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Paper 38
Entered: November 29, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

NOBOTS LLC,
Patent Owner.

IPR2022-00940
Patent 9,595,008 B1

Before JOSIAH C. COCKS, BARBARA A. PARVIS, and ROBERT J. WEINSCHENK, *Administrative Patent Judges.*

COCKS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

Nobots LLC - **Ex. 2021**
IPR2026-00429
Google LLC v. Nobots

I. INTRODUCTION

A. Background

Google LLC ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–20 ("the challenged claims") of U.S. Patent No. 9,595,008 B1 (Ex. 1001, "the '008 patent"). We instituted the petitioned review. Paper 13 ("Institution Decision" or "Inst. Dec.").[1]

Nobots LLC ("Nobots" or "Patent Owner") filed a Patent Owner Response (Paper 18, "PO Resp.") to oppose the Petition. Petitioner filed a Reply (Paper 24, "Pet. Reply") to the Patent Owner Response. Patent Owner filed a Sur-reply (Paper 28, "PO Sur-reply") to the Reply. We conducted an oral hearing on August 31, 2023. A transcript has been entered into the record. Paper 34 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–20 of the '008 patent. We determine Petitioner has shown by a preponderance of the evidence that claims 1–17 and 20 are unpatentable. Petitioner, however, has not shown by a preponderance of the evidence that claims 18 and 19 are unpatentable.

[1] We note that prior to our Institution Decision, Patent Owner filed a Preliminary Response (Paper 7) and, with authorization from the panel, Petitioner filed a Preliminary Reply to Patent Owner's Preliminary Response (Paper 10, "Pet. Prelim. Reply") and Patent Owner filed a Preliminary Sur-reply (Paper 11, "PO Prelim. Sur-reply"). Those additional authorized briefings addressed, in relevant part, matters of claim construction, and are referenced in this Final Written Decision.

B. Related Matters

The parties state that the '008 patent was asserted in *Nobots LLC v. Google LLC*, Civil Action No. 6:21-cv-01290 (W.D. Tex., Waco Division). Pet. xi; Paper 5, 1.[2] Patent Owner further states that the '008 patent was asserted in *Nobots LLC v. Google LLC*, No. 1:22-cv-00585 (W.D. Tex., Austin Division). Paper 6, 1. Patent Owner also identifies IPR2022-00941 as a related proceeding. Paper 6, 1.[3]

C. The '008 Patent

The '008 patent is titled "Systems, Methods, Apparatus for Evaluating Status of Computing Device User." Ex. 1001, code (54). The Abstract of the '008 patent is reproduced below:

> Methods, systems and apparatus for assessing the likely user status of a client computing device interacting with a server where the computing device is in bi-directional operative communication with the server, wherein the likely user status is one of a human operator or a computer executable program such as a "bot". By presenting issued data from the server to the client computing device and monitoring at least some of the data generated at the client computing device in response to the issued data, a comparison can be made between the monitored data and model data relating to human interaction with or in response to the issued data. The results of the comparison can lead to a value that represents the likelihood that the monitored data results from human interaction with or in response to the issued data. Modeled data includes, but is not limited to, data indicative of

[2] In its filing of updated mandatory notices, Patent Owner indicates that the noted proceeding is "now terminated." Paper 6, 1.

[3] The Petition in IPR2022-00941 was filed on the same day as the Petition in the instant proceeding, and involves a related patent (U.S. Patent No. 10,423,885 B2).

> human interaction with a computing environment, whether active or passive.

Id. at code (57).

The '008 patent further summarizes its disclosure as being "for assessing the likely user status of a computing device interacting with a server where computing device is in bi-directional operative communication with the server wherein the status is one of a human operator or a computer executable program (also referred to herein as a 'bot')." *Id.* at 2:13–18.

By way of background, the '008 patent explains that it became necessary for builders of web sites to develop "tests" to distinguish between human users and bots. The '008 patent further describes the following:

> Carnegie Mellon University coined the term "CAPTCHA" (Completely Automated Public Turing test to tell Computers and Humans Apart) for these types of tests. A common type of CAPTCHA requires that the user type the letters, digits or characters of a distorted image appearing on the screen. The objective is to create an image that a bot cannot easily parse but that is discernable by a human. Such efforts have been successful in preventing non-adaptive software from recognizing the imaged characters, but people intent on abusing these sites have designed ways to circumvent the CAPTCHA, such as through specially tuned character recognition programs.

Id. at 1:22–33.

"Current CAPTCHA technology is visual or auditory in nature, requiring the human user to answer a test that should be simple to most humans but difficult for non-humans, e.g., bots." *Id.* at 1:54–56. The '008 patent describes additional assessment measures, beyond an auditory or visual CAPTCHA test, involving a comparison of "acquired and/or available data relating to the operation of the computing device to suitable models

embodying human user derived data (model data)." *Id.* at 2:18–21. "[A]cquired" data can include "active" data such as "pointing device vector movements," "key stroke combinations," or "time differentials" between "stimulus" (e.g., dialog box displays or radio buttons on a computer screen) and a user response's response to such stimulus. *Id.* at 2:60–3:5. "[A]vailable" data can include "[p]assive" data such as "browser cookies," "destination IP histories," and a computer's "IP address." *Id.* at 3:9–17. Assessment of such data may be used to establish "a probability value" as to whether a particular operator is a human or a bot. *Id.* at 2:18–25.

D. Challenged Claims

Petitioner challenges claims 1–20 of the '008 patent. Claims 1 and 19 are independent claims. Claim 1 is representative and is reproduced below:

> 1. A method for assessing a confidence level that an operator of a client computing device interacting with a server is a human being rather than an autonomic computer application, the method comprising:
>
> a) a single user of a client computing device requesting data from a server;
>
> b) the server presenting data issued by the server to the client computing device;
>
> c) monitoring at least some data generated by the user at the client computing device in response to the issued data;
>
> d) comparing the monitored data to model data relating to human interaction with or in response to the issued data; and
>
> e) generating a value that represents a confidence level that the monitored data is a result of human interaction on the client computing device rather than that of an autonomic user with or in response to the issued data.

Ex. 1001, 5:35–5:52.

E. Alleged Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 6–18	102/103	Willner[4]
1–18, 20	103	Willner, Kitts[5]
1–18, 20	102/103	O'Connell[6]
1–18, 20	103	O'Connell, Kitts
19, 20	102/103	Kitts

Pet. 1.

F. Testimonial Evidence

Petitioner relies on the Declaration (Ex. 1003) and Reply Declaration (Ex. 1042)[7] of Daniel P. Lopresti, Ph.D.

Patent Owner relies on the Declaration of Dr. Samuel Russ (Ex. 2011).[8]

II. ANALYSIS

A. Principles of Law

A petition must show how the construed claims are unpatentable under the statutory grounds it identifies. 37 C.F.R. § 42.104(b)(4).

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[4] U.S. Patent Application Publication No. US 2009/0024971 A1 published Jan. 22, 2009 ("Willner," Ex. 1005).

[5] U.S. Patent Application Publication No. US 2008/0114624 A1 published May 15, 2008 ("Kitts," Ex. 1009).

[6] U.S. Patent Application Publication No. US 2007/0239604 A1 (published Oct. 11, 2007) ("O'Connell," Ex. 1007).

[7] Exhibit 1042 was submitted in conjunction with Petitioner's Reply.

[8] Patent Owner indicates that a prior Declaration of Dr. Samuel Russ (Ex. 2001) is withdrawn. PO Resp. ii.

To establish anticipation under 35 U.S.C. § 102, "all of the elements and limitations of the claim must be shown in a single prior art reference, arranged as in the claim." *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001).

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of 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 skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In an instituted *inter partes* review, a petitioner has the burden to show unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

B. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom*

Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that a person of ordinary skill in the art at the time of the invention of the '008 patent "would have had a bachelor's degree in computer science or a related field with coursework relating to computer science, plus two years' academic and/or industry experience in computer security. More education could substitute for experience, and vice versa." Pet. 4 (citing Ex. 1003 ¶¶ 36–40). Patent Owner does not dispute this proposed level of skill. PO Resp. 2.

We adopt Petitioner's proposal as reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

C. Claim Construction

We construe claims in the same manner used in a civil action under 35 U.S.C. § 282(b) "including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b). When applying that standard, we interpret the claim language as it would have been understood by one of ordinary skill in the art in light of the specification. *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1279–80 (Fed. Cir. 2017). Thus, we give claim terms their ordinary and customary meaning as understood by an ordinarily skilled artisan. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec*

Motor Corp. v. Zhongshan Broad Ocean Motor Co., 868 F.3d 1013, 1017 (Fed. Cir. 2017).

1. Mis-lettered Steps

As we discussed in the Institution Decision, both parties identified a disparity in the lettering of steps in dependent claims 6, 11, 12, and 15–18 that is said to have arisen during prosecution in which claim 1 was amended to add a new step "a)." *See* Inst. Dec. 8–9. We noted the following in that respect:

> [C]laim 1 originally included letters steps "a)" through "d)," but after amendment, those steps became steps "b)" through "e)." *See* Pet. 5; Prelim. Resp. 15–18. Claims 6, 11, 12, and 15–18, however, which refer to at least one of the original lettered steps "a)" through "d)," were not updated to reflect the resulting shift in step lettering. Patent Owner contends that the "mistake" is clear, and the claims should be regarded with the "reasonable correction" of simply regarding the steps referenced in claims 6, 11, 12, and 15–18 as having been "shifted forward by one letter." Prelim. Resp. 15. For its part, Petitioner acknowledges that those claims "were never updated," but expresses that we need not "decide between the possible interpretations" as the "Petition's grounds meet the claims under both interpretations." Pet. 5.

