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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

QUALCOMM INCORPORATED,
Patent Owner.

Case IPR2018-01245
Patent 8,665,239 B2

Before TREVOR M. JEFFERSON, AMANDA F. WIEKER, and AARON W. MOORE, *Administrative Patent Judges*.

WIEKER, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
35 U.S.C. § 314(a)

I. INTRODUCTION

A. Background

Apple Inc. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–4 ("challenged claims") of U.S. Patent No. 8,665,239 B2 (Ex. 1001, "the '239 patent"). Paper 2 ("Pet."). Qualcomm Incorporated ("Patent Owner") filed a Preliminary Response. Paper 11 ("Prelim. Resp.").

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows that "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314; *see also* 37 C.F.R § 42.4(a) ("The Board institutes the trial on behalf of the Director."). Taking into account the arguments presented in the Preliminary Response, we conclude that the information presented in the Petition has established a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims.

Accordingly, we institute an *inter partes* review on all grounds presented in the Petition.

B. Related Proceeding

The parties identify the following matter related to the '239 patent (Pet. 68–69; Paper 3, 2): *Qualcomm Incorporated v. Apple Inc.*, Case No. 3-17-cv-02403 (S.D. Cal.).

C. The '239 Patent

The '239 patent is titled "Method and Apparatus Continuing Action of User Gestures Performed Upon a Touch Sensitive Interactive Display in

Simulation of Inertia," and issued on March 4, 2014, from U.S. Application No. 13/686,692, which was filed November 27, 2012. Ex. 1001, (21), (22), (54). The '239 patent claims priority, through a series of divisional and continuation applications, to U.S. Application No. 10/913,105, which was filed on August 6, 2004. *Id.* at (60). Thus, Petitioner contends the earliest possible priority date for the '239 patent is August 6, 2004. Pet. 2.

The '239 patent concerns touch-based gestures that are applied to a touch-sensitive display surface, and which result in execution of a predetermined action associated with the gesture, e.g., to zoom in to content on the display. Ex. 1001, 1:40–46, 2:13–22, Fig. 1B (depicting a user making gestures on an interactive table-like display system). The '239 patent explains that prior art interactive display systems lacked intuition, meaningful interaction, and a robust set of gestures. *Id.* at 1:61–67. The '239 patent attempts to address these deficiencies. *Id.* at 2:7–9.

To that end, the '239 patent discloses table 122 with touch-sensitive display surface 124. Ex. 1001, 3:10–11, Fig. 1A–1C. Table 122 detects touch input from a user, and computer 126 identifies one or more gestures associated with that input, from a predefined set of known gestures. *Id.* at 3:10–16; *see also id.* at 4:4–10 (disclosing other display configurations, e.g., a vertical display screen, or a non-projection embodiment). The '239 patent describes various approaches to detect when and where a user touches the display surface. *Id.* at 4:24–65 (identifying detection mechanisms). In all approaches, computer 126 detects the time and location of the user's touch contact on the display surface. *Id* at 5:1–2, 7:28–32 (detecting position, size, shape, and timing), Fig. 2 (steps 201–202). Additionally, force may be detected, and velocity may be computed. *Id.* at 5:14–16, 7:39–41, 7:45–46, Fig. 2 (steps 204, 206).

After detecting touch contact, "computer 126 determines whether activity of the current contact matches a predetermined pattern, and therefore constitutes a 'gesture,'" for example, by comparing detected position, size, movement, velocity, and/or force to a dictionary of predetermined gestures. *Id.* at 7:58–67, Fig. 1A (depicting dictionary 126A with associated actions 126B), Fig. 2 (step 208). If a gesture is not recognized, the user may be alerted, and the detection and recognition process will continue. *Id.* at 8:1–7, Fig. 2 (steps 208a–b, 209). On the other hand, if a gesture is recognized, the action associated with the identified gesture is performed, for example, to pan, zoom, or rotate the content shown on the display. *Id.* at 8:7–20, Fig. 2 (steps 208c, 214, 216), Figs. 3a–3d, Fig. 4.

The '239 patent also discloses that the system may detect whether the gesture terminates with non-zero velocity, such that the action associated with the gesture is executed in a manner that imparts inertia to the action, e.g., by continuing the action and then slowing performance of the action. *Id.* at 8:21–9:46, Fig. 2 (steps 218, 222, 224).

D. Illustrative Claim

The '239 patent includes four claims, all of which are challenged. Claims 1 and 3 are independent claims. Claim 1 is illustrative and is reproduced below, with bracketed letters added, to correspond with the identifiers employed by Petitioner (*see, e.g.*, Pet. 11–34).

