UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,

Patent Owner.

Case No. IPR2024-01090
U.S. Patent No. 10,725,581

PETITIONER'S NOTICE OF APPEAL

Pursuant to 28 U.S.C. § 1295(a)(4)(A), 35 U.S.C. §§ 141(c), 142, and 319, and 37 C.F.R. §§ 90.2(a), 90.3, and Federal Circuit Rule 15(a)(1), Apple Inc. ("Petitioner") provides notice that it appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision of the Patent Trial and Appeal Board ("Board") entered January 6, 2026 (Paper 27), and from all underlying and related orders, decisions, rulings, institutions, and opinions regarding U.S. Patent No. 10,725,581 ("the '581 patent") at issue in *Inter Partes* Review No. IPR2024-01090. This notice of appeal is timely filed because it is filed within 63 days of the January 6, 2026 Final Written Decision.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), the expected issues on appeal include, but are not limited to: the Board's determination that Petitioner did not establish that claims 1-3, 21, 29-31, 42-44, 54, and 62-65 of the '581 patent are unpatentable and all other issues decided adversely to Petitioner in any orders, decisions, rulings, or opinions in this proceeding.

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a), a copy of this Notice is being filed with the Director of the United States Patent and Trademark Office and with the Patent Trial and Appeal Board. In addition, a copy of this Notice and the required docketing fees are being filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit via CM/ECF.

Dated: March 9, 2026

Respectfully submitted,

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CERTIFICATE OF SERVICE AND FILING

I hereby certify that on March 9, 2026, in addition to being filed and served electronically through the Patent Trial and Appeal Board's P-TACTS System, this NOTICE OF APPEAL is being provided to the Director of the USPTO by electronically filing to the email address as follows:

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I also hereby certify that on March 9, 2026, this NOTICE OF APPEAL and the requisite docketing fees were filed with the Clerk's Office of the United States Court of Appeals for the Federal Circuit via CM/ECF.

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Paper 27
Date: January 6, 2026

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
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SMITH INTERFACE TECHNOLOGIES, LLC,
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IPR2024-01090
Patent 10,725,581 B1

Before JAMESON LEE, MIRIAM L. QUINN, and SHARON FENICK, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Apple Inc.[1] ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–3, 21, 29–31, 42–44, 54, and 62–65 (the "challenged claims") of U.S. Patent No. 10,725,581 B1 (Ex. 1001, "the '581 patent"). Smith Interface Technologies, LLC[2] ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp."). After considering the merits of the Petition and Patent Owner's arguments against institution, the Board instituted *inter partes* review. Paper 8 ("Decision on Institution" or "Dec. on Inst.").

During the trial phase, Patent Owner filed a Response (Paper 14, "PO Resp."), Petitioner filed a Reply (Paper 18, "Reply"), and Patent Owner filed a Sur-reply (Paper 19, "Sur-reply"). The oral hearing was held on October 15, 2025, the transcript of which has been entered in the record. Paper 26 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. We issue this Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons explained below, we conclude that Petitioner has not shown by a preponderance of the evidence that the challenged claims of the '581 patent are unpatentable. *See* 35 U.S.C. § 316(e) (2018).

II. BACKGROUND

The '581 patent is involved in district court litigation: *Smith Interface Technologies, LLC v. Apple Inc.*, Case No. 3-23-cv-01187 (S. D. Cal.), filed June 27, 2023. Pet. 67; Paper 3, 1. This patent's title is, "Devices, Methods

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1 Petitioner identifies only itself as real party in interest. Pet. 87.
2 Patent Owner identifies only itself as a real party in interest. Paper 3, 1.

and Graphical User Interfaces for Manipulating User Interface Objects with Visual and/or Haptic Feedback," and states that "[e]mbodiments of the present invention generally relate to touch screens." Ex. 1001, 1:38–39. The '581 patent describes a mobile device having a touch screen, among other components. Ex. 1001, 13:61–14:11. Figure 18 of the patent is reproduced below.

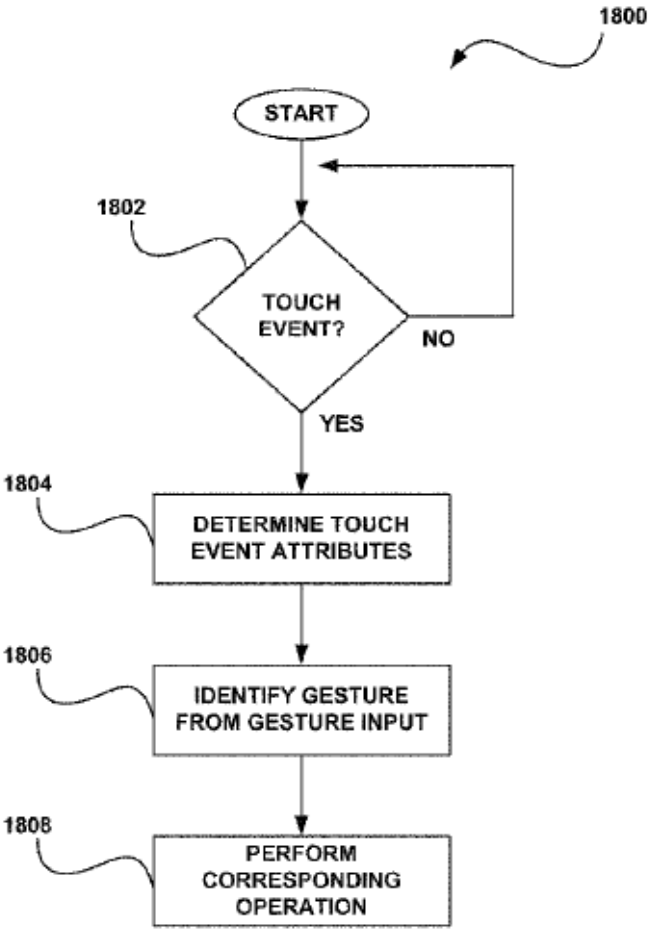


Figure 18 of the '581 patent is a flow chart depicting decision diamond 1802, "Touch Event?"; step 1804, "Determine Touch Event Attributes"; step 1806, "Identify Gesture From Gesture Input"; and step 1808, "Perform Corresponding Operation." *See* Ex. 1001, 56:24–57:10.

Among other things, the detected attributes of a gesture can include the duration of a contact. Ex. 1001, 56:37–60.

A. Illustrative Claim

Of the challenged claims, claims 1 and 42 are independent claims. Claim 1 below is illustrative and has been formatted to include labels mirroring those referenced in the parties' briefing.

[1.pre] An electronic device, comprising:

[1.a] a display;

[1.b] a touch-sensitive interaction surface;

[1.c] an actuator;

[1.d] one or more processors;

[1.e] memory; and

[1.f] one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions to:

[1.g] display, on the display and via a user interface of a network browser application, a first web page including a hyperlink that identifies a second web page;

[1.h] detect a first contact starting at a first contact point at a first contact time on the touch-sensitive interaction surface;

[1.i] detect an end of the first contact at a second contact time;

[1.j] determine a duration of the first contact as a difference between the first contact time and the second contact time;

[1.k] determine whether there is a contact movement of the first contact between the first contact point and a second contact point;

[1.l] determine whether the first contact point of the first contact corresponds with a location of the hyperlink of the first web page;

[1.m.i] when: the first web page is displayed via the user interface of the network browser application, [1.m.ii] the duration of the first contact is determined to be less than a first user-configurable predefined duration, and the end of the first contact is detected: [1.m.iii] avoid display, on the first web page, a result of any operation based on the first contact;

[1.n.i] when: the first web page is displayed via the user interface of the network browser application, [1.n.ii] the duration of the first contact is determined to be greater than the first user-configurable predefined duration and less than a second user-configurable predefined duration, [1.n.iii] the first contact point of the first contact is determined to correspond with the location of the hyperlink of the first web page, [1.n.iv] it is not determined that there is the contact movement of the first contact between the first contact point and the second contact point, and [1.n.v] the end of the first contact is detected: [1.n.iv] replace the display of the first web page with the second web page via the user interface of the network browser application; and

[1.o.i] when: the first web page is displayed via the user interface of the network browser application, [1.o.ii] the duration of the first contact is determined to be greater than the second user-configurable predefined duration, [1.o.iii] the first contact point of the first contact is determined to correspond with the location of the hyperlink of the first web page, [1.o.iv] it is not determined that there is the contact movement of the first contact between the first contact point and the second contact point, and [1.o.v] the end of the first contact is not detected: [1.o.vi] output, utilizing the actuator, a first feedback that is perceptible by touch and [1.o.vii] display a menu including at least one option for, in response to detection of a selection thereof, performing an operation on a web address associated with the hyperlink of the first web page, and [1.o.viii] further display at least a portion of the second web page, such that at

> least the at least portion of the second web page is displayed in at least one first virtual display layer which appears above at least one second virtual display layer that includes at least a portion of the user interface of the network browser application that remains at least partially visible.

Ex. 1001, 102:50–103:55.