Id.

As was consistent with the position of both parties, we concluded that the record reasonably conveyed that claims 6, 11, 12, and 15–18 should be regarded "as having been 'updated' or corrected in the manner made explicit by Patent Owner and implicitly acknowledged by Petitioner in this proceeding." *Id.* In its Patent Owner Response, Patent Owner reiterates its view that the pertinent claims should be regarded as updated in that manner.

PO Resp. 12–14. During the oral argument, Petitioner did not express any objection to that conclusion when questioned about it. *See, e.g.*, Tr. 26.[9] We further note that in similar circumstances where a "conspicuous" error appears in claims of a patent and whose correction is not subject to reasonable debate, the Federal Circuit determined that the proper course of action is for the Board to treat the claims as corrected. *See Fitbit, Inc. v. Valencell, Inc.*, 964 F.3d 1112, 1119–20 (Fed. Cir. 2020) (holding that the Board erred in not correcting a "conspicuous" and undisputed error related to antecedent basis). We conclude that treating the claims as corrected is the appropriate approach here.

Accordingly, as a part of this Final Written Decision, we regard the claims corrected or updated in the manner noted above.

2. Claim 20

Claim 20 is reproduced below:

> 20. The method of claim 1 wherein the interest data consists of available data.

Ex. 1001, 6:58–59.

Thus, on its face, claim 20 states that it depends from claim 1. Petitioner acknowledges that claim 20 "recites dependency from claim 1," but notes that "there is no antecedent basis in claim 1 for 'the interest data' in claim 20." Pet. 60. Petitioner also alternatively contends that claim 20 may instead be interpreted to depend from independent claim 19. *Id.* In its Reply, Petitioner is more equivocal in its belief that claim 20 should be

[9] We also observe that Petitioner provides no further discussion of this matter as a part of its Reply (Paper 24). *See generally* Pet. Reply.

interpreted to depend from claim 19. *See* Pet. Reply 25–27.[10] In that respect, Petitioner re-emphasizes the antecedent basis issue arising in connection with the recitation of "the interest data" in claim 20. *Id.* at 26. Petitioner also postulates that during prosecution a typographical error arose in connection with claim 21 introduced by amendment, which ultimately issued as claim 20. *Id.* at 27 (citing Ex. 1042 ¶ 67).[11] Patent Owner contends that claim 20 depends from claim 1 as written, and disagrees with Petitioner's view that claim 20 instead was intended to depend from claim 19. Patent Owner supports its position with citation to the prosecution history (Ex. 1002) of the '008 patent, and also Dr. Russ's Declaration (Ex. 2011). PO Resp. 14–16 (citing Ex. 1002, 84–85; Ex. 2011 ¶¶ 68–70); *see also* PO Sur-reply 12 ("Petitioner is mistaken that claim 20 depends from claim 19."). Patent Owner contends that "a POSA[12] would understand that 'the interest data' from claim 20 refers to "the model data' of claim 1. *Id.* at 15. Patent Owner also contends that Petitioner's and Dr. Lopresti's "speculation" that a typographical error occurred is insufficient to outweigh the evidence of record that "patentee intended claim 20 to depend from claim 1." PO Sur-reply 13.

The parties' positions as to the appropriate dependency of claim 20 are not in alignment. Patent Owner's assessment of the prosecution history (buttressed by Dr. Russ's Declaration) provides a credible basis for

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[10] Petitioner applies prior art to claim 20 on the basis of either proposed dependency. *See, e.g.*, Pet. 32–33, 49, 60–61; Pet. Reply 25–27.

[11] "As issued claims 19-20 were originally filed as claims 20-21 (POR, 15), the error the applicant made is simple: a '0' was incorrectly omitted and 'The method of claim 20' became 'The method of claim 2'." Pet. Reply 27.

[12] "POSA" is an acronym for person of ordinary skill in the art.

concluding that claim 20 should be understood as depending from claim 1 in the manner that it is written, even if with the unconventional circumstance of intervening independent claim 19 and the antecedent concern in referring to "interest data." *See* PO Resp. 14–16; PO Sur-reply 12. As Patent Owner notes, the record reflects that during prosecution, Patent Owner actively grouped pending claims 3–19 and 21 together as being dependent on pending "independent claim 2," which ultimately became independent claim 1 in the '008 patent. *See* PO Resp. 15 (citing Ex. 1002, 84–85; Ex. 2011 ¶¶ 68–70). Pending claim 21 became claim 20 in the '008 patent and was presented as being dependent on independent claim 1.

We are mindful that Petitioner's proposed view has, perhaps, some facial appeal in seemingly addressing the potential "interest data" antecedent matter, but, at its core, the view rests on speculation by both Petitioner and Dr. Lopresti that an unintended typographical error occurred in the drafting of proposed claim 21 that became claim 20 of the '008 patent, and was maintained during prosecution. *See* Pet. Reply 25–27. As noted above, however, evidence of record in connection with the underlying prosecution of the '008 patent (*see* Ex. 1002, 84–85) conveys that the patentee did not regard the claim dependency that emerged in the '008 patent as incorrect, and instead was the intended outcome. Accordingly, we conclude that the evidence of record more readily supports Patent Owner's view that claim 20 should be regarded as depending from claim 1, as written.

Accordingly, we construe claim 20 as depending from claim 1.

3. Claim Terms

In the Institution Decision, we expressly addressed the meaning of some claim terms. To that end, we agreed with Petitioner that the '008

patent sets forth the ordinary and customary meaning of the following terms: "model data"; "available data"; "issued data;"; "monitored data"; and "interest data." Inst. Dec. 10. We also discussed in more detail the meaning of the term "issued data," and also addressed the meaning of the terms "single user instance" and "acquiring interest data." *Id.* at 11–13, 30–31. We expressly address the meaning of some of those terms in some capacity below as a part of this Final Written Decision.

a) "issued data"

As to "issued data," in the Institution Decision, we noted that the '008 patent defines the term as "data generated by a server or other computing device that is not the same as the computing device for which the assessment as to user status is being performed." Inst. Dec. 11 (citing Ex. 1001, 3:33–37). With that definition in mind, we expressed the following:

> It is apparent from the Petition, as also explained in Petitioner's subsequent briefing,[13] that Petitioner's position is that data collected from one or more "webpages" of a website that is issued from a server associated with that website may constitute the issued data encompassed by the claims. *See, e.g.*, Pet. Prelim. Reply 3. On this record we agree with that position. In particular, it follows readily that such data, even if collected from more than one webpage of a website, is regarded reasonably as constituting "data generated by a server or other computing device that is not the same as the computing device for which the assessment as to user status is being performed."

Inst. Dec. 11–12 (quoting Ex. 1001, 3:33–37).

Although Patent Owner initially expressed disagreement with Petitioner's position as a part of its Preliminary Sur-reply, as a part of the trial now instituted, Patent Owner no longer presents any dispute as to that

[13] That "subsequent briefing" is Petitioner's Preliminary Reply.

position. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (explaining that a patent owner forfeits an issue presented in its preliminary response if it fails to renew the issue in its response after trial is instituted). With respect to this Final Written Decision, we maintain our above-noted understanding of the meaning of the term "issued data."

b) "single user instance"

In the Institution Decision, we addressed the meaning of "single user instance" to the extent that we disagreed with Patent Owner's position that the term "means only a single webpage to the exclusion, for instance, of a source that is a website and includes multiple webpages." Inst. Dec. 12–13. During trial, neither party raises any objection to that expressed understanding of the meaning of "single user instance." Accordingly, we maintain that understanding of the term "single user instance."

c) "acquiring interest data"

In the Institution Decision, we expressed the following in connection with the term "acquiring interest data" that appears in claim 19:

> We discern that there is considerable ambiguity on the present record as to the meaning of "acquiring interest data," and, in particular, whether the pertinent step is accounted for in Kitts based only on passive data. For instance, although, as Petitioner notes, the '008 patent defines "interest data" as "active ***or passive*** data" (Pet. Prelim. Reply 3 (quoting Ex. 1001, 3:41– 42)), the patent also seems to define "acquired data" and "its equivalents and verb forms" as constituting "a type of active data" (Ex. 1001 3:25–32). On this record, there is uncertainty as to why the recitation in claim 19 of "acquiring" a type of data, i.e., interest data, should take on a general meaning that is divorced from the particular definition of "acquired data" and its "verb forms" provided in the '008 patent. *See* Pet. Prelim. Reply 3–4; Ex. 1001, 3:25.

> Patent Owner's view that "acquiring interest data" constitutes a "verb" form of "acquired data" where the particular type of data involved is "interest" data seemingly has merit. Pet. Prelim. Reply 3–4. Yet, left wanting from Patent Owner's position is how the confusion that then arises from statements in the specification as to "interest data" can be so readily dismissed. In particular, consider the following statement in the specification of the '008 patent: "'*interest data' . . comprises* active or *passive data*, whether available or *acquired*, that correlates to any data within model data." Ex. 1001, 3:41–43 (emphasis added); *see* PO Prelim. Sur-reply 4. A plausible reading of that statement conveys that the '008 patent specifically contemplates that interest data may be passive data even if it is acquired.

Inst. Dec. 30–31.

