does not sufficiently address how Hoff’s FM point-to-point receiver would be incorporated into a combined Ong-Hoff ECC where an “*activation cue*” is “*received by said transceiver*” as part of the “*data conveyance switching element*” recited in limitation [1.e].

In summary, the Petition does not rely on Hoff to address the inherent inconsistency of how a card user holding a disabled ECC in the asserted “*inactive state*” (prior to re-initialization) would selectively trigger an authorization code (the asserted “*invariable authorization command*”) to convey data by an alternate route (when not in the “*active state*”), such as Hoff’s display of a VOID message. Our reading is that the Petition relies on the unpersuasive argument addressed above, in section II.C.2.b., that “Ong does not indicate the user verification is dependent on the disablement means.” Pet. 22. The Petition does not rely on Hoff to cure the user verification problem when the ECC is disabled or otherwise explain how Hoff’s FM point-to-point receiver, rather than the recited “*transceiver*,” would work in combination with Ong in a disabled “*inactive state*.”

For the reasons given above, the Petition fails to establish how Ong, alone or in combination with Hoff, discloses, teaches, suggests, or otherwise renders obvious “*a data conveyance switching element*” that “*selectively trigger[s] . . . [said] invariable activation command*” to execute the claimed

data conveyance operation when “*in an inactive state when no activation cue was received by said data transceiver.*”

4. Conclusion

In conclusion, for the reasons given above, the Petition does not adequately support the assertion that Ong, or Ong in combination with Hoff, discloses, teaches, suggests, or otherwise renders obvious independent claims 1, 10 and 11. Therefore, the Petition does not demonstrate a reasonable likelihood Petitioner would prevail in showing claims 1–4, 6–9, and 11–13 are obvious over Ong and Hoff. *See, e.g., Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1365 (Fed. Cir. 2008) (“[D]ependent claims are nonobvious if the independent claims from which they depend are nonobvious.”).

D. Asserted Obviousness of Claim 5 Over Ong, Hoff, and Palmer (Ground 2) and Claim 10 Over Ong, Hoff, and Rolf (Ground 3)

The Petition’s obviousness analyses for claim 5, depending from claim 1 (Ground 2), and independent claim 10 (Ground 3) do not address the deficiencies of Ong and Hoff discussed above regarding independent claim 1. As a result, the Petition has not demonstrated a reasonable likelihood Petitioner would prevail in showing that claims 5 and 10 are unpatentable over Ong, Hoff, and Palmer (Ground 2) or Ong, Hoff, and Rolf (Ground 3).

III. CONCLUSION

For the foregoing reasons, we determine Petitioner has not established a reasonable likelihood of prevailing in its challenge to the patentability of claims 1–13 in the ’333 patent. Therefore, we deny institution of *inter partes* review of the challenged claims.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, that the Petition is denied and *inter partes* review is not instituted.

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