In our analysis that follows, we refer to the limitations [1.m.*x*] as the first "when" clause, limitations [1.n.*x*] as the second "when" clause, and limitations [1.o.*x*] as the third "when" clause. Collectively we refer to limitations [1.m.*x*]–[1.o.*x*] as the "when" clauses.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art ("POSA") at the time of the alleged invention would have had a "a bachelor's degree in computer science, computer engineering, or a comparable field and at least two years of professional experience working with graphical user interfaces and applications for computers." Pet. 6 (citing Ex. 1003 ¶¶ 36–37). In the Decision on Institution, the Board adopted the uncontested language quoted above in Petitioner's assessment of the level of ordinary skill. The Board however did not adopt additional statements proffered by Petitioner regarding the "extensive background knowledge and understanding" allegedly possessed by a person of ordinary skill in the art (Pet. 6–7). Dec. on Inst. 9–10. Patent Owner agrees with the level of ordinary skill in the art adopted by the Board for purposes of the Decision on Institution. PO Resp. 12; *see also* Ex. 2008 ¶¶ 58–59.

The specification of the '581 patent describes an electronic device that allows for manipulation of user interface objects and, more specifically, the display of web pages through a user interface of a network browser

application, according to contact with a touch-sensitive interaction surface. Ex. 1001, (54), Abstr. Consistent with the scope of the '581 patent and the lack of dispute on the issue, we find that the level of skill in the art is reflected in a person having a bachelor's degree in computer science, computer engineering, or a comparable field and at least two years of professional experience working with graphical user interfaces and applications for computers.

C. Ground of Unpatentability and Asserted Prior Art

Petitioner asserts the following ground of unpatentability:

Claim(s) Challenged	35 U.S.C. §	References/Basis
1–3, 21, 29–31, 42–44, 54, 62–65	103[3]	Blumenberg,[4] Bhumkar,[5] Griffin[6]

Pet. 2. Petitioner additionally cites, among other things, the declaration testimony of Dr. Andrew Cockburn. Exs. 1003 ("Cockburn Decl."), 1058

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[3] As stated in Section II.C, Patent Owner asserts that the is entitled to a priority date of December 2011, even though the '581 patent issued from an application filed in 2019. We stated in the Decision on Institution that regardless of which priority date the '581 patent is entitled to (2011 or 2019), the Board's determination would not change. Dec. on Inst. 6–7. For consistency with the Board's Decision on Institution, and based on the filing date of the '581 patent, we apply the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"). However, our analysis and determination would not change if the pre-AIA version of § 103 applied.
4 US 2008/0259041 A1; published Oct. 23, 2008. Ex. 1004.
5 US 2008/0235594 A1; published Sept. 25, 2008. Ex. 1005.
6 US 2011/0248948 A1; filed Apr. 8, 2010, published Oct. 13, 2011. Ex. 1006.

("Supp. Cockburn Decl."). Patent Owner relies on the declaration testimony of Dr. Mark P. Mahon. Ex. 2008 ("Mahon Decl.").[7]

D. Priority Date Issue

In the Decision on Institution, the Board determined that Patent Owner had not shown that the challenged claims were entitled to the benefit of an earlier priority date. Dec. on Inst. 7. The '581 patent, although filed in 2019, identifies continuation applications and provisional applications dating as early as 2011. Petitioner asserts that the '581 patent is not entitled to an August 5, 2011 priority date. Pet. 3. Patent Owner contends that the '581 patent is entitled to an earlier priority date of December 2011. PO Resp. 1–10, 62 n.15 (stating that Section II of the Response shows that the claims are fully supported by a priority date of at least December 30, 2011, based on Provisional Application No. 61/581,918).

We need not decide whether the '581 patent is entitled to a priority date earlier than 2019. The determination that would be affected by Patent Owner's assertion of an earlier priority date is whether Exhibit 1038, with an alleged date of 2012 can be relied on by Petitioner or its declarant to support a rationale of obviousness. PO Resp. 62 n.15. Petitioner cites Exhibit 1038 for an explanation that "'usability' is an 'important' aspect of mobile device applications in a crowded marketplace." Pet. 16. And Dr. Cockburn, Petitioner's declarant, relies on the exhibit as significant to showing "identifying 'Contextual Menus' as one of the 'characteristics' relevant to

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[7] At institution Patent Owner relied on the testimony of Dr. Marc Davis. Ex. 2001. After institution, Patent Owner withdrew this pre-institution testimony. Paper 16. We therefore do not consider Ex. 2001.

'the usability of mobile devices.'" Cockburn Decl. ¶ 73. Both of these statements involve whether there is a reason to combine the teachings of Bhumkar (describing a menu on a web page preview window) with the teachings of Blumenberg's link preview. Pet. 15–16; Ex. 1003 ¶ 73. Although our ultimate decision is adverse to Petitioner, it is not based on lack of combinability of the teachings from Bhumkar and Blumenberg. Therefore, the issue –whether the '581 patent is entitled to a priority date earlier than the Exhibit's alleged date of 2012 –is moot.

E. Claim Construction

We construe claims using the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc) and related cases. 37 C.F.R. § 42.100(b) (2021). Under that precedent, the words of a claim are generally given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary, in the context of the entire patent including the specification. *Phillips*, 415 F.3d at 1312–13.

The Petition asserts that no claim construction was necessary to determine whether to institute. Pet. 7. In the Decision on Institution, the Board noted a dispute concerning whether the "plain language of the claims requires that a recited function must be performed only after or in response to expiration of a threshold (and other prerequisites), as opposed to requiring a function that begins before and continues after expiration of a threshold." Dec. on Inst. 11. The Board did not provide an express interpretation of any claim term, and invited additional briefing on the issue. *Id.* Both parties have briefed whether the challenged independent claims, in reciting "when" (in claim 1) and "based on detected usage" (in claim 42), require meeting certain conditions before the recited functions are performed. PO Resp.

13–20; Reply 10–17; Sur-reply 2–7. For the reasons that follow, we determine that, under the plain and ordinary meaning of the claim language in the context of the specification, the conditions required by the claim must be met for the corresponding functions to be performed.

1. Language of Independent Claim 1

We start our analysis with the language of the claim. Claim 1 recites "programs including instructions to":

(a) display . . . a first web page including a hyperlink that identifies a second web page;

(b) detect a first contact . . . on the touch-sensitive interaction surface;

(c) detect the end of the first contact;

(d) determine a duration of the first contact;

(e) determine whether there is a contact movement of the first contact; and

(f) determine whether the first contact point of the first contact corresponds with a location of the hyperlink of the first web page. Ex. 1001, 101:58–103:10. The claim also requires program instructions for three "when" clauses, which refer back to the results of the "display," "detect," and "determine" instructions summarized above. For instance, each of the three "when" clauses recites that the "first web page is displayed via the user interface of the network browser application." Ex. 1001, 103:11–12, 103:18–19, 103:32–33. And two of these "when" clauses require that "the end of the first contact is detected." *Id.* at 103:14–15, 28–29. These "when" clauses are drafted in the following syntax: when [outcome] : [function(s)]. Ex. 1001, 103:11–55. The use of the colon (":") in each of the "when" clauses denotes a break between the listed outcomes and the list of functions

performed. In other words, "when" the "display," "detect," and "determine" instructions have a particular outcome, the recited functions are performed.

The three "when" clauses and their respective outcomes and functions can be summarized in the following scenarios, using Petitioner's nomenclature of a "when-then conditional relationship" (Pet. 52):[8]

(1) First Scenario

When	Then
i) First web page is displayed; ii) Duration of the first contact is determined to be less than a first duration[9]; and iii) End of the first contact is detected	Avoid display, on the web page, a result of any operation based on the first contact

[8] Although we use "then" in this format of summarizing the claims, we place no special import to that word as it does not appear in the claims. Rather, it is used to parallel Petitioner's nomenclature of a "when-then" relationship for ease of discussion, and to highlight the distinction between the listed conditions and the listed functions.

[9] The phrase "first duration" is a short-hand name for the recited "first user-configurable predefined duration." *See, e.g.*, Ex. 1001, 103:12–14 (claim 1), 115:9–11 (claim 42).

(2) Second Scenario

When	Then
i) First web page is displayed; ii) Duration of the first contact is determined to be greater than the first duration and less than a second duration[10]; iii) First contact point is determined to correspond with the location of the hyperlink; iv) Not determined that there is movement of the first contact; and v) End of the first contact is detected	Replace the display of the first web page with the second web page

(iii) Third Scenario,

When	Then
i) First web page is displayed; ii) Duration of the first contact is determined to be greater than the second duration; iii) First contact point is determined to correspond with the location of the hyperlink; iv) Not determined that there is movement of the first contact; and v) End of the first contact is not detected	x) Output a first feedback; y) display a menu;[11] and z) further display at least a portion of the second web page

Reading each scenario independently, as mutually-exclusive limitations,[12] it follows that each of the outcomes (in the "when" columns) has occurred as a condition for the functions (in the "then" columns) to be

performed. The verb-tense in each of the "when" outcomes denotes that the instructions necessary for their performance have been executed. For instance, for the second scenario, executing the "display" instruction has resulted in the first web page being displayed. Executing the "detect" instructions have resulted in the first contact having been detected as not moving and corresponding with the location of the hyperlink to the second web page. Executing the "determining" instructions have resulted in the duration of the contact having been determined to be between the first and second duration thresholds, and the end of the first contact has been detected. These are all outcomes of executing the listed program instructions to display," "detect," and "determine," and because the listed outcomes have been obtained, the program moves to execute the function specified for the second scenario: replace the display of the first web page with the second web page.