In its Patent Owner Response and its Patent Owner Sur-reply, Patent Owner discusses at length the meaning of "acquiring interest data." *See* PO Resp. 3–12; PO Sur-reply 7–12. In short, Patent Owner contends that the Specification of the '008 patent explicitly sets forth that "'acquired data' (including its verb forms and equivalents)" necessarily must include "active data," such that a person of ordinary skill in the art would understand "acquiring interest data" as necessarily acquiring at least some interest data that is active data. *See, e.g.*, PO Resp. 3–12; PO Sur-reply 7–12. In so presenting that view, Patent Owner notes that the '008 patent includes "repeated association of 'acquired' and 'acquiring' with 'active data.'" PO Resp. 5.

With respect to the sentence appearing at column 3, lines 41–43 of the '008 patent, Patent Owner contends, in-part, the following:

> [A] POSA would not understand the cited statement—"comprises **active or passive data**, <u>whether available or acquired</u>"—to mean that "acquired passive data" can exist. [Ex. 2011] ¶59. Instead, POSA would understand that the clause

> "whether available or acquired" to simply mean that the preceding "active…data" may be "acquired" and the preceding "passive data" may be "available." *Id.* In other words, a POSA would understand that the "whether" clause simply clarifies that "interest data" may include "active data" (whether *acquired* or not) and/or "passive data" (whether *available* or not). *Id.* This is the only interpretation consistent with the express definitions of "available data," "acquired data," "active data" and "passive data" and their uniform usage in the specification. *Id.*

PO Resp. 9.

In considering Patent Owner's explanation, and upon further reflection, we agree with Patent Owner's reading of the pertinent sentence. In that regard, consistent with the remainder of the Specification of the '008 patent, it follows that the noted sentence does not alter the contours of "acquired" data to also encompass "passive" data where that premise is entirely absent from other portions of the Specification. Rather, as Patent Owner explains, the sentence is consistent with the understanding that it is "active data" that is connected to the word "acquired" and "passive data" that is connected to the word "available." *See, e.g., id.* Patent Owner's explanation alleviates the ambiguity that was postulated in the Institution Decision.

We have considered Petitioner's views to the contrary (*see, e.g.*, Pet. Reply 21–25) but find them unavailing. In particular, Petitioner does not reconcile its position that, although acknowledging that "acquired data" is defined in the '008 patent, the term "acquiring" is not so defined and should be regarded as an "individual word" whose meaning is somehow entirely unconnected to "acquired." *See, e.g.*, Pet. Reply 21. We note, as we did in the Institution Decision, that the '008 patent states that "acquired data" and "its equivalents and verb forms" is "a type of active data." *See* Inst. Dec. 30 (citing Ex. 1001, 3:25–32). We are not persuaded by Petitioner's view (*see,*

e.g., Pet. Reply 21–22) that "acquiring" is somehow not immediately identifiable as a verb form of "acquired." *See* PO Sur-reply 8. We determine that, in the context of the '008 patent, it clearly is.

Having considered the competing views of Petitioner and Patent Owner, we conclude that Patent Owner's construction of the term "acquiring interest data" is consistent with, and supported by, the Specification of the '008 patent. In that regard, we conclude that, as is advanced by Patent Owner, "acquiring interest data" must encompass the retrieval of some active data.

d) Remaining Claim Terms

We determine that it is unnecessary to expressly construe any other claim term. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (Only terms in controversy must be construed and only to the extent necessary to resolve the controversy.); *see also Nidec*, 868 F.3d at 1017 (citing *Vivid Techs* in the context of an *inter partes* review).

D. Ground Based on Willner Alone

Petitioner contends that claims 1–3 and 6–18 are either anticipated or would have been obvious based on Willner. Pet. 6–27.

1. Summary of Willner

Willner is titled "Cursor Path Vector Analysis for Detecting Click Fraud." Ex. 1005, code (54). Willner's Abstract is reproduced below:

> A system and method for detecting click fraud where data is received corresponding to a tracking movement of a cursor on a web page. The movement of the cursor is associated with at least one vector. The at least one vector represents at least a portion of the cursor movement. A confidence level useable in

> the determination of click fraud is determined. The confidence level is responsive to analysis of the at least one vector representing at least a portion of the cursor movement.

Id. at code (57).

Willner's Figures 2 and 3 are reproduced below:

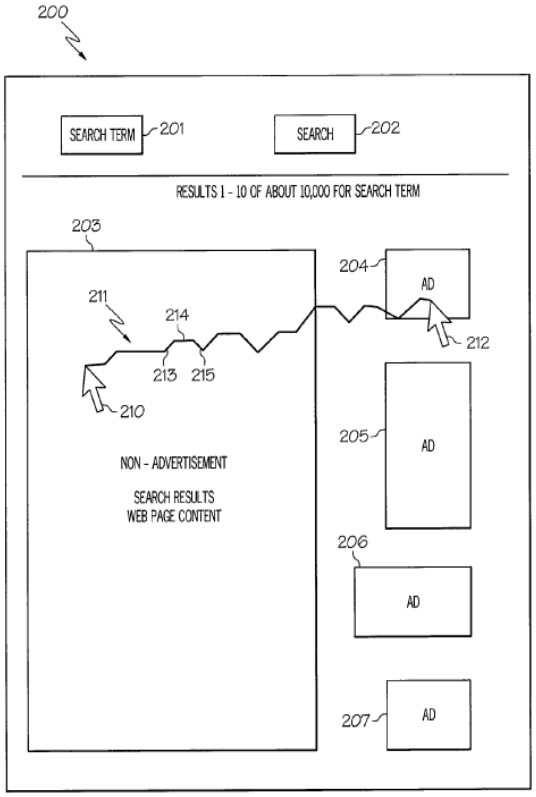

FIG. 2

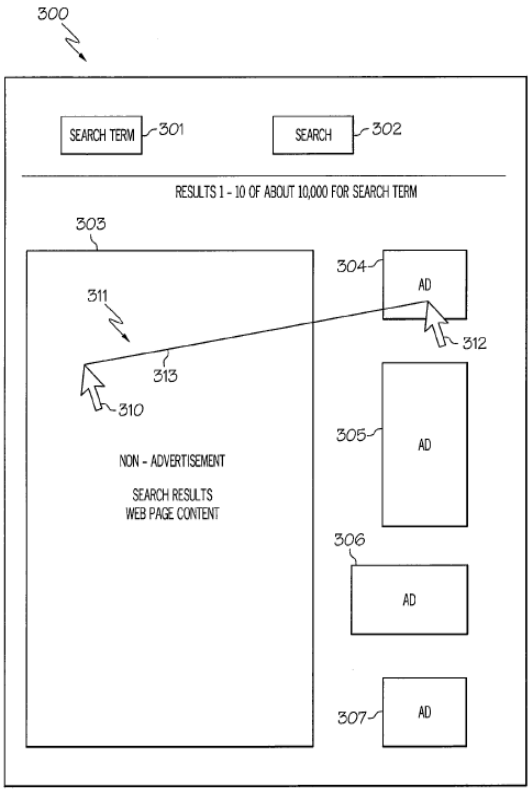

FIG. 3

Figure 2 above shows a diagram of a web page illustrating a human-like cursor movement according to an embodiment. *Id.* ¶ 17. Figure 3 above is a diagram of a web page showing cursor movement resembling click fraud, i.e., movement by a bot, according to an embodiment. *Id.* ¶ 18. The path traveled by a cursor (211 in Figure 2, 311 in Figure 3) may be mapped into vectors and analyzed to assess whether the cursor movement has been provided by a human operator or a bot. *Id.* ¶¶ 46–48. Willner explains the following:

> [I]n embodiments according to the present invention, the vectors associated with a journey to initiate a click may be stored as a linked list of vectors on a server hosting the web page associated with the click action. These vectors may each be associated with a storage or hash code, where the hash can be decoded to provide at least some identifying information about the vector. The journey to initiate a click can be decoded to provide at least some identifying information about the vector. The journey to initiate a click can then be represented as a sequence of hash codes. Subsequent clicks that implement analogous hash sequence patterns can then be dismissed as an automation tool attempting to simulate the actions of a user, as it would be extraordinarily difficult for an automation tool to implement code to derive unique and discernible user patterns that would map to an individualistic set of vectors.

Ex. 1005 ¶ 38.

2. Claims 1–3 and 6–17

Petitioner lays out in detail where it believes all the features of claims 1–3 and 6–17 are found in Willner. Pet. 9–26. During trial, Patent Owner presented no arguments challenging Petitioner's proposed ground of unpatentability of claims 1–3 and 6–17 based on Willner. During oral argument, upon questioning, counsel for Patent Owner expressed that "We did not present any arguments on Claims 1 to 3, 6 to 17 on Ground 1." Tr. 30:3–4.

We determine that Petitioner, via its Petition, has established adequately where all the features of claims 1–3 and 6–17 are present in Willner. *See* Pet. 9–26. Given that determination, and in the absence of any argument during trial challenging Petitioner's ground of unpatentability based on Willner as to those claims, we conclude that Petitioner has shown by a preponderance of the evidence that claims 1–3 and 6–17 are unpatentable under 35 U.S.C. § 102 based on Willner.

3. Claim 18

Claim 18 recites "[t]he method of claim 1 further comprising repeating a)-c) and comparing the first instance of the value of d) to the second instance of the value of d)." Ex. 1001, 6:41–43.

a) Summary of Petitioner's Arguments

With respect to claim 18, in its Petition, Petitioner contends the following:

> Willner discloses or renders obvious repeating [1A]-[1E]. In doing so, Willner compares hash values of first and second click movements, which are generated in the comparison of [1D]. A POSA would further have been motivated to compare confidence values generated in [1D]-[1E] for first and second clicks to identify scenarios where a first click is too close to call but a subsequent click lowers the confidence such that click fraud is indicated.

Pet. 26–27 (citing Ex. 1005 ¶¶ 38–39; Ex. 1003 ¶¶ 115–116).

In its Reply, Petitioner contends that if claim 18 is interpreted as reciting "of d),"[14] then comparing Willner's hash values is sufficient to account for claim 18. Pet. Reply 17–18. Alternatively, Petitioner contends that if claim 18 is changed to recite "of e)," then the limitation "was within the POSA's knowledge" and that "[t]he only possible support claim 18 is via POSA's background knowledge that comparing confidence values from

[14] As discussed above, the record clearly reflects that the step lettering in claim 18 should be shifted forward, such that each of steps a)–d) are understood to refer to each of steps b)–e) of claim 1. *See supra* § II.C.1. Nevertheless, as both parties have presented alternative theories as to claim 18, i.e., interpreted as reciting either "of d)" or "of e)," we consider below both scenarios.

repeated tests of user activity for bot detection was routine and readily apparent." *Id.* at 18. Petitioner also contends the following:

> It was common knowledge that statistical classification systems like Willner's have a "reject option" to defer decisions on difficult cases with higher uncertainty about class membership, by waiting for a later input with lower uncertainty. EX1042, [0048]-[0050] (citing corroborating EX1044, 42; EX1043,19, 26-27; EX1045, 24); EX1040, 27 (Nobots's expert lacks experience with statistical classifiers). POSAs knew to "repeat the steps" of testing and analyzing subsequent inputs "to make a more accurate determination." Petition, 25-26, citingEX1003, [0110]-[0111], quoting Broder, [0059]. Applying the POSA's background knowledge to Willner thus meets claim 18.

Id. at 19.

b) Summary of Patent Owner's Arguments

In its Patent Owner Response, Patent Owner first contends the following as to claim 18:

> First, Petitioner ignores the fact that claim 18 contains a clear error and that a POSA would understand its claim steps to be shifted forward by one letter to refer to first and second instance values "of e)" (rather than "of d)"). Step [1E] recites "a value that represents a confidence level" and, therefore, the first instance and second instance of the value "of e)" must also represent a confidence level. Russ-Declaration ¶74. Willner's hash values do not "represent a confidence level," but instead simply represent mouse vectors. *Id.* (citing Ex-1005 ¶¶[0038]-[0039]). Thus, Willner does not disclose claim 18 under the appropriate construction.

PO Resp. 18.

As also noted by Patent Owner (*id.* at n.9), in the Institution Decision, we expressed that "we do not discern, at this time, that either Petitioner or Dr. Lopresti provides adequate explanation as to why Willner's 'hash

values' are understood to be representative of that confidence level." Inst. Dec. 20–21.

Patent Owner also alternatively contends the following:

> Second, Willner still would not satisfy the claim even if claim 18 were not corrected. Russ-Declaration ¶75. In that scenario, the claim would ***still*** require the first and second values to be "of d)." *Id.* Because [1D] recites "comparing the monitored data to model data," first and second values "of d)" would have to be generated based on that claimed comparison. *Id.* However, the hash values identified by Petitioner are generated based on mouse vectors, not any form of comparison. *Id.* (citing Ex-1005 ¶¶[0038]-[0039]). In other words, while the hash values are compared *to one another* as part of Willner's fraud detection, those hash values are not themselves generated from any sort of comparison. *Id.* Thus, the hash values would not satisfy claim 18 even if the first and second values were "of d)". *Id.*

PO Resp. 18–19.

In its Sur-reply, Patent Owner contends that Willner does not anticipate claim 18 for the following reasons:

> <u>If claim 18 recites "of d)":</u> Contrary to Petitioner's representation (Reply, 17-18), Nobots disputes that Willner's "hash values are generated *as part of the step* meeting [1D]." Paper 18 ("Response"), 18-19. The "hash values" are clearly generated *before* any comparison occurs, not as "part of" a comparison. *Id.* (citing Ex-1005 ¶¶[0038]-[0039]). That there is "no antecedent 'value' recited in [1D]" only shows that the claim must be corrected; it certainly does not mean that the "value of d)" can somehow be created *before* the claimed comparison.
>
> <u>If claim 18 recites "of e)":</u> Petitioner does not dispute that Willner's hash values do ***not*** "represent a confidence level." *Id.*, 18; Reply, 17-18; [Inst. Dec.], 20-21.

PO Sur-reply 1.

Patent Owner also argues that Petitioner has not shown that claim 18 would have been obvious over Willner. *Id.* at 2–5. In so arguing, Patent

Owner contends that Petitioner relies on improper new arguments and evidence in its Reply that are not present in the Petition in attempting to demonstrate the obviousness of claim 18. *Id.* at 2. Patent Owner further argues that even considering Petitioner's new arguments and evidence (1) Patent Owner has disputed that the pertinent requirements of claim 18 were "within the POSA's knowledge," are accounted for by "common knowledge," or are based on a "known technique," and (2) Petitioner's arguments lack adequate supporting evidence. *Id.* at 2–5.

c) Discussion

(1) Interpreting claim 18 as reciting "of e)"

At the outset, we note that the record demonstrates that claim 18 should be understood to refer to "of e)." *See supra* § II.C.1. Based on that understanding, claim 18 requires the comparison of a first instance of a value that represents a "confidence level" that monitored data is the result of human activity with a second instance of such a value. In our Institution Decision, we saw merit in Patent Owner's preliminary arguments that the Petition does not adequately account for what is required by claim 18. *See* Inst. Dec. 20–21. Specifically, we noted that, in connection with Petitioner's positions in the Petition, "[a]lthough Willner separately discusses assessment of a confidence level (*see, e.g.*, Ex. 1005, code (57)), we do not discern, at this time, that either Petitioner or Dr. Lopresti provides adequate explanation as to why Willner's 'hash values' are understood to be representative of that confidence level." *Id.*

Patent Owner presents similar arguments as a part of its Patent Owner Response and Patent Owner Sur-reply, making persuasive challenges as to why Willner's hash values amount to the first and second instances of values

of a confidence level that are compared as is required by claim 18 (in its "of e)" interpretation). *See* PO Resp. 18 ("Willner's hash values do not 'represent a confidence level,' but instead simply represent mouse vectors." (citing Ex. 1005 ¶¶ 38–39)); PO Sur-reply 1 ("Petitioner does not dispute that Willner's hash values do not 'represents a confidence level.'" (citing PO Resp. 18; Pet. Reply 17; Inst. Dec. 20–21)).

As noted above, in its Reply, Petitioner now advances a different theory than was offered in the Petition as to the unpatentability of claim 18. In lieu of any reliance on Willner's hash values to account for claim features, Petitioner now presents a theory that based on a "POSA's background knowledge . . . comparing confidence values from repeated tests of user activity for bot detection was routine and readily apparent." Pet. Reply 18 (citing Ex. 1042 ¶ 47). Petitioner also contends the following:

> It was common knowledge that statistical classification systems like Willner's have a "reject option" to defer decisions on difficult cases with higher uncertainty about class membership, by waiting for a later input with lower uncertainty. EX1042, [0048]-[0050] (citing corroborating EX1044, 42; EX1043, 19, 26-27; EX1045, 24); EX1040, 27 (Nobots's expert lacks experience with statistical classifiers). POSAs knew to "repeat the steps" of testing and analyzing subsequent inputs "to make a more accurate determination." Petition, 25-26, citing EX1003, [0110]-[0111], quoting Broder, [0059]. Applying the POSA's background knowledge to Willner thus meets claim 18.

Pet. Reply 18–19.

Petitioner, thus, now presents a general theory that "background knowledge," "common knowledge," and "routine technique" to account for comparing confidence values as a part of Willner's disclosure interpretation involving "of e)." *See, e.g.*, Pet. Reply 18–19. Petitioner's new theory relies

on argument and evidence (Exs. 1042–1045) newly presented as a part of the Reply.

As an initial matter, we agree with Patent Owner that Petitioner's new theory is essentially an attempt to "improperly gap-fill" inadequacies of the Petition. *See* PO Sur-reply 2–5. Petitioner expressed in its Petition that it was aware of both possible interpretations of claim 18 and proposed grounds of unpatentability for claim 18 that "meet the claims under both interpretations," i.e., either "of d)" or " of e)" in claim 18. *See* Pet. 5; *see also* Ex. 1003 ¶ 167 ("Willner meets claim 18, regardless of whether the 'a)-c)' and 'd)' recited in claim 18 refer to [1A]-[1D] or instead to [1B]-[1E]"). Petitioner's approach in the Petition was to rely on Willner's "hash values" to account for claim 18. *See, e.g.*, Pet. 26–27. In response to Patent Owner's arguments that those hash values do not constitute values that represent a "confidence level" as required by claim 18 (*see, e.g.,* PO Resp. 18), Petitioner has changed theories mid-stream to focus on the "background knowledge" of a skilled artisan in ascertaining and comparing values of confidence levels as required by claim 18.

Although a petitioner may respond to patent owner's arguments as a part of a Reply (*see* 37 C.F.R. § 42.23), it is not appropriate in a reply to introduce entirely new argument and evidence that is necessary to address evidentiary gaps successfully identified by a patent owner, and which could have been previously presented by a petitioner. *See also* Consolidated Trial Practice Guide (Nov. 2019), 73 ("Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g., to make out a prima facie case of unpatentability.") To that end, we do not regard Petitioner's Reply on this matter to be properly responsive to either the Patent Owner Response or the Institution Decision. We conclude that

Petitioner's new argument and evidence presented in the Reply in connection with claim 18 are improper and untimely.