From the natural reading of the claim, it is logical that all the listed outcomes are conditions that must be met before the recited function(s) is/are performed. Picking up the discussion of the second scenario, the replacement of the first web page with the second web page on the display

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[10] The "second duration" is a short-hand name for the recited "second user-configurable predefined duration." *See, e.g.*, Ex. 1001, 103:12–14 (claim 1), 115:9–11 (claim 42).

[11] The "menu" is recited in more detail as "including at least one option for, in response to detection of a selection thereof, performing an operation on a web address associated with the hyperlink of the first web page." Ex. 1001, 103:44–48 (claim 1), 115:42–46 (claim 42).

[12] The parties agree that the "when" limitations are mutually exclusive. Reply 10; Tr. 29:13–16.

cannot happen unless the first web page has already been displayed, and the first contact was determined to correspond to the hyperlink of the second web page that replaces the first web page.

It is also logical that the "determination" has occurred: the duration of the touch has met the required range in order for the second web page to replace the first web page. The duration of the touch, according to the claim, requires the end of the first contact at a second contact time. Ex. 1001, 102:66–67, 103:1–3. Thus, the condition "end of the first contact is detected" must be fulfilled in order to determine duration of the contact.

Further, the claim language ensures that a moving gesture is excluded from the type of contact that can cause the replacement of the first web page with the second web page. Specifically, for the second scenario, the claim requires "not determin[ing] that there is [] contact movement of the first contact between the first contact point and the second contact point." Ex. 1001, 103:25–28. Therefore, it is reasonable to conclude, from the plain reading of the claim language, that the listed outcomes or the "when" clauses are conditions that must be fulfilled in order to perform the listed function(s).

Even though both parties agree that the "when" clauses list conditions, the parties dispute whether the conditions trigger or cause the recited functions. PO Resp. 13; Reply 10 ("Everyone agrees that the claims outline three different scenarios, each involving certain functions performed when certain touch contact conditions occur."); *but see* Pet. 52 (distinguishing between a "when-then conditional relationship" and a "causal or exclusive conditional relationship"). Petitioner asserts an obviousness contention in which the fulfillment of the conditions does not cause the performance of at

least one of the listed functions. Pet. 49–52. Patent Owner argues that Petitioner's contention is not supported by the plain language of the claims as that language would be understood by a person of ordinary skill in the art. PO Resp. 13–18. According to Patent Owner, the claim language links the conditions by the conjunctive word "and," which denotes that the conditions must be met collectively. *Id.* at 18 (citing *Sierra Wireless, ULC v. Sisvel S.P.A.*, 130 F.4th 1019 (Fed. Cir. 2025).

We agree with Patent Owner's position that the language of the claim requires the fulfillment of all the listed conditions (for each "when" clause) to cause the performance of the recited function. As stated above, the natural reading of the conditions is that they are prerequisites; they must be satisfied for the program to perform the recited function(s). For the third scenario, for example, the condition that the first web page is displayed must be satisfied in order for there to be a hyperlink to a second web page, such that the program can detect whether the location of the first contact point corresponds to that hyperlink. Ex. 1001, 102:60–62, 103:32–33, 103:37–39. The duration of the first contact has exceeded the second duration threshold without ending that first contact, and with no movement of the first contact point. Ex. 1001, 102:66–67, 103:1–3, 103:33–36, 103:39–42.[13] These conditions collectively set the characteristics of the gesture that endures for the required amount of time. "When" this particular gesture is detected, for

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[13] We note that other non-challenged claims, require determining that there is movement of the first contact and performing corresponding functions of displaying the movement. *See, e.g.*, Ex. 1001, 108:9–24 (Claim 40, which depends from claim 1).

the required duration, and recognizing the hyperlink is selected on the displayed first web page, then the three functions corresponding to these conditions in the third scenario are performed. This "when-then" relationship is conditional, as the parties seem to agree; but, we find, it is also causal. Because the cause of outputting the feedback with the actuator, displaying a menu, and further displaying a portion of the second web page to which the hyperlink pointed is that all the conditions were satisfied as required by the claim. Ex. 1001, 103:43–55. This is the plain and straightforward reading of the "when" clauses in claim 1.

Arguing against such "causality," Petitioner argues that the claim should not be construed to equate "when" with "in response to." Reply 11–13. According to Petitioner, the claim language does not preclude functions occurring (such as displaying the portion of the second web page) before the duration condition is met. *Id.* at 11 (arguing that this would require the "webpage preview to occur 'in response to' the contact surpassing the activation threshold."). Relying on the language of the third "when" clause, Petitioner argues that patentee intentionally uses the phrase "in response to" in a different context and the phrase therefore should have a different meaning than the word "when." *Id.* at 12–13 (citing, among other cases, *CAE Screenplates, Inc. v. Heinrich Fiedler Gmbh & Co. Kg*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("[W]e must presume that the use of these different terms in the claims connotes different meanings."). Petitioner further notes that this inference of a different meaning for the word "when" should take into account the language of dependent claim 41. *Id.* at 13 (citing *Intamin, Ltd. v. Magnetar Techs., Corp.*, 483 F.3d 1328, 1335 (Fed. Cir. 2007 ("[a]n independent claim impliedly embraces more subject matter

than its narrower dependent claim). We are not persuaded by these arguments.

First, the analysis of the term "when" is analyzed in context of the surrounding claim language and according to the plain meaning. *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms"). However, our determination does not hinge on whether "when" and "in response to" have the same meaning. Our analysis of the surrounding claim language focuses on how to read the claim as a whole. The listed conditions of the "when" clauses relate to elements of duration, first contact, and display recited in other claim limitations (the "program instructions" that "display," "detect," and "determine"). The listed functions likewise relate to other elements as explained above, implicating an interdependence between what is required as a condition and what is required as the resulting function. Our analysis therefore takes into account the entire context of the claim, rather than a narrower viewpoint of comparing the meaning of "when" with the meaning of "in response to."

Second, the doctrine of claim differentiation does not support Petitioner's contention. Claim 41, which indirectly depends from claim 1, recites "each instance of said when includes while." Ex. 1001, 111:38. According to Petitioner, if "when" includes "while," then independent claim 1 "is not constrained to the narrow phrase "in response to." Reply 13. However, as Patent Owner points out, "while" is a temporal restriction that means "contemporaneous" performance of the functions. Tr. 39:24–40:11. Thus, the inclusion of "while" clarifies a timing in which "while" the

conditions are satisfied, the functions are performed. "While" does not mean that relationship between the conditions and the functions is expanded to include performing a function when less than all recited conditions are satisfied. *See* Sur-reply 4.

Further, regarding claim differentiation, Petitioner's reliance on the language of dependent claim 3 is not persuasive. Petitioner points out the Board's initial view that dependent claim 3 recites functions in the third scenario that can happen at different times, "as opposed to, for example, only responses that are triggered" by the prerequisite elements. Reply 13–14; Dec. on Inst. 11. We have a full record now and determine that claim 3 does not warrant deviating from the natural reading of claim 1 to allow for functions that can occur before the conditions are met, i.e., to negate a causal relationship. Claim 3 requires that the first feedback is output prior to the display of the menu. Ex. 1001, 104:1–4. These *functions* of outputting feedback and displaying the menu may happen at different times with respect to each other, but not with respect to the requisite *conditions*.

Consequently, under a plain and natural reading of the language of claim as a whole, we agree with Patent Owner that the "when" clauses recite specific conditions all of which must be satisfied in order for the program instructions to perform the recited function(s).

2. Language of Independent Claim 42

Claim 42, a method claim, recites "based on detected usage where:" instead of "when," in the corresponding claim 1 limitation. For example, in the first scenario, claim 42 recites "based on detected usage where: the first web page is displayed . . . the duration of the first contact is determined to be

less than a first user-configurable predefined duration, and the end of the first contact is detected; avoiding display, on the first web page, a result of any operation based on the first contact." Ex. 1001, 115:7–14. Despite the difference in the language, Petitioner does not propose a different or separate analysis for the "based on" limitations of claim 42. *See, e.g.*, Pet. 64 (asserting the claim 42 is substantively similar to claim 1).

Patent Owner argues, and we agree, that Petitioner does not distinguish between the "when" limitations of claim 1 and the "based on" limitations of claim 42. PO Resp. 19. Patent Owner further argues, and we agree, that adopting Petitioner's contention would result in interpreting claim 42 contrary to its plain and ordinary meaning. *Id.* The phrase "based on detected usage" is followed by the same listing of conditions described above in the "when" column for each scenario. Therefore, the natural reading of the claim language is that the collective whole of the conditions must be "detected usage"—meaning the conditions must all be satisfied. This accords with the natural reading of claim 1, and naturally fits with the plain meaning of claim 42. Accordingly, though we agree with Petitioner that claim 1 and claim 42 may be substantively similar, we are persuaded by Patent Owner's argument that the "based on detected usage" limitations of claim 42 must be interpreted to require the satisfaction of all the recited conditions. *Id*. Then, "based on that detected usage," the recited functions are performed. A function, therefore, cannot be performed before all the required conditions have been detected as satisfied—to allow otherwise would mean that function performance is not "based on the detected usage."

Therefore, we determine that the plain meaning of the language in claim 42 supports the understanding of the "when" clauses of claim 1 as

stated above: the claim recites specific conditions all of which must be satisfied in order for the program instructions to perform the recited function(s).

3. The Specification and Intrinsic Record

Now we turn to evaluating the specification, for the person of ordinary skill in the art is deemed to read the claim "not only in the context of the particular claim in which the disputed term appears, but in context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313.

Petitioner argues that the "only disclosure resembling the claim language appears in a 'Brief Summary' section that the patentee added by amendment during prosecution." Reply 14 (citing Ex. 1001, 1:41–2:27). That Brief Summary section, according to Petitioner, provides evidence that the inventor did not intend to equate "when" with "in response to." *Id.* Petitioner focuses on the following phrase in that Brief Summary: "further subsequently display at least a portion of the second webpage" (Ex. 1001, 2:16–17). *Id.* (emphasis by Petitioner). And focuses on how this language compares with a corresponding phrase in the claimed third scenario: "further display at least a portion of the second web page" (*id*. at 103:48–49). *Id.* The inclusion of the adverb "subsequently" to the function "to further display" (in the Brief Summary) shows, according to Petitioner, that the inventor abandoned such temporal limitation, because it does not appear in the language of claim 1. *Id.* 14–15 (evaluating similarly the inclusion of the word "subsequently" in dependent claim 3).

The argument is not persuasive because the issue of timing in the performance of the functions does not alter the plain reading of the conditions and whether they must be satisfied in order for the functions to be

performed. The distinction between the conditions and the functions is important. "When" the conditions are all satisfied, the functions are performed, in any order or timing sequence with respect to each other. In other words, whether the display of the second web page portion occurs simultaneously or subsequently to display of the menu or the feedback does not undermine the reading of the claim to require that satisfaction of the conditions cause the function performance.

Petitioner further points out the prosecution history of a prior patent application that shares common subject matter. Reply 15. According to Petitioner, in that related application (No. 16/377,142), Patent Owner sought amendments to narrow "when" in certain claims, to "only when." *Id.* (Ex. 1001, Cover (63), 1:9–25; Ex. 1057, 55–210; Ex. 1053, 30:12–31:8.). Patent Owner rebuts these assertions, contending that the amendment of claims to recite "only when" supports rather than contradicts Patent Owner's proposed construction. Sur-reply 5–6. Both parties argue the impact of *Wang Labs., Inc. v. Am. Online, Inc.*, 197 F.3d 1377, 1384 (Fed. Cir. 1999) on the issue of prosecution estoppel. We determine that Patent Owner has the better argument on this issue.

The prosecution history of Application No. 16/377,142 ("'142 Application") does not warrant reading the "when" limitations of the '581 patent as Petitioner proposes. The independent claim of the '142 Application includes two "when" limitations, each with its own condition and function. Ex. 1057, 9 (claim 16). That claim's use of "when" there is similar to the use of "when" here: when a condition is true (magnitude of the pressure on the touch screen meets a certain threshold), perform a specific function. *Id.* In one "when" clause, if the magnitude

exceeds one threshold, the operation performed is scaling an object. *Id.* In the other "when" clause, if the magnitude exceeds another threshold, another operation is performed. *Id.* In the '142 Application claims, the functions are not performed until the threshold conditions are satisfied.

Now, some dependent claims in the '142 Application refine further the scaling function performed in the first "when" condition of the independent claim. For example, dependent claim 26 requires scaling as a continuous function of the magnitude of the pressure "only when" the magnitude being detected is greater than the first threshold and less than the second threshold. *Id.* at 11 (Claim 26). The use of "only when" in this dependent claim does not undermine the understanding that "when" in the independent claims requires the satisfaction of the conditions as the cause of function performance. The "only when" conditions are a subset of the more general "when" conditions in the independent claim, and the function in the "only when" claim is a subset of the more general scaling function of the independent claim. Again, the further refinement in the dependent claims reflects the intent to narrow further the scaling to be continuous only within range of the threshold conditions (greater than the first magnitude threshold and less than the second magnitude threshold). This refinement, in our view, does not undermine the use of "when" in the independent claim to require the satisfaction of all conditions as the cause of function performance.

Another dependent claim, also uses the words "only when" more generally, to exclude other conditions from being the cause of the recited function. Claim 55 recites, for instance, that "scaling occurs only when the magnitude of the pressure of the gesture being detected on the touch screen of the object is greater than the first magnitude threshold." Ex. 1057 at 24

(Claim 55). Patent Owner argues that this language reflects an "exclusive causal relationship." Sur-reply 5–6. In other words, the word "only" in this claim does not affect the causal relationship between the condition and the function; rather it limits the condition further. Thus, we agree with the notion that the "only when" term, as used in those claims, merely narrows the relationship to one of exclusive dependence: no other condition can cause the scaling.

As for the applicability of *Wang Labs*, we are not persuaded that existence of these "only when" dependent claims in another application warrant reading the claims as Petitioner's proposes. *Wang Labs* dealt with a specification that explicitly used the disputed term "frame" as involving "character-based protocol," with no description of frames expressly including "bit-mapped" protocols. *Wang Labs*, 197 F.3d at 1381. In the prosecution history of the parent application, a prior art reference was distinguished on the basis that it did not disclose "character-based" encoded information. *Id.* at 1384. Based on this statement, the Court determined that the inventors focused the invention to a "character-based system," and such a statement clearly informed the understanding of the subject matter common to the continuation-in-part application. *Id.* Petitioner has not shown that the term "when" has been clearly differentiated or used in a way that allows for functions to be performed without cause from recited conditions being satisfied. And the use of "only when" in the dependent claims of the '142 Application do not rise to an inference of such an understanding.

We now turn to review the written description of the '581 patent to address the context of our analysis. Patent Owner directs us to Figures 16,

6,[14] and 18 as illustrating "the decision-tree programming logic underlying the challenged claims." PO Resp. 2–3. Specifically, Patent Owner asserts that "Figure 16 illustrates programming logic that begins with 'determin[ing] if a touch event has occurred,' and thereafter requires evaluating the 'touch event attributes' to determine whether they correspond to a gesture and, if so triggering 'an associated action.'" *Id.* at 3 (citing Ex. 1001, 53:7–54:20). Figure 16 is reproduced below.

[14] Figure 6 describes embodiments of selection mode in which a determination is made concerning whether there is an embedded hyperlink within the context determination zone (at or near the contact point) in order to select a hyperlink selection function. Ex. 1001, 30:13–57. Our analysis does not focus specifically on the contact point and the satisfaction of this condition. Therefore, we do not discuss further this embodiment.

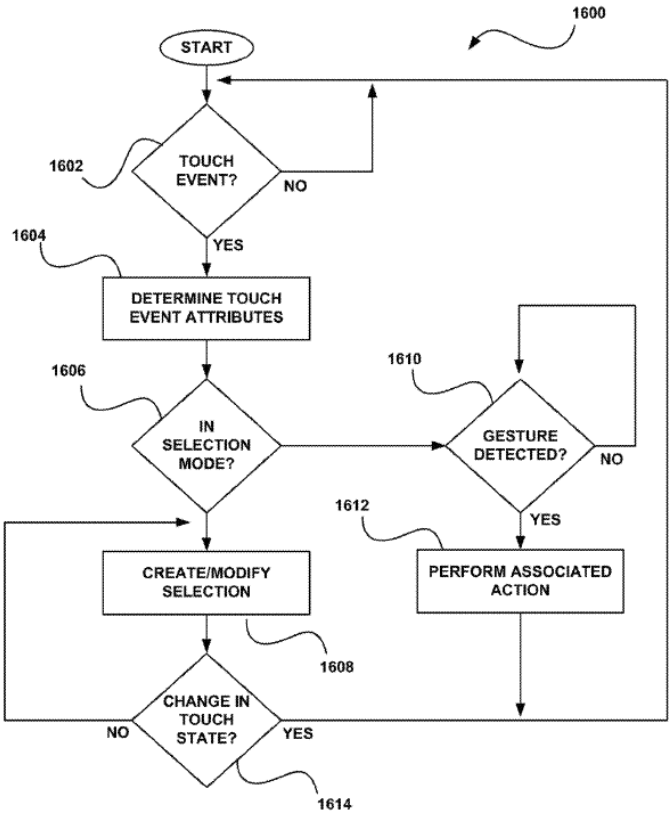


FIGURE 16

Figure 16 "shows an alternative method 1600 for defining a selection made within a user interface based in part on contact pressure, in accordance with one embodiment." Ex. 1001, 53:7–9. The method shown in Figure 16 describes that when a touch event is detected, the method determines touch event attributes, which refer to one or more measurable aspects of the user interaction that resulted in the touch event. *Id.* at 53:26–30. For instance, these measurable aspects include touch state, contact point, contact area, etc. *Id.* at 53:30–34. When the method determines that the system "is not in a selection mode, then it is determined if a gesture has been detected." *Id.* at 54:12–14 (describing also feedback may be given when a gesture is detected). "If a gesture has been detected, then an associated action is

performed." *Id.* at 54:19–26 (describing that feedback may be provided when the action is performed). Gestures, according to the '581 patent, may be associated with a variety of different actions, and including placing the system in a selection mode. *Id.* at 54:27–34.

The description of Figure 16 is illustrative of the relationships between detection of touch events and gestures and subsequent functions. When a touch event is detected, then attributes are evaluated. And when a gesture is detected, then associated actions are performed. The claims here have the same pattern: when conditions are satisfied, perform associated functions. *See, e.g.*, PO Resp. 3 ("The figures show how such logic causes a device to detect and interpret touch event attributes and trigger the appropriate action when those attributes satisfy predetermined conditions.").