Nevertheless, even considering Petitioner's new argument and evidence on the matter, we note that Petitioner's proposed approach presented in the Reply as to why Willner's teachings coupled with common or general knowledge would have led a skilled artisan to the requirements of claim 18 is, in our view, unmoored from the actual claim requirements of claim 18. Claim 18 (interpreted to recite "of e)") requires repeating certain steps set forth in claim 1: to generate first and second values that represent confidence levels that monitored data is a result of human interaction on a client computing device rather than that of an autonomic user with or in response to issued data, and then comparing those values. We take note of Patent Owner's contention, and agree with it, that Petitioner's new obviousness theory is "untethered from underlying facts of data in evidence." *See* PO Sur-reply 4. Patent Owner also contends the following:

> Even if this improper argument and evidence is considered, at best it could demonstrate merely that POSAs knew to "defer decisions on difficult cases" and "wait[] for a later input with lower uncertainty." Reply, 19. But claim 18 not only requires repeating claim steps, but also ***comparing*** values. None of the new art discloses comparing as claimed. Petitioner is thus ***still*** left without any evidence that comparing confidence values was known in the art. Because Petitioner fails to provide any evidence that comparing confidence values was known in the art, Petitioner cannot demonstrate that claim 18 is unpatentable.
>
> Petitioner's new arguments and evidence only further show that its theory is premised on hindsight bias. Response, 21-22. The Reply argues that rejecting "higher uncertainty" decisions and waiting for a "lower uncertainty" input was well known. Reply, 19. Even accepting this as true, Petitioner does not explain why POSAs would have been motivated to compare confidence values—a feature that Petitioner has been unable to

> show in any prior art—given that the "reject option" was allegedly a well-known solution to the problem of "too close to call" scenarios.

Id. at 4–5.

We agree with Patent Owner's contentions that it is not entirely clear how a general recognition of a "reject option" for a "higher uncertainty" and waiting for a "lower uncertainty" decision, even if true, amounts to what is required by claim 18.

Further still, we note Petitioner's argument that general background knowledge of a skilled artisan must intrinsically be regarded as accounting for claim 18 because of an alleged "***lack of <u>any</u> description*** matching claim 18's recitation in Nobots's specification." *See* Pet. Reply 18 (emphasis in original). Yet, we agree with Patent Owner (*see* PO Sur-reply 2–3) that Petitioner's argument does not square with Petitioner's burden to come forward in its Petition with a suitable evidentiary basis showing that a particular claim limitation was recognized in the prior art. We reject Petitioner's argument.

Thus, on this record, we are not persuaded that Petitioner's new arguments and evidence (i.e., Exs. 1042–1045) demonstrate that general background knowledge combined with Willner's teachings to arrive at claim 18 (when the claim is understood to refer to "of e)."

(2) Interpreting claim 18 as reciting "of d)"

Alternatively, even regarding claim 18 as written in referring to "of d)," Petitioner provides little meaningful elucidation as to why Willner's "hash values" account for that version of claim 18.[15] Part and parcel with

[15] We reiterate here that as written in referring to "of d)," claim 18 makes little sense. In that respect, claim 1's step "d)" is itself a step of

the non-sensical nature of claim 18 as written is that the first and second instances of values in the claim have no corollary in claim 1's step d), such that Petitioner does not meaningfully articulate how Willner's "hash values" amount to what is required by claim 18. Moreover, as is apparent from Patent Owner's Response (pp. 18–19) and Sur-reply (pp. 2–5), Patent Owner clearly does dispute that Willner renders obvious claim 18 as a part of its "of d)" iteration, contrary to Petitioner's argument (*see* Pet. Reply 17–18). We find Patent Owner's arguments persuasive that Petitioner does not account adequately for claim 18 as written in referring to "of d)." *See* PO Resp. 18–19; PO Sur-reply 1–5.

Accordingly, we conclude that Petitioner has not shown by a preponderance of the evidence that claim 18 is unpatentable over Willner, based on Petitioner's grounds premised on either anticipation or obviousness even if the claim is interpreted as reciting "of d)."

4. Conclusion

For the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that claims 1–3 and 6–17 are unpatentable based on Willner. Petitioner has not shown by a preponderance of the evidence that claim 18 is unpatentable over Willner.

"comparing" data and does not refer to any particular "value of d)" or indicate that any "value" results from the comparison performed in step d). Claim 18's recitation then of "comparing" two values as a part of the "comparing" aspect of step d) that does not generate a value is non-sensical.

E. Ground Based on Willner and Kitts

1. Summary of Kitts

Kitts is titled "Click-Fraud Protector." Ex. 1009, code (54). Kitts summarizes its disclosure below:

> Determining the probability that a user or program fraudulently initiated a web-page request is described herein. A web service executing on a server includes a data-mining component, computation component, and auction component. The data-mining component is configured to determine attributes associated with the web-page request. The computation component is configured to calculate a probability that the web-page request was fraudulently initiated. To calculate this probability, the attributes and other parameters are fed into a statistical model. The auction component is configured to locate one or more advertisements to display on the web page based on the probability. The auction component is also configured to restrict the advertisements for display based on advertiser-specified target criteria. Once an advertisement is located, the advertisement is rendered along with the web page.

Ex. 1009 ¶ 9.

Kitts further describes that the types of attributes that can be analyzed "include, without limitation, an internet protocol (IP) address of the client-computing device, . . . date, time, geographic location, metadata, key words, HTML tabs, or other characteristics associated with the page request." *Id.* ¶ 46.

2. Introduction—Willner and Kitts Ground

Petitioner contends that claims 1–18 and 20 would have been unpatentable based on Willner and Kitts. Pet. 27–33. Petitioner submits that "[t]he Willner-Kitts combination meets claims 1–3 and 6–18 for the same reasons as Willner alone discussed *supra* [in the Petition], which are unchanged in the combination." *Id.* at 29 (citing Ex. 1003 ¶ 119). Petitioner

applies Kitts to account for aspects of claims 4, 5, and 20. As discussed above, during trial, Patent Owner does not dispute that Willner accounts for all the features of claims 1–3 and 6–17. We discern that Patent Owner does dispute aspects of Petitioner's proposed grounds based on Willner and Kitts applied to claims 4, 5, 18, and 20. Accordingly, we address the claims below in the following groupings: (1) claims 4 and 5; (2) claim 20; (3) claim 18; and (4) claims 1–3 and 6–17.

3. Claims 4 and 5

Claims 4 and 5 are reproduced below:

> 4. The method of claim 1 wherein the model data comprises passive model data.
>
> 5. The method of claim 4 wherein the passive model data comprises browser cookies; destination IP histories; originating IP address; originating IP address traffic data; originating IP address physical location; and/or third party data regarding abusers comprising originating IP address and physical locations.

Claims 4 and 5, thus, specify the type of model data referenced in claim 1 as certain types of "passive model data."

a) Summary of Petitioner's Arguments

In the Petition, Petitioner explains how the combination of Willner and Kitts account for all the features of claims 4 and 5. Pet. 30–31. As we observed in our Institution Decision, "Petitioner primarily applies Kitts's teachings in conjunction with Willner to account for the 'passive' data aspects of" claims 4 and 5. Inst. Dec. 23.

In arguing that a person of ordinary skill in the art would have had reason to combine the teachings of Willner and Kitts, Petitioner contends in its Petition the following:

> A POSA would have been motivated to add Kitts's statistical model analysis and use of passive model data (Kitts's "attributes") to determining the confidence level in Willner's method. Willner and Kitts address the same problem of preventing automated click fraud on webpage advertisements (*supra* §§ III.A, IV.A), and both analyze data regarding the client device's interaction with the webpage to determine a value (Willner's "confidence level" or Kitts's "quality score") indicating whether the user is likely a human or bot. *Supra* §§ III.B.1, III.B.6 (Willner); Kitts, [0031]-[0032], [0049], [0067]-[0068]; Lopresti- Declaration, [0118]. Kitts ([0068]) teaches that "[a]dditionally, other user or program parameters may also be used in conjunction with the attributes to determine the probability[.]"

Pet. 28.

Petitioner also contends the following:

> a POSA would have been motivated to improve Willner's performance in detecting automated click fraud by analyzing passive data as Kitts teaches, in addition to active data as Willner teaches. Lopresti- Declaration, [0118]. Kitts ([0047]) teaches that "[s]uch information can be an important tool in determining whether the user requesting the web page has a propensity for click fraud," and it was well known to POSAs that analyzing passive data could help differentiate humans from bots. Lopresti-Declaration, [0118], citing as corroboration Broder, [0009], [0042]-[0043], [0051]-[0054], [0068]-[0069]; Ex. 1014 ("Ge"), [0082]-[0083]; Ex. 1015 ("English"), 3:17-29.

Id. at 28–29.

In its Reply, Petitioner contends that the Petition established adequate motivation to combine the teachings of Willner and Kitts (Pet. Reply 1–6), and also a reasonable expectation of success in so combining those teachings (*id.* at 6–10).

b) Summary of Patent Owner's Arguments

During trial, Patent Owner does not challenge Petitioner's contentions that all of the limitations of claims 4 and 5 emerge from a combination of Willner and Kitts. Rather, Patent Owner bases its arguments first on a position that Petitioner has not offered adequate explanation of a reasonable expectation of success in modifying Willner based on Kitts's teachings. *See* PO Resp. 35–41; PO Sur-reply 14–18. Patent Owner also contends that Petitioner has not demonstrated a motivation to combine the teachings of Willner and Kitts. *See* PO Resp. 41–43; PO Sur-reply 20–22. For instance, Patent Owner criticizes Petitioner for not having explained how the "benefits" attributed to adding Kitts's passive data statistical model would outweigh any "drawbacks." PO Resp. 42; PO Sur-reply 21–22. Patent Owner notes that Willner describes its system as "'actually impossible' for bots to perpetuate click fraud on," reasons that characterizes Kitts's passive model analysis as "complex," and concludes that a skilled artisan would "be less inclined" to attempt to further improve Willner's system "by add[ing] Kitts' statistical model analysis and use of passive data." *See, e.g.*, PO Resp. 34–35.

c) Discussion

In light of Petitioner's above-noted contentions as to reasons to combine the teachings of Willner and Kitts, we made the following determination at the Institution stage:

> We find persuasive, on this record, Petitioner's contentions and Dr. Lopresti's testimony that a skilled artisan would have recognized reasonably that types of data understood as "passive" (e.g., browser cookies, IP addresses, IP histories, geographic location, etc.) are known in the art as data used in the pursuit of click fraud detection.

Inst. Dec. 24.

Furthermore, in observing that the parties were in agreement "that a person of ordinary skill in the art has considerable education and experience in the areas of computer science and computer security," we determined that "[t]he record reflects that Kitts's express teachings would have conveyed to a person of ordinary skill in the art involved in computer science and security that 'passive data' can be useful as an 'important tool' in the realm of evaluating the possibility that click fraud is occurring." *Id.* at 25 (citing Ex. 1009 ¶ 47; Ex. 1003 ¶ 118).

Lastly, we assessed the following:

> Furthermore, a person of ordinary skill in the art is also a person of ordinary creativity. *KSR,* 550 U.S. at 421. It follows reasonably from Kitts's teachings that one of ordinary skill and creativity would have appreciated that passive data would have had recognized benefits in detecting click fraud in the type of system conveyed in Willner (*see* Ex. 1009 ¶ 47; *see also* Ex. 1003 ¶ 118), even if harnessing those benefits in such a system would require addressing issues of "complexity" as urged by Patent Owner. *See, e.g.*, Prelim. Resp. 49. That is reasonably so even if Willner expresses praise for its own system's effectiveness in detecting bots engaging in click fraud. There is no plausible indication on the record at hand that employing a particular type of data, i.e., passive data, in a click fraud detection system would have been beyond the skill of a skilled artisan so as to suggest non-obviousness. *See KSR*, 550 U.S. at 417 ("if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill."). On this record, we find

> credible, and adequately supported by record evidence, Dr. Lopresti's testimony that use of passive data was well known "to help differentiate humans from bots." *See, e.g.*, Ex. 1003 ¶ 118. We further credit Dr. Lopresti's testimony that a person of ordinary skill in the art would have had adequate motivation to combine Willner's and Kitts teachings (*see, e.g.*, *id.*), and also conclude, at this time, that that the record reasonably conveys that there would have been a reasonable expectation of success in doing so.

Id. at 25–26.

Thus, for purposes of instituting trial, we found persuasive Petitioner's arguments (and credible Dr. Lopresti's supporting testimony) that a skilled artisan would have had adequate motivation to combine the teachings of Willner and Kitts, and also that the record conveyed "a reasonable expectation of success in doing so." *Id.* at 26.

As to Patent Owner's challenge to Petitioner's proffered motivation to combine the teachings of Willner and Kitts, we find that Patent Owner does not present persuasive arguments that undermine the reasoning (and underlying support for that reasoning) offered in the Petition, which, as discussed above, we found persuasive in instituting trial. The record, and specifically Kitts's teachings, amply conveys that "passive" data has a recognized role in connection with bot detection systems. *See, e.g.*, Ex. 1009 ¶¶ 46–47; Ex. 1003 ¶ 118. We also agree with Petitioner here that a showing of "obviousness does not require a combination to be 'an "improvement" in a categorical sense.'" Pet. Reply 3 (quoting *Intel Corp. v. PACT XXP Schweiz AG*, 61 F.4th 1373, 1381 (Fed. Cir. 2023)). Petitioner credibly explains that one of ordinary skill in the art would have recognized the benefit of employing additional data, e.g., Kitts's passive data, specifically intended for bot detection in other systems, such as Willner's, that may not themselves make explicit that such data is used. *See, e.g.*, Pet.

28–29; Pet. Reply 1–3. That is reasonably so, even if harnessing those improvements or benefits may require a skilled artisan to puzzle out solutions to potential problems or setbacks. For instance, even if "complexity," "cost," and "security" are the types of issues that a skilled artisan would need to evaluate in combining Willner's and Kitts's teachings, as Patent Owner suggests (*see, e.g.*, PO Resp. 42), we agree with Petitioner the record does not convey that evaluating or addressing such issues is beyond the skill of one of ordinary skill in the art. *See* Pet. Reply 3–6.

With respect to Patent Owner's contention that the Petition "offers no analysis or evidence of reasonable expectation of success" (*see, e.g.*, PO Resp. 35), we do not agree. In our Institution Decision, we concluded that Petitioner's arguments, and Dr. Lopresti's testimony, credibly provided a basis for determining that a skilled artisan would have had a reasonable expectation of success in combining the teachings of Willner and Kitts. *See* Inst. Dec. 25–26. We reached that determination even though the Petition did not use the phrase "reasonable expectation of success." We take note that the Federal Circuit has observed that, while motivation to combine the teachings of the prior art requires an explicit analysis, "a finding of reasonable expectation of success can be implicit." *Elekta Limited v. Zap Surgical Systems, Inc.*, 81 F.4th 1368, 1376 (Fed. Cir. 2023). Moreover, "[e]vidence of reasonable expectation of success, just like evidence of a motivation to combine, 'may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or in some cases, from the nature of the problem to be solved.'" *Id.* at 1377 (quoting Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1125 (Fed. Cir. 2000) ; *see also Merck & Cie v. Gnosis S.P.A.*, 808 F.3d 829, 836 (Fed.

Cir. 2015) ("*KSR* does not require an explicit statement of a reasonable expectation of success in every case.").

Here, we conclude that: (1) the parties' recognized level of ordinary skill in the art (*see* Pet. 4; PO Resp. 2); (2) the knowledge of a skilled artisan as set forth by record evidence, including the teachings of Willner and Kitts; and (3) the nature of the problem addressed in both of those references, i.e., click fraud detection, all support a determination that a skilled artisan would have had adequate reasons to combine Willner and Kitts, and would have had a reasonable expectation in doing so. To that end, we find persuasive Petitioner's arguments in the Petition as to the proposed reasoning to combine Willner and Kitts, and also credit Dr. Lopresti's supporting testimony. *See* Pet. 28–29; Ex. 1003 ¶ 118.

We are mindful of the contrasting testimony referenced by Patent Owner's declarant, Dr. Russ. *See, e.g.*, PO Resp. 38 (citing Ex. 2011 ¶¶ 107–110). Dr. Russ testifies that, in his view, there are "practical" and "technical" "considerations" in combining Willner and Kitts that a "POSA would have had to consider in determining whether a reasonable expectation of success exists, none of which are addressed or discussed in the Petition." *See* Ex. 2011 ¶¶ 107–110. The example considerations listed by Dr. Russ are reproduced below:

1. How Kitts' passive data could be collected and stored in conjunction with the mouse vector data already being collected by Willner;
2. How to collectively analyze fundamentally different types of data—Willner's mouse vector data on one hand, and Kitts' passive data on the other;
3. How to generate a useful confidence score that is more accurate than the scores already generated by Willner, again taking into consideration that passive data is a fundamentally different type of data than active data;

> 4. How to develop an algorithm to perform the required assessment using the complex statistical model of Kitts; and
> 5. To what extent additional computer hardware would be necessary to enable the combined system to effectively operate and whether such hardware could be reasonably implemented, taking into consideration both cost and feasibility.

Ex. 2011 ¶ 108.

Those considerations are generally directed to collection and use of one particular type of data, i.e., "passive data," alongside another type of data, i.e., "active data." We find, however, that the record establishes that resolving these considerations would have been within the ordinary skill of the person of ordinary skill in the art. *See, e.g.*, Pet. 28–29; Ex. 1003 ¶ 118; Pet. Reply 8–9; Ex. 1042 ¶¶ 19–24.

Furthermore, any or all particular "considerations" that a skilled artisan would have contemplated as a part of an obviousness analysis need not be made explicit in a Petition in order to satisfy the reasonable expectation of success inquiry. Dr. Russ's criticisms as to alleged lacking of reasonable expectation of success seem to be that the Petition's alleged deficiency lies in not describing every particular modification that might be contemplated by a skilled artisan in combining the teachings of Willner and Kitts. In our view, that is akin to a challenge as to how Kitts's teachings would have been "bodily incorporated" into Willner's system, yet that is not a requirement to demonstrate obviousness. *See Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (quoting *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference[.]")

Stated somewhat simply, Petitioner's reliance on Kitts's teachings is for the premise that a person of ordinary skill in the art would have appreciated that "passive" data is a known type of data used in the pursuit of detecting the presence of a bot. It flows reasonably from Kitts's teachings, and the record at hand, that one of ordinary skill in the art would successfully expect to incorporate the use of such data in other bot detection systems, such as Willner's.