Turning to Figure 18, reproduced above in the introductory paragraph of Section II (Background), Patent Owner asserts that "programming logic [] determines whether the touch event corresponds to a pre-defined gesture and, once confirmed, triggers the corresponding action." PO Resp. 3 (citing Ex. 1001, 56:24–60). The '581 patent describes how gestures are identified and parametrized based on various inputs—for instance, a gesture may be made up of one or more contact points on an interaction surface, each associated with a different contact pressure level. Ex. 1001, 56:52–60. The description of the method continues: "[o]nce the gesture has been identified, the corresponding operation is performed." *Id.* at 57:9–10. Many gestures-operations options are described, with one particularly exemplifying some of the functionality recited in the claims here. *See id.* at 57:11–58:45. That example describes user interaction with a web browser:

> apply contact pressure on a link within a webpage, then perform a quick flicking gesture, in any direction, to open the link in a background tab or window. In another embodiment, a user may open a link in a new tab or window by pressing on the link through a back interaction surface for a predetermined amount of time.

Id. at 58:37–45.

In all the Figure 18 examples, the full scope of the gesture is identified first, and the operation that is assigned to that gesture is thereafter performed. It makes sense that there is a need for the full gesture, and its gesture inputs to be identified first, in one example, because there may be gestures with touch attributes in common. For instance, the '581 patent describes that "a two finger pinch gesture and a two finger swipe are indistinguishable based solely on initial touch event attributes. However, once the swipe or pinch motion has begun, the gestures are immediately distinguished from each other." *Id.* at 56:56–60. In the example above, the initial touch is detected as two fingers contacting the screen at contact points, but the movement and duration of these different gestures identify each distinctly. The '581 patent explains this generally when stating that "gestures may be associated with operations that are carried out as functions of the gesture input, when the gesture is performed and identified." *Id.* at 59:15–17. Thus, "the operations associated with a gesture may be carried out as a function of the associated gesture dynamics." *Id.* at 59:18–27. The specification continues,

> [G]esture dynamics are aspects of a gesture that may vary without changing the identity of the gesture. Possible aspects may include, but are not limited to, contact point velocity, contact point acceleration, contact pressure velocity, contact

> pressure accelerations, time to complete gesture, and/or any other aspect which may be associated with a gesture.

Id. These passages paint the picture that the collection of operations that make up a gesture must be first identified before a function associated with the gesture is identified and performed. Neither party has presented evidence that the '581 patent describes an example of an action associated with a gesture that is initiated before the gesture operations of that particular gesture or any touch event are identified.

To be sure, we note an embodiment in the '581 patent in which an operation may be performed concurrently with the gesture, as it is performed: where a representation of the gesture is temporarily displayed as the gesture is performed. Ex. 1001, 59:47–50. But even this "concurrent display" has a direct causal relationship to the gesture that is identified. The movement is a gesture dynamic and the corresponding feedback of the display of the gesture as it is being performed is an operation that is carried out *as a function* of the associated dynamics. *See id.* at 59:18–27. The causality and dependence of operations and gestures is evident in the description of the various '581 patent embodiments. Indeed, the specification provides examples describing this causality using "when," such as "a gesture which may be used to select text may move text if performed when text has already been selected." *Id.* at 59:38–40. In other words, and to mirror the use of "when" in the claim, "when" gesture for selecting text is detected text and has already been selected, move selected text.

To sum up, we determine that the specification of the '581 patent supports the plain reading of the claim language "when" to mean that there

is a causal relationship between the satisfied conditions and the corresponding functions.

4. Extrinsic Evidence

The parties have proffered extrinsic evidence in the form of dictionary definitions and expert testimony. We note that although we may rely on extrinsic evidence, when useful to shed light on the relevant art, it is less significant than the intrinsic record in determining the meaning of the claims. *See Phillips*, 415 F.3d at 1317. As for dictionary definitions, such evidence may be considered if we deem it helpful in determining "the true meaning of language used in the patent claims." *Id.* at 1318 (internal citation omitted). Further, as to expert testimony,

> conclusory, unsupported assertions by experts as to the definition of claim term are not useful to a court. Similarly a court should discount any expert testimony "that is at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent."

Id. (internal citation omitted).

With regard to evidence of dictionary definitions, Petitioner introduces two dictionaries to argue that the word "when" is defined as "at or during the time that," and therefore, the word is not synonymous to "in response to." Reply 12 (citing Exs. 1055, 1056). Patent Owner responds that the general-purpose dictionary definition "is not relevant to ascertaining the 'meaning in a field of art.'" Sur-reply 3–4 (quoting *Phillips*, 415 F.3d at 1314). Patent Owner notes that the dictionary confirms that "when," even if not synonymous with "in response to," connotes a causal relationship. *Id.* at

4 (citing Ex. 1055, p. 3 (referring to example "stop writing [when] the bell rings" and "[when] he listens to music, he falls asleep").

We determine that the dictionary definitions do not support Petitioner's contention and in any event are not necessary to inform the scope of the "when" clauses, as it pertains to whether a function may be performed without cause (from the satisfied conditions). Petitioner relies on the meaning of "when" that is equated to the meaning of "while." Ex. 1055, p. 3 (definition 1a: *at or during the time that : WHILE <went fishing [while] he was a boy>*). We explained in connection with dependent claim 41 (*see* Section II.E.3, above) that the plain meaning of the word "when," though including the scope of "while" in that claim, does not dispense with the causal relationship that the plain meaning of the "when" clauses require. Additionally, Petitioner does not adequately explain why the one particular dictionary definition (equating "when" with "while") should be adopted over other definitions in the same dictionary. *See id.*

As for testimony, we are not persuaded by Petitioner's arguments that testimony of Dr. Mahon concerning programming language is at odds with the language of claim 1. Petitioner faults Dr. Mahon's testimony that a person of ordinary skill in the art would interpret the claim as a sequence of logic operations reflecting "standard conditional programming structures in which input detection, condition evaluation, and response execution occur in sequence." Mahon Decl. ¶ 50; Reply 16–17. Petitioner implies that Dr. Mahon recanted by admitting that there is no specific "way that it must be done, other than the preconditions must be met and the action must be taken." Reply 17 (citing Ex. 1053, 39:12–40:4, 58:8–19). Patent Owner alleges in response that Dr. Cockburn does not dispute Dr. Mahon's

testimony that in "programming practice, there is no difference between triggering an action 'when X is true' and doing so 'in response to X being true'" because both invoke conditional logic "that would be implemented using well-understood constructs such as if-statements or event handlers that monitor for specified conditions." Sur-reply 2–3 (citing Mahon Decl. ¶ 51; Supp. Cockburn Decl. ¶¶ 55–56). Dr. Cockburn testifies that Dr. Mahon's "fundamental[ly] misunderstand[s] that the claims are some kind of code or pseudo code–which they are not." Supp. Cockburn Decl. ¶ 56. According to Dr. Cockburn, the claims simply describe the "result of executing code; they are not themselves representative of any underlying code." *Id.*

We agree with Dr. Cockburn that the claims are not themselves programming code or even pseudo code. But they recite the functionality that the program instructions implement.[15] We do not find useful Dr. Cockburn's quibble with the word "instructions" recited in the claim as being too generic to import the understanding in the relevant art that programming logic is involved. *Id.* ¶ 55. Claim 1 recites more than mere "instructions." As discussed above in Section II.E.1, the claim requires "one or more programs" and those "programs including instructions." Ex. 1001, 102:56–59. We are persuaded by Dr. Mahon's explanation concerning the perspective of a person of ordinary skill in the art and the implementation of instructions in programming logic that is executed by a processor, and that

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[15] Claim 42 is a method claim and does not recite the "program including instructions to" as claim 1 does. However, claim 42 does recite the processor and memory in parallel with the same functions recited in claim 1, and Petitioner has not argued that the scope of claims 1 and 42 differ in any material way. Ex. 1058 ¶ 55, n.3. Ex. 2008 ¶ 51.

"from a software engineering standpoint, it would not be possible to implement a function that performs an action 'when' preconditions are met unless that function is designed to be executed because those preconditions have been detected." Mahon Decl. ¶ 52. We credit Dr. Mahon's explanations as they are reasoned and supported by the specification of the '581 patent. Mahon Decl. ¶ 50. We are not persuaded by Dr. Cockburn's rebuttal of Dr. Mahon's reliance on the specification as supporting the understanding of a person of ordinary skill in the art because it dismisses the discussions of logic to implement the gesture detection and corresponding operations merely because these passages do not refer specifically to the three scenarios of the claim. Dr. Mahon's discussion of general programming principles of conditional statements provides context relevant to the field of the invention. *See Phillips*, 415 F.3d at 1319 ("extrinsic evidence can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean" but warning about the flaws inherent in this type of extrinsic evidence).

Accordingly, we are persuaded that Dr. Mahon's testimony confirms the understanding of the plain and natural reading of the claim language to require a causal relationship between the conditions and the functions.

5. Conclusion

Weighing the secondary value of the testimony in light of the plain meaning of the claims in context with the intrinsic record, we are persuaded that the conditional requirements of the "when" limitations in claim 1, and the "based on detected usage where" limitations in claim 42, must be satisfied in order for the functions to be performed, meaning that for each

claimed scenario, there is a causal relationship between the satisfaction of the listed conditions and the corresponding function(s).