We further discern that, in response to the challenges posed by Patent Owner pertaining to motivation to combine and reasonable expectation of success, Petitioner provides additional explanation and evidence. *See* Pet. Reply 1–10. Patent Owner characterizes the new argument and evidence as "improper." *See* PO Resp. 18–20. Although a reply may incorporate new evidence in response to arguments made in a patent owner response, it is certainly the case that new evidence in a reply cannot go beyond what is permitted, such as to operate as a "gap-filler" for necessary evidence entirely lacking from a petition.[16] In this circumstance, however, Petitioner's introduction and discussion of additional evidence is tied directly to an initial determination made in the Institution Decision as to Petitioner's establishment of reasonable expectation of success, and also is directed specifically to arguments challenging that establishment made by Patent Owner in the Patent Owner Response. Nevertheless, even discounting Petitioner' argument and evidence made in the Reply as to this issue, we

[16] Indeed, we note that such was our determination, discussed in section II.D.3.C above, in connection with evidence and argument newly made for claim 18 as a part of its proposed ground based on Willner taken alone.

conclude that the Petition adequately demonstrates a reasonable expectation of success in combining the teachings of Willner and Kitts.

We have considered the parties' respective positions on the question of whether Petitioner has shown that claims 4 and 5 are unpatentable based on the teachings of Willner and Kitts. We conclude that Petitioner has shown by preponderance of evidence that claims 4 and 5 are unpatentable over Willner and Kitts.

4. Claim 18

The issues pertaining to Petitioner's proposed ground for claim 18 based on Willner and Kitts are the same as those discussed above in connection with the ground based only on Willner. *See supra* § II.D.3. As discussed above, we are not satisfied that Petitioner has shown by a preponderance of the evidence that claim 18 is unpatentable over Willner. Petitioner does not rely on Kitts to address any of the deficiencies that we note above. Accordingly, relying on the same reasons discussed above (§ II.D.3), we also conclude that Petitioner has not shown by a preponderance that claim 18 would have been unpatentable over Willner and Kitts.

5. Claim 20

Claim 20 is reproduced below:

> 20. The method of claim 1 wherein the interest data consists of available data.

Ex. 1001, 5:59–6:6, 6:58–59.[17]

[17] As discussed above, although there is some dispute between the parties, we conclude that, given the circumstances here, claim 20 should be regarded as being dependent on claim 1, as written. *See supra* § II.C.2.

Claim 20, thus, refers to "interest data," as being "available data."[18] It is clear from the specification of the '008 patent that "available data" is understood to be a type of "passive data." *See, e.g.*, Ex. 1001, 3:18–24.

In the Petition, Petitioner explains its view as to how claim 20 is unpatentable over Willner and Kitts. Pet. 32–33. During trial, Patent Owner does not appear to offer any explicit challenges pertaining to claim 20, but Patent Owner's view that Petitioner has not shown adequate motivation to combine Willner and Kitts or a reasonable expectation of success in doing so seemingly also applies to claim 20. *See, e.g.*, PO Rep. 35–43; PO Sur-reply 20–22.[19]

As discussed above, we do not agree with Patent Owner that Petitioner's showing of motivation to combine Willner and Kitts, and a reasonable expectation of success in doing so, are deficient. *See supra* § II.E.3.

On this record, we conclude that Petitioner has shown, by a preponderance of the evidence, that claim 20 is unpatentable based on Willner and Kitts.

6. Claims 1–3 and 6–17

As discussed above, Patent Owner does not dispute that Willner alone accounts for all the requirements of claims 1–3 and 6–17. *See supra* § II.D.2. We also do not agree with Patent Owner that Petitioner has not

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[18] We note that claim 1 does not recite "interest data," but does refer to "model data." Patent Owner contends that the reference to "interest data" should instead be to "model data." PO Resp. 15.

[19] In its Reply, Petitioner contends that "[i]f claim 20 is interpreted as dependent from claim 1, Nobots does not separately dispute its unpatentability beyond the arguments addressed supra §III." Pet. Reply 25.

shown adequate motivation to combine Willner and Kitts or a reasonable expectation of success in so combining those teachings. *See supra* § II.E.3. Accordingly, we conclude that Petitioner has shown, by a preponderance of the evidence, that claims 1–3 and 6–17 are unpatentable based on Willner and Kitts.

7. Conclusion

For the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that claims 1–17 and 20 are unpatentable over Willner and Kitts. Petitioner has not shown that claim 18 is unpatentable over Willner and Kitts.

F. Grounds Based on O'Connell

1. Summary of O'Connell

O'Connell is titled "User-Browser Interaction-Based Fraud Detection System." Ex. 1007, code (54). O'Connell's Abstract is reproduced below:

> Systems, methods and media for detecting fraudulent behavior during an Internet commerce session are disclosed. Embodiments of a method may include establishing an e-commerce session with a user and requesting fraud detection analysis of user-browser interaction during the e-commerce session. Embodiments may also include receiving fraud detection results for the e-commerce session, where the fraud detection results may provide an indication of a comparison between the user's interaction with a browser during the e-commerce session and known fraudulent behavior. Embodiments may also include performing an action based on the fraud detection results. Determining the fraud detection results may include determining user-browser interaction data associated with the session and comparing the user-browser interaction data to known fraudulent human or automated program behavior. Performing the action based on fraud detection results may include one or more of completing an e-

> commerce transaction, requesting additional authentication, denying the requested action, etc.

Id. at code (57).

O'Connell further describes that

> [f]actors that may represent potential fraudulent behavior by an automated program and thus raise potential security issues may include data that is entered too rapidly, a mouse pointer tha[t] never moves, a large form that is filled out without the browser window scrolling, data transmitted in a form without keystrokes being recorded, or other factors.

Id. ¶ 48.

2. Discussion of O'Connell-Based Grounds

Petitioner contends that claims 1–18 and 20 are unpatentable under either § 102 or § 103 based on O'Connell alone, or under § 103 based on O'Connell and Kitts. It is apparent from the Petition that Petitioner regards O'Connell's teachings as analogous to, and alternative with, the teachings of Willner. *See, e.g.*, Pet. 33–52.

In the Institution Decision, we noted that "Patent Owner has identified potential weaknesses in the grounds based on O'Connell that may warrant additional consideration during a trial." Inst. Dec. 29. More specifically, we expressed the following:

> We discern that Patent Owner's arguments when it comes to the absence of step 1d) in O'Connell appear more pointed or robust than those that were offered with respect to the Willner grounds. In that regard, Patent Owner contends that O'Connell employs only "simple rules-based criteria" in assessing apparent behavior of a bot rather than employing "user interaction data from a sample computing environment," e.g., a website, as is said to be required by the claims. Prelim. Resp. 34. Although, as with the Willner grounds, Patent Owner contends that there is a "same webpage" requirement implicit to claim 1, we understand Patent Owner here to further assert that O'Connell potentially lacks

> disclosure reflecting user interaction with any sample computing environment and thus O'Connell does not disclose the "model data" required by step 1d). *See* Prelim. Resp. 33–34, 52–57.

Id. at 28–29.

During trial, Patent Owner presents arguments as to deficiencies of O'Connell in accounting for the requirements of step 1d), and deficiencies as to the "passive data" aspects of claims 4 and 5. *See* PO Resp. 29–34; PO Sur-reply 22–25.

In its Reply, Petitioner offers additional arguments pertaining to O'Connell's accounting of step 1d) and the "passive data" requirements of claims 4 and 5. *See* Pet. Reply 10–17.

We acknowledge the parties' disagreements, but with respect to claims 1–17 and 20, because we conclude that Petitioner has shown by a preponderance of the evidence that those claims are accounted for based on the Willner grounds (*see supra* §§ II.D.2, IIE.3, II.E.5, and II.E.6), we determine it is unnecessary to further address those claims in connection with the O'Connell grounds. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner "is entitled to a final written decision addressing all of the claims it has challenged"); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App'x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the "Board need not address issues that are not necessary to the resolution of the proceeding" and, thus, agreeing that the Board has "discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims").

With respect to claim 18, however, as discussed above (*see supra* §§ II.D.3, II.E.4), we conclude that Petitioner has not shown by a preponderance of the evidence that claim 18 is unpatentable based on the

Willner grounds. Accordingly, we consider further the O'Connell grounds as proposed for claim 18.

a) Summary of the Parties' Arguments

In the Petition, Petitioner argued the following in connection with claim 18 as a part of its grounds based on O'Connell:

> As discussed *supra* §§ V.Q-V.R[20] (claims 16-17), O'Connell discloses or renders obvious repeating [1A]-[1E]. In so doing, a POSA would have been motivated to compare the score values generated in [1D]-[1E] for first and second interactions by the user to identify scenarios where a first interaction is too close to call but a second interaction adjusts the score to a value indicating fraud. Lopresti-Declaration, [0166]-[0167].

Pet. 49.[21]

The paragraphs 166 and 167 of Dr. Lopresti's Declaration referenced above read as follows:

> **[0166]** As discussed below, Willner meets claim 18, regardless of whether the "a)-c)" and "d)" recited in claim 18 refer to [1A]-[1D] or instead to [1B]-[1E]. *See* discussion of prosecution history above in Section V.B.
>
> **[0167]** As discussed above in Sections X.P, X.Q (claims 16, 17), O'Connell discloses or alternatively renders obvious repeating steps [1A]-[1E]. In so doing, a POSA would have been motivated to compare the score values generated in steps [1D]-[1E] for first and second interactions by the user, in order to identify scenarios where a first interaction is too close to call but a second interaction adjusts the score to a value indicating fraud.

Ex. 1003 ¶¶166–167.

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[20] These identified sections refer to pages 47–48 of the Petition.

[21] We observe that in connection with claim 18, among other claims, Petitioner contends that the combination of O'Connell and Kitts meets claim 18 "for the same reasons as O'Connell alone discussed [in the Petition] . . . which are unchanged in the combination." Pet. 51.