F. Obviousness of Claims 1 and 42

Having resolved the issue of scope of claims 1 and 42, we begin our analysis of these challenged independent claims under the only ground of obviousness presented by Petitioner. Petitioner challenges claims 1 and 42 as obvious over Blumenberg, Bhumkar, and Griffin. Pet. 3. The challenge relies primarily on Blumenberg, in combination with the teachings of Bhumkar regarding menu options and the teachings of Griffin regarding touch duration threshold configurability and triggering selective tactile feedback. *See* Pet. 12. Specifically, and because it is dispositive, regarding the third "when" clause (claim limitations labeled [1.o]), Petitioner maps Blumenberg's link preview to the function "display a portion of the second web page," which occurs before the required duration of the first contact is determined to be greater than the second duration. Pet. 42 ("when the user maintains the contact for a ***duration greater than*** the activation threshold (***second user-configurable predefined duration***), the web browser remains on the current page while also previewing the target webpage"). Petitioner alternatively maps Bhumkar's display of a "quick view" or "preview" of a target web site as a "***display [of] at least a portion of the second web page***." Pet. 49–50 (arguing that "swapping Blumenberg's snippet for Bhumkar's preview would have been a simple substitution of known elements to achieve an exceedingly predictable result."). Petitioner further maps Bhumkar's menu to the "display a menu" function (Pet. 46–48) and argues that this menu would have improved Blumenberg's preview window (Pet.

14–16) and would have been displayed after the "activation" threshold to "provide a more effective prompt and enhance usability" (Pet. 17–18).

Patent Owner challenges Petitioner's mapping as insufficient, relying on the interpretation of the claims to require a causal relationship between the conditions and the functions. PO Resp. 44–46. We agree with Patent Owner that Petitioner's mappings of the third scenario are insufficient. Consequently, we find that Petitioner has not established by a preponderance of the evidence that the challenged claims are unpatentable.

Before we turn to the specifics of the deficiencies in Petitioner's challenge, we first summarize relevant portions of Blumenberg and Bhumkar.

1. Summary of Blumenberg (Ex. 1004)

Blumenberg relates to "user interfaces for portable devices, and more particularly, to activating hyperlinks on a portable electronic device." Ex. 1004 ¶ 2. The small screen size of portable devices presents limitations on the amount and size of the information that can be displayed on the screen, especially with regard to navigating web pages via hyperlinks. *Id.* ¶ 4. Blumenberg describes a user making contact with the touch screen with a finger and determining a contact area and a point (of contact) to determine which link among the various links displayed satisfied the predefined criteria with respect to the contact area and the point. *Id.* ¶¶ 46–48. A snippet of content from the page to which the closest link points, and/or a summary of the content from the page to which the link points are displayed. *Id.* ¶ 48. Figure 5F, annotated by Petitioner, is reproduced below.

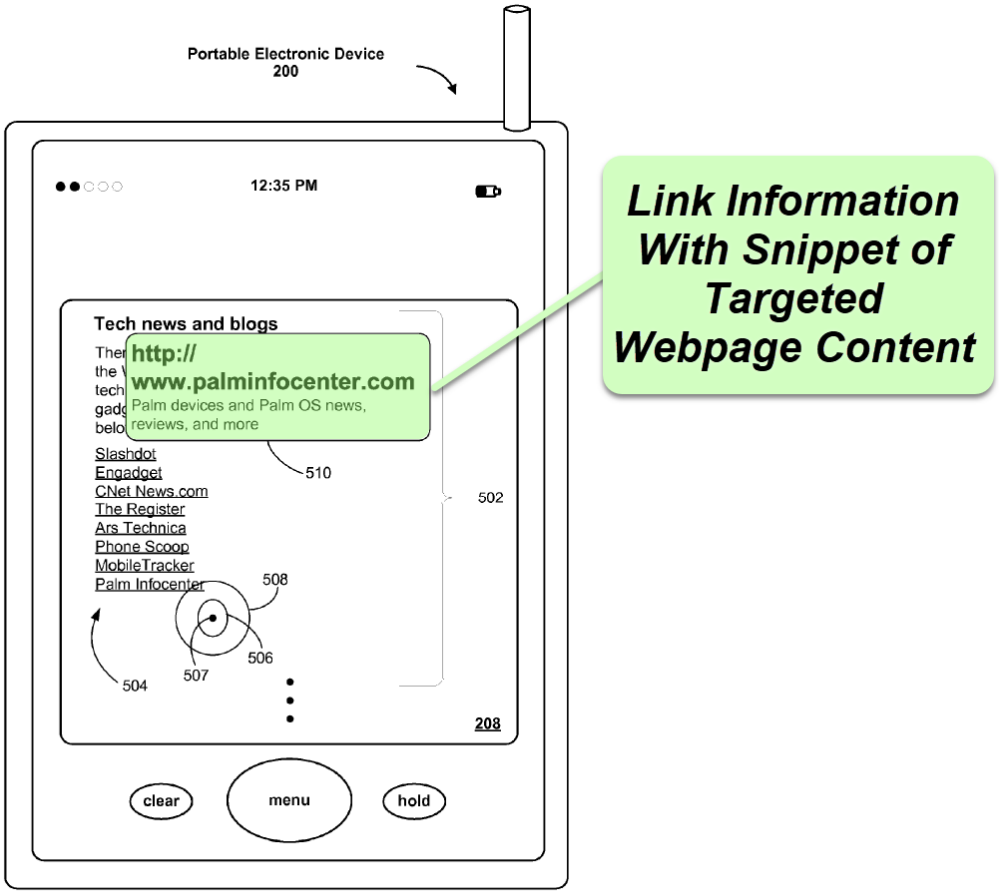


FIG. 5F

Figure 5F illustrates touch screen 208 displaying "webpage 502" and displayed information 510, which Petitioner highlights in green and labels "Link Information With Snippet of Targeted Webpage Content." Pet. 8; Ex. 1004 ¶ 48.

Blumenberg describes that the link information is displayed after the contact is maintained for at least a predetermined time, such as 0.2 seconds or another value between 0.1 and 0.25 seconds. Ex. 1004 ¶ 49. Blumenberg also describes that the link information is removed from the display if contact area 506 is not moved for longer than a predefined amount of time, such as, for example, three to five seconds. *Id.*

The activation of the link may be triggered in a variety of ways. *Id.* ¶ 51. For example, Blumenberg describes that activation of the link may be triggered after the breaking of contact before or after a first predetermined amount of time has elapsed. *Id.* In other embodiments, the activation may be triggered by a gesture, such as a quick tap on the touch screen after breaking contact. *Id.* But if the contact is held for longer than a second predetermined amount of time, whatever link information that is displayed is removed from the display and the link is not activated. *Id.*

Blumenberg describes combinations of the foregoing activation criteria, such as: activating a link by a contact break if the link was displayed less than the first predetermined amount of time, and "if the link information was displayed for more than that amount of time, then the user must break contact and tap the link information (which is continued to be displayed after the contact break) to activate the selected link." *Id.*

Petitioner focuses on and characterizes Blumenberg's activation criteria (and combination of the activation criteria), identifying three scenarios:

a) A first scenario in which the user contacts the touch screen for less than 0.2 seconds, a threshold which Petitioner refers to as the "selection threshold." Pet. 9 (citing Ex. 1004 ¶¶ 34, 49).[16]

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[16] We note here Patent Owner's disagreement with Petitioner's characterization of this "first scenario" because Blumenberg describes a scenario in which a hyperlink is previewed after contact is maintained for at least a predetermined time. PO Resp. 25 n.7. Although the distinction is applicable to the parties' arguments concerning the first "when" clause, we

b) A second scenario in which the touch on a hyperlink extends beyond the "selection threshold" and results in activation of the hyperlink when the user breaks contact, before reaching a second predetermined amount of time. Petitioner refers to this second predetermined amount time as the "activation threshold." *Id.* (citing Ex. 1004 ¶¶ 40, 48–49, 51, Figs. 5B–5D).

c) A third scenario in which the link information is maintained on the display after exceeding the "activation threshold" but a break in contact does not trigger activation of the selected link. *Id.* (citing Ex. 1004 ¶ 51, Fig. 5C). In this scenario, the user must confirm activation of the hyperlink to navigate to the targeted web page with a quick tap. *Id.*

2. Summary of Bhumkar (Ex. 1005)

Bhumkar is a patent application that relates to "navigating, displaying, extracting, sharing and/or storing links, text and/or media using gesture-based or similar interfaces to the Internet." Ex. 1005 ¶ 2. Bhumkar explains that search results displayed in a browser running on a user computer are challenging for a searcher to differentiate between relevant and irrelevant results because often the result pages provide only a list of hyperlinks to the target web pages. *Id.* ¶ 5. When text presented along the hyperlink is provided, the text is usually limited to a few words which may or may not help the searcher in assessing the relevancy of the returned result. *Id.*

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do not refine this characterization further because the distinction is not relevant to the focus of our analysis, the third "when" clause.

Bhumkar, among many solutions, describes an embodiment in which a preview of a second web page linked to by a first web page is displayed in a browser, in response to a search query. *Id.* ¶¶ 21, 38. The preview is displayed in response to a cursor control event, such as mouseover, and this preview window includes a toolbar providing access to one or more functions for manipulating content shown in the preview window. *Id.*

Figure 5 of Bhumkar, annotated by Petitioner and illustrating the preview, is reproduced below.

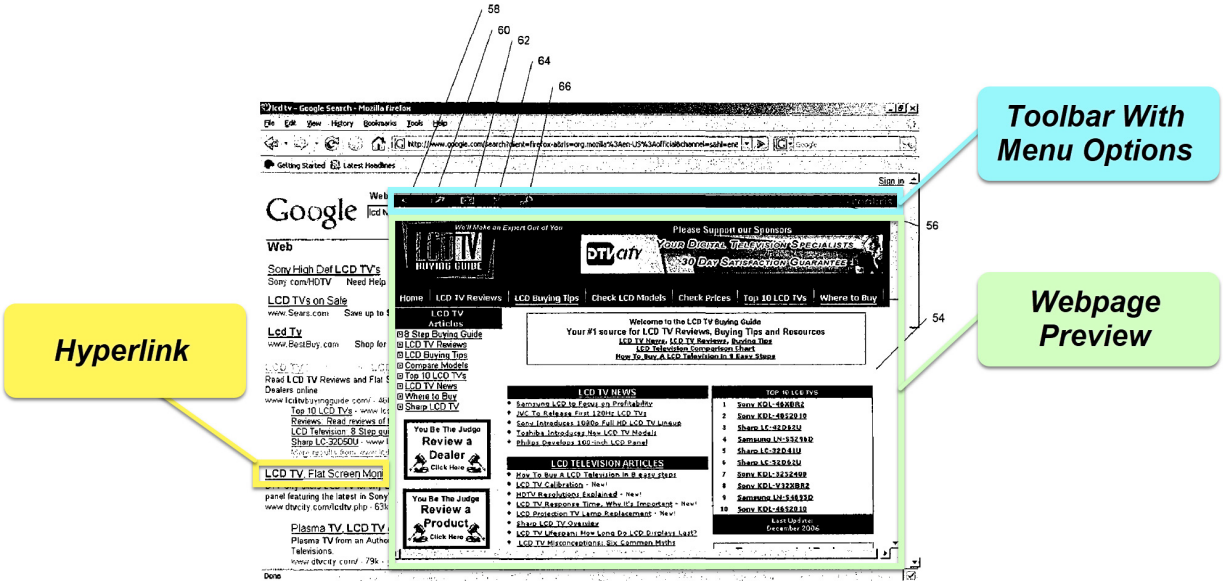


Figure 5 illustrates a preview window having a toolbar configured to permit manipulation of content displayed in the preview window, where Petitioner labels the preview window 54 in green ("Webpage Preview"), the toolbar 56 in blue ("Toolbar With Menu Options"), and the hyperlink is labeled as such and highlighted in yellow. *Id.* ¶¶ 33, 71.

Bhumkar describes preview web pages generally, and describes tool bar features as an additional feature. *Id.* ¶¶ 60–69 (describing quick views and additional enhancements to the preview page such as the inclusion tool bar features for saving search results).

3. Analysis of Limitations [1.o]—the Third "When" Clause

In the Decision on Institution, we summarized Petitioner's position with regard to the third "when" clause as follows:

> For Limitations [1.o.i–1.o.iii], Petitioner relies on the combined teachings of Blumenberg, Bhumkar, and Griffin. Pet. 46–53. [ ]Among other things, Petitioner cites Blumenberg as teaching or suggesting that the touchscreen's web browser remains on the current webpage when the duration of a first contact is greater than an activation threshold without movement of the contact, the touchscreen's web browser would display link information that includes menu options and a snippet of the content of the target webpage. *See, e.g.*, Pet. 13–18, 46–47, 49. Petitioner additionally discusses Griffin's teachings relating to the process of monitoring the duration of a touch against different thresholds and providing tactile feedback, among other functions. Pet. 43 (citing Ex. 1006, Fig. 7). And Petitioner contends Bhumkar provides an alternative basis with Bhumkar's teachings of a "quick view" or "preview" of a hyperlink's target webpage. *See, e.g.*, Pet. 46–48, 50. According to Petitioner, "while Blumenberg's link information (***second webpage portion***) is initially displayed before the activation threshold, it would be paired with tactile ***feedback*** and a ***menu*** only after and as a consequence of the activation threshold." Pet. 53 (citing Ex. 1003 ¶ 158).

Dec. on Inst. 20. The panel noted that the scope and meaning of the "when" limitations as a matter of claim construction at the institution stage did not require the timing of the display of the "portion of the second web page" or "menu" to occur only after the expiration of the "second user-configurable predefined duration." *Id.* at 27–28. We now have a full record and have determined that there is a causal relationship between the conditions and the functions of each of the "when" clauses as discussed above in Section II.E.

Applying that construction, we are persuaded by Patent Owner's arguments that neither Blumenberg's display of the link preview (or "snippet") nor Bhumkar's display of the "quick view" with the "menu" occurs under a causal relationship to the condition of duration that the third "when" clause requires. PO Resp. 44–46. Blumenberg's link preview is displayed when meeting the so-called "selection threshold," as described above in Section F.1 (explaining the first scenario of Blumenberg). Ex. 1004 ¶ 49. The third "when" clause requires the "display [of] at least a portion of the second web page" as one of the three functions that occur *when* the conditions of the third "when" clause are satisfied, one of which is that the "duration of the first contact is determined to be greater than the second user-configurable predefined duration." Ex. 1001, 103:34–36, 103:48–49. The Petition maps the "***second user-configurable predefined duration***" to the "activation threshold" not the "selection threshold." Pet. 42 ("when the user maintains the contact for a ***duration greater than*** the activation threshold (***second user-configurable predefined duration***), the web browser remains on the current page while also previewing the target webpage."); 44 (explaining a POSITA's understanding of Blumenberg to identify when the user holds the contact beyond the activation threshold, consistent with Griffin's cyclical process flow and consistent with ordinary practice and common sense); 45 (discussing that contact remains beyond the activation threshold); 49 (explaining that Blumenberg maintains the contact for duration greater than the activation threshold and continues to display the link information); *see also* Pet. 50 (discussing swapping Blumenberg's snippet with Bhumkar's preview under a "simple substitution" rationale,

meaning that the timing for preview display is not modified under this swap).

Thus, Petitioner's mapping as described above does not meet the requirements of the third "when" clause. We find that neither the snippet of Blumenberg nor the preview of Bhumkar is displayed in Petitioner's proffered combination when the conditions of the third "when" clause are met. The condition of determining that the duration exceeds the "activation threshold" has no relationship to whether the display of the snippet or the preview occur. Blumenberg displays the link preview or snippet upon exceeding the 0.2 seconds or "selection threshold." Ex. 1004 ¶ 49. Thus, there is no conditional relationship, much less a causal relationship between the display of the link preview or snippet and the "activation threshold" to which Petitioner has mapped the condition of the third "when" clause. The substitution of the snippet with Bhumkar's "quick view" under Petitioner's "simple substitution" rationale does not remedy the deficiency noted here. The function of "further display at least a portion of the second web page" (i.e., the "quick view") is causally related to the "selection threshold," and has no correlation to the duration determination, that the "activation threshold" has been exceeded. *See* Tr. 9:8–20 (Petitioner's counsel arguing that "[t]here's got to be correlation between them."). Indeed, without a show of causality, the recited "further display" limitation is rendered irrelevant, in the Blumenberg-Bhumkar-Griffin combination. There is no need to "further display" because it already has been displayed, untethered to any condition recited in the third "when" clause.

Petitioner proposes an alternative argument, "[that] Claim 1 would still be obvious under an interpretation requiring a causal or exclusive

conditional relationship between these elements." Pet. 52 (citing Cockburn Decl. ¶¶ 157–158 and referring to relationship between elements [1.o,1]-[1.o.v] and elements [1.o.vi]-[1.o.viii]). The cited paragraphs 157 and 158 of Dr. Cockburn's declaration summarily posit that a person of ordinary skill in the art would have been motivated to implement the causal relationship. Cockburn Decl. ¶¶ 157–158. The lack of explanation in these paragraphs are not useful and lack sufficient reasoning. *See Velander v. Garner*, 348 F.3d 1359, 1371 (Fed. Cir. 2003) (Board has discretion to accord little weight to broad conclusory statements from expert witness). These paragraphs generally refer back to one of four rationales for applying Bhumkar's teachings about "menu options for interfacing with a webpage preview in the context of Blumenberg's web browser." *Id.*; Pet. 13–18. The so-called "Fourth motivation rationale" is also referred to in footnote 7 on page 46 of the Petition, referencing Section IV.A.4.a, found in the Petition at pages 17–18. Pet. 17–18 (citing Ex. 1003 ¶¶ 77–82). This footnote in the Petition merely contrasts the possible interpretation that the claim requires menu options to be displayed only when the conditions of limitations [1.o.i]–[1.o.v] occur with the combination in which the menu options are associated with and appear with the web page preview. Pet. 46 n.7.

Under this "Fourth motivation rationale," Petitioner has not cured the deficiency noted above in one respect. This rationale proffers the understanding of a person of ordinary skill in the art to appreciate the benefit of "introducing **menu options to the displayed webpage** preview after the duration of the user's touch surpasses Blumenberg's activation threshold." Pet. 18 (citing Cockburn Decl. ¶ 82) (bold emphasis added to original). This rationale alters the timing of display of only the menu options, but does not

propose altering the timing of Blumenberg's display of the *link preview or snippet* to be causally related to determining that the "activation threshold" has been exceeded. *See* Tr. 23:17–25 ("To clarify what we're saying is that the claim's third scenario, collectively, requires all three of the things to happen. And what we're saying is yes the link preview starts earlier. The combination I was talking about doesn't, it doesn't change that."); *See also* PO Resp. 52 (Patent Owner arguing the insufficiency of the allegations, especially noting an unexplained "design option"). Thus, the display of the second web page continues to be causally tied to the "selection threshold" and as such this alternative argument does not satisfy the claim language.