Thus, with respect to the requirements of claim 18 vis-à-vis O'Connell, Petitioner and Dr. Lopresti, as a part of the Petition, make the same blanket statement, unsupported by any record citation that "a POSA would have been motivated to compare the score values generated in steps [1D]-[1E] for first and second interactions by the user, in order to identify scenarios where a first interaction is too close to call but a second interaction adjusts the score to a value indicating fraud." *See* Pet. 49; Ex. 1003 ¶ 167.

In its Response, Patent Owner contends that the "single sentence obviousness argument" noted above at page 49 of the Petition and paragraph 167 of Dr. Lopresti's testimony is a "conclusory assertion [that is] legally and factually insufficient to demonstrate obviousness." PO Resp. 20. Patent Owner contends that Petitioner "provides nothing more than a hypothetical scenario created out of thin air—where 'a first click is too close to call'—and then immediately jumps to the claimed solution." *Id.* Patent Owner further contends that the "Petition does not identify any teaching or suggestion in Willner or O'Connell that even begins to suggest this hypothetical scenario," and that neither reference indicates that the "'too close to call' scenario" is "contemplated in their system." *Id.* (citing Ex. 2011 ¶¶ 77–78). Patent Owner further characterizes Petitioner's "single sentence analysis [as being] improperly based on hindsight bias" and contends that Petitioner has not provided adequate evidentiary support justifying its proposed unpatentability grounds based on O'Connell. *Id.* at 21–23.

In its Reply, Petitioner simply contends the following:

> Petitioner's expert testified that O'Connell renders claim 18 obvious because POSAs would have been motivated to compare O'Connell's confidence scores for first and second interactions to identify scenarios where a first interaction is too close to call

> but a subsequent interaction adjusts the score to a value indicating fraud. EX1003, [0166]-[0167] (cited Petition, 49). Nobots's contrary arguments fail for the reasons discussed *supra* §IV.A—including that POSAs would not have understood O'Connell's inventors' characterization of their own invention as "efficient and effective" (O'Connell, [0038], cited POR, 20) as teaching that a first interaction would never be too close to call, particularly given that O'Connell generates a "score that provides an indication of the degree of ***likelihood*** of fraudulent behavior" (O'Connell, [0034]). EX1042, [-0051]-[0052].

Pet. Reply 20.

In its Sur-reply, Patent Owner contends that "Petitioner does not dispute that O'Connell cannot anticipate." PO Sur-reply 1 (citing PO Resp. 19–20; Pet. Reply 20). Patent Owner also contends that Petitioner has not shown that claim 18 would have been obvious based on its "single, conclusory sentence offered by Petitioner and its expert." *Id.* at 2. As discussed in connection with the grounds based on Willner (*see supra* § II.D.3), in disputing that claim 18 would have been obvious, Patent Owner also contends that Petitioner's Reply improperly relies on new arguments and evidence to "gap-fill the Petition." PO Sur-reply 2–5.

b) Discussion

Having considered the record before us, we conclude that Petitioner has not established an adequate basis for concluding that claim 18 is unpatentable based on any of the O'Connell grounds. As to Petitioner's proposed ground of unpatentability for that claim based on "§ 102" (*see* Pet. 1), we agree with Patent Owner that "Petitioner does not dispute that O'Connell cannot anticipate." *See* PO Sur-reply 1 (citing PO Resp. 19–20; Pet. Reply 20).

With respect to Petitioner's proposed ground based on obviousness (i.e., § 103), we agree with Patent Owner (*see* PO Resp; PO Sur-reply 2) that the single sentence that Petitioner offers in its Petition to justify its position as to obviousness is conclusory and inadequately supported on the record.[22] In its Reply, Petitioner reiterates the same conclusory sentence with a citation to the same paragraphs 166 and 167 of Dr. Lopresti's testimony (Ex. 1003) appearing at page 49 of the Petition (*see* Pet. Reply 20).

Further in the Reply, Petitioner also cites to paragraphs 34 and 38 of O'Connell and paragraphs 51 and 52 of Dr. Lopresti's Reply Declaration (Ex. 1042). Petitioner generally contends that based on those paragraphs "a first interaction would never be too close to call, particularly given that O'Connell generates a 'score that provides an indication of the degree of likelihood of fraudulent behavior.'" Pet. Reply 20. Petitioner, however, does not sufficiently link that contention, even if true, to support for the single sentence obviousness position taken in the Petition (*see* Pet. 49), or explain why that is adequate to show the obviousness of claim 18.

The noted paragraphs of Dr. Lopresti's Reply Declaration (1) express Dr. Lopresti's general disagreement with Dr. Russ's testimony at paragraphs 77–81 of his Declaration (Ex. 2011) based on to the same two of O'Connell's paragraphs (34 and 38) cited in the Petition, and (2) makes reference to Dr. Lopresti's prior unsupported testimony at paragraph 167 of his Declaration (Ex. 1003). *See* Ex. 1042 ¶¶ 51, 52. Here, too, however,

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[22] As discussed above, that sentence reads: "a POSA would have been motivated to compare the score values generated in steps [1D]-[1E] for first and second interactions by the user, in order to identify scenarios where a first interaction is too close to call but a second interaction adjusts the score to a value indicating fraud." *See* Pet. 49.

Petitioner does not explain persuasively how Dr. Lopresti's prior unsupported testimony, coupled with general disagreement with Dr. Russ based on citations to the two noted paragraphs of O'Connell, provides the necessary basis to conclude that the O'Connell grounds of unpatentability as set forth in the Petition meet Petitioner's burden to show unpatentability of claim 18 by a preponderance of the evidence.

c) Conclusion

Having considered the record before us, including the respective positions of the parties, for the reasons discussed above, we conclude that Petitioner has not shown by a preponderance of the evidence that claim 18 of the '008 patent is unpatentable based on the proposed grounds of unpatentability involving O'Connell set forth in the Petition.

G. Ground Based on Kitts alone

Petitioner contends that independent claim 19 and dependent claim 20 are unpatentable based on Kitts under either § 102 or § 103. For the reasons noted above (*see supra* § II.C.2), we regard claim 20 as dependent on claim 1, as written, and conclude that Petitioner's proposed ground to claim 20 based on Kitts is not germane, because it is predicated on an interpretation of claim 20 as depending from claim 19. Accordingly, we address only Petitioner's proposed ground based on Kitts that is advanced for claim 19. Pet. 52–61; Pet. Reply 20–25.

Patent Owner does not agree with Petitioner that claim 20 is unpatentable based on Kitts. PO Resp. 16–17; PO Sur-reply 5–12. Claim 19 is independent and reproduced below:

> 19. A method for assessing a confidence level that an operator of a client computing device interacting with a server is

> a human being rather than an autonomic computer application, the method comprising:
>
> a) acquiring interest data from the client computing device prior to delivery of issued data by the server to the client computing device;
>
> b) comparing the interest data to model data relating to human interaction with a computing device prior to the time in which the interest data is acquired; and
>
> c) generating a value that represents a confidence level that a human user rather than an autonomic user operated the client computing device prior to the time in which the interest data is acquired.

Ex. 1001, 6:44–56.

A central point of dispute between the parties rests on claim 19's step a) recitation of "acquiring interest data." As discussed above (*see supra* § II.C.3.c)), we conclude that the record demonstrates that "acquiring interest data" requires the retrieval of at least some active data, and, thus, cannot be met solely by the retrieval of passive data. Patent Owner contends that "[b]ecause Kitts only discloses passive data, it cannot render independent claim 19 unpatentable." PO Resp. 17. Petitioner does not dispute that Kitts encompasses only the retrieval of passive data. Rather, Petitioner's proposed ground is based on its view (with which we do not agree) that "acquiring interest data" in claim 19 can be met solely by retrieving passive data. *See, e.g.*, Pet. Reply 20–25.

Because we determine that "acquiring interest data" requires retrieval of at least some active data, and because Kitts discloses only the retrieval of passive data, we conclude that, on the record before us, Petitioner does not account adequately for the requirements of claim 19 based on Kitts. Accordingly, we conclude that Petitioner has not shown by a preponderance of the evidence that claim 19 is unpatentable based on Kitts.

III. CONCLUSION

In summary, we determine that a preponderance of the evidence establishes that claims 1–17 and 20 of the '008 patent are unpatentable, but a preponderance of the evidence does not show that claims 18 and 19 are unpatentable. Those determinations are shown in the following table:[23]

Claim(s)	35 U.S.C. §	References/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–3, 6–18	102/103	Willner	1–3, 6–17	18
1–18, 20	103	Willner, Kitts	1–17, 20	18
1–18, 20	102/103	O'Connell[24]		18
1–18, 20	103	O'Connell, Kitts[25]		18
19, 20	102/103	Kitts[26]		19

[23] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. §§ 42.8(a)(3), (b)(2).

[24] We do not reach the ground based on O'Connell as to claims 1–17 and 20 because we determined those claims are unpatentable based on the two Willner-based grounds.

[25] We do not reach the ground based on O'Connell and Kitts as to claims 1–17 and 20 because we determined those claims are unpatentable based on the two Willner-based grounds.

[26] We do not reach the ground based on Kitts as to claim 20 because we determined that claim 20 unpatentable based on the ground of Willner and Kitts.

Overall Outcome			1–17, 20	18, 19

IV. ORDER

Upon consideration of the record before us, it is:

ORDERED that claims 1–17 and 20 of the ’008 patent have been shown to be unpatentable;

FURTHER ORDERED that claims 18 and 19 of the ’008 patent have not been shown to be unpatentable; and

FURTHER ORDERED that, because this is a final written decision, parties to the 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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