In Reply, Petitioner argues for the first time that in the Blumenberg-Bhumkar-Griffin combination, the user maintaining contact with the touch screen causes the continued display beyond the activation threshold. Reply 17–18. Petitioner cites to the Petition's discussion of limitation [1.o.ii], which is the section of the Petition dedicated to the "duration of the first contact is determined to be greater than the second user-configurable predefined duration." *See* Pet. 42; *but cf.* Pet. 52 (summarily explaining that "Claim 1 would still be obvious under an interpretation requiring a causal or exclusive conditional relationship between these elements" without an explanation of the alleged "causality" between the conditions and functions). In the Petition at page 49, Petitioner repeats the statement made for limitation [1.o.ii], that "when the user maintains the contact for a duration greater than the activation threshold, the web browser remains on the current page and continues displaying the link information." Pet. 49. There is no specific allegation in these pages of the Petition that a determination of "maintains the contact" *causes* the display to "continue displaying." *Id.*

Patent Owner challenges the assertion that "continued display" meets the claims as attorney argument and unsupported by Blumenberg. Sur-reply 18. We agree that the specificity of the contention (that Blumenberg "continues to display" teaches the limitation) was not presented in the Petition as such. Nevertheless, the flaw in this new argument is that there is still no correlation between exceeding the "activation threshold" and the timing at which Blumenberg determines to display the link preview (after 0.2 seconds), and therefore, the function to further display the preview is performed *when* less than all the conditions recited in the third "when" clause have been satisfied.

We also agree with Patent Owner that Blumenberg does not support Petitioner's contention. Sur-reply 18. Petitioner's citation to paragraphs 49 and 51 of Blumenberg as support do not show that Blumenberg "displays" based on meeting the "activation threshold." *See id.* Blumenberg describes the display action in paragraph 49: "the information is displayed after the contact is maintained for at least a predetermined time." Ex. 1004 ¶ 49 (referring to the 0.2 seconds as an example). Unequivocally, Blumenberg displays the link preview after exceeding that threshold (i.e., Petitioner's "selection threshold"). And in paragraph 51 of Blumenberg, in all the activation scenarios on which Petitioner relies, the conditions for display of the link information have already been satisfied. Blumenberg focuses its discussion in this paragraph on what touch conditions must occur to *activate* the hyperlink whose information is already on preview. *Id.* ¶ 51 (describing the condition of breaking contact before or after the predetermined amount of time in order to activate the selected link, already on preview). The only scenario after the "selection threshold" in which Blumenberg describes

holding contact as a condition, is the scenario where when the touch exceeds a second predetermined amount of time, the link preview is removed from display. *Id.* ¶ 49 (removing from display if contact area is not moved for longer than a predetermined amount of time), ¶ 51 ("if the contact is held for longer . . . whatever link information that is displayed is removed…."). Unlike the claims here, the conditions that must be satisfied for a link preview, menu display, and tactile feedback include the satisfaction of a duration different from the one disclosed in Blumenberg.

Furthermore, Petitioner has not shown that when Blumenberg uses the words "continued to be displayed" this means the "display" function that the third "when" clause requires. The "continued display" occurs *after the contact breaks*. *Id.* ("then the user must break contact and tap the link information (which is continued to be displayed after the contact break) to activate the selected link"). One of the conditions of the third "when" clause, is that "the end of the first contact is not detected." Ex. 1001, 103:42. Further, the Petition does not explain Blumenberg's "continued display" sentence as disclosing its dependence on touch duration when the sentence ties the link preview display to how long the link preview has been displayed. Ex. 1005 ¶ 51 ("if the link information was display for more than that amount of time"). Although it seems plausible that Blumenberg employs some kind of timer to account for the duration of the link preview display, whether that display duration timer inherently discloses a touch duration timer, this has not been properly explained in the present record. Tr. 30:10–32:2.

Petitioner further argues in the Reply that as a result of its proffered combination, the full set of three functions –the link information, tactile

feedback, and menu—would occur "only after and as a consequence of the activation threshold." Reply 18. Petitioner relies on Dr. Cockburn's supplemental testimony that states,

> Blumenberg's link information remains on the display after and as a result of the user maintaining contact for a duration greater than the activation threshold, which plainly satisfies a basic when-then conditional relationship, and even a causal conditional relationship, between Elements [1.o.i]-[1.o.v] and Elements [1.o.vi]-[1.o.viii]. . . . In other words, Blumenberg teaches that the webpage preview is maintained on the display, not merely as a random happenstance but "in response to" / "triggered by" a determination that the user's touch contact has been held for a time period beyond the activation threshold (***second user-configurable predefined duration***).

Supp. Cockburn Decl. ¶ 65. This testimony summarily states, without support or factual explanation, that Blumenberg determines to display the link information *as a result of* the user maintaining contact for the required period of time ("activation threshold"). There is no basis provided for this conclusion, and, as discussed above, Blumenberg does not state that "maintaining contact" is a condition for a "continued display" of the preview after the first predetermined amount of time. Additionally, the further *new* contention that maintaining the preview is "triggered by" such a determination is likewise conclusory. We find the testimony inadequate. *TQ Delta, LLC v. CISCO Sys., Inc.*, 942 F.3d 1352, 1359 (Fed. Cir. 2019).

To the extent the Petition may be understood to assert that maintaining contact after the "activation threshold" is a condition that Blumenberg uses to continue the display, that position is underdeveloped and seems contrary to the plain language of the claim. According to Patent Owner, the plain language of the claim, "further displays at least a portion of

the second web page," cannot be read as if it stated "***continuing***" to display a portion of the second web page. Sur-reply 17–18. Petitioner's papers do not provide analysis of the "further display" claim language to support its contention. Petitioner explained its position at oral argument, that Blumenberg is consistent with the understanding that "further display" is "fully consistent with continuing to display." Tr. 10:23–11:15. But this claim scope issue is underdeveloped and unconvincing.

The limitation to "further display" the second web page is rendered superfluous under Petitioner's contention. Under that contention, it does not matter when the instructions to display the web page were issued, so long as we read the claimed "further display" to be synonymous with "maintain the display."[17] This language of the claim also appears inconsistent with Petitioner's position given how the claim refers to displaying web pages. The claim, for instance, recites in all three "when" clauses the condition that the "first web page is displayed," and in the second "when" clause, that the function performed is "replace the display of the first web page with the second web page." Ex. 1001, 102:60–62, 103:18–19, 103:29–31. The claim informs us that the "display of the first web page" (as a noun) in that phrase is an instance when the display of the first web page has occurred, before the displayed page would be replaced with another. If the verb "display" were interpreted as Petitioner adduces, the function of the second

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[17] The parties do not provide explanation of the technical difference between a processor issuing an instruction to display and the device's maintenance on the screen of a static web page. The distinction drawn here is to illustrate how the contention that Blumenberg's "continued display" alleged by Petitioner has not been adequately explained.

"when" clause would be equivalent to stating: "stop displaying the first web page and display the second web page." Such an interpretation would connote that the verb "display" could technically include the first provided view of the web page and any subsequent screen refresh of that same web page. That is not what we have here. When referring to the function (*i.e.*, the verb "display"), what is called for is not the mere screen refresh of a web page that was already displayed. In any event, our discussion here elucidates the gaps in the record that have been raised by Patent Owner in light of the conclusory assertions of Petitioner. Petitioner has the burden to explain how its contentions regarding Blumenberg's "continued" display of the link preview accord with the claim language and are supported by the record. In this case, it has not done so sufficiently and by a preponderance of the evidence. Pet. 49–53; Reply 17–19.

In sum, we have reviewed the arguments presented by Petitioner and Patent Owner and the evidence presented. We are not persuaded that Petitioner has shown by a preponderance of the evidence that the Blumenberg-Bhumkar-Griffin combination teaches the third "when" clause limitation recited in claim 1 and commensurately recited in claim 42. Accordingly, and because of their dependence from these claims, we determine that Petitioner has not shown unpatentability of claims 2, 3, 21, 29–31, 43, 44, 54, and 62–65.

G. Conclusion

As explained above, we have addressed how Petitioner has not shown unpatentability for each independent challenged claim, and thus, none of the challenged claims of the '581 patent have been shown to be unpatentable by a preponderance of the evidence. Consistent with 35 U.S.C. § 318, this

Final Written Decision therefore disposes of all patent claims challenged by Petitioner. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018).

Claims	**35 U.S.C. §**	**Reference(s)/Basis**	**Claims Shown Unpatentable**	**Claims Not Shown Unpatentable**
1–3, 21, 29–31, 42–44, 54, 62–65	103	Blumenberg, Bhumkar, Griffin		1–3, 21, 29–31, 42–44, 54, 62–65
Overall Outcome				1–3, 21, 29–31, 42–44, 54, 62–65

III. ORDER

In view of the foregoing, it is hereby:

ORDERED that claims 1–3, 21, 29–31, 42–44, 54, and 62–65 of the '581 patent have not been proven to be unpatentable; and

FURTHER ORDERED because this is a Final Written Decision, parties to this proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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