> 1. A computer implemented method performed in a system including a processor coupled to digital data storage and a display having a touch-sensitive display surface, the method comprising the tasks of:

> [a] in the digital data storage, storing a record defining a collection of multiple user gestures, each user gesture executable by touching the display, and further storing for each user gesture an assignment of one or more of multiple prescribed operations of modifying subject matter presented by the display;
>
> [b] for each of one or more touches experienced by the display surface, the processor determining the magnitude of the touch upon the display surface;
>
> [c] based on one or more prescribed properties of the one or more touches experienced by the display surface, the processor identifying from the collection of user gestures at least one user gesture executed by the one or more touches;
>
> [d] the processor identifying the one or more prescribed operations assigned to the executed user gesture, and causing the display to modify the subject matter presented by the display according to the identified one or more operations; and
>
> [e] where the tasks are further performed according to any or both of:
>
>> (1) the identification of the executed user gesture is performed based on properties including the determined magnitude of the one or more touches;
>>
>> [f] (2) as to the manner in which the subject matter presented by the display is modified according to the identified one or more operations, said manner is further responsive to the determined magnitude of the one or more touches.

Ex. 1001, 12:16–47. Independent claim 3 recites a "non-transitory computer readable storage medium containing a program of machine-readable instructions executed by a digital data processing machine to perform tasks for operating an interactive display system . . ." and recites limitations substantially similar to those recited in claim 1. *Id.* at 12:58–14:7.

E. Applied References

Petitioner relies upon the following references:

> Hullender et al., U.S. Patent Application Publication No. 2003/0156145 A1, published August 21, 2003, filed February 8, 2002 (Ex. 1005, "Hullender");
>
> PAUL E. RENAUD, INTRODUCTION TO CLIENT/SERVER SYSTEMS (2d ed. 1996) (Ex. 1006, "Renaud");
>
> Kiraly et al., U.S. Patent No. 6,249,606 B1, issued June 19, 2001, filed February 19, 1998 (Ex. 1007, "Kiraly"); and
>
> Agulnick et al., U.S. Patent No. 5,347,295, issued September 13, 1994, filed October 31, 1990 (Ex. 1008, "Agulnick").

Pet. 4–5. Petitioner asserts that each reference qualifies as prior art, having been published before the earliest priority date of the '239 patent. *Id.*

Petitioner also relies upon the Declaration of Dr. Brad A. Myers ("the Myers Declaration," Ex. 1003). Patent Owner supports its Preliminary Response with a Declaration of Dr. Jacob O. Wobbrock ("the Wobbrock Declaration," Ex. 2001).

F. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–4 of the '239 patent based on the following grounds. Pet. 4.

References	Basis	Claims
Hullender and Renaud	§ 103	1–4
Kiraly and Agulnick	§ 103	1–4

II. DISCUSSION

A. Claim Construction

The instant Petition was filed on June 18, 2018, prior to the effective date of the rule change that replaces the broadest reasonable interpretation standard. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (final rule) ("This rule is effective on November 13, 2018 and applies to all IPR, PGR and CBM petitions filed on or after the effective date.").

We, therefore, apply the broadest reasonable interpretation standard in this proceeding. Under that standard, claim terms in an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2017). "Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history." *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016).

On the current record, we determine that no claim term requires express construction for purposes of this Decision. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *see also* Pet. 5; Prelim. Resp. 8.

B. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103(a) if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious 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) objective evidence of non-obviousness.[1] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also "determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of elements produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). 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).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

[1] Patent Owner has not provided objective evidence of non-obviousness at this stage of the proceeding.

C. Level of Ordinary Skill in the Art

Petitioner and Patent Owner agree that a person of ordinary skill in the art ("POSITA") would have had a Bachelor of Science degree in "electrical engineering, computer engineering, computer science," or a similar field, and at least two years of "experience in touch sensitive computer systems or gesture-based control of computer systems." Pet. 5 (citing Ex. 1003 ¶ 10); Prelim. Resp. 8 (citing Ex. 2001 ¶¶ 37–38). The parties also agree that additional practical experience could compensate for these educational requirements. Pet. 5; Prelim. Resp. 8.

For purposes of this Decision, we accept the parties' assessment of the level of skill in the art, and apply it in this Decision. *See* Ex. 1003 ¶ 10; Ex. 2001 ¶¶ 37–38; *see also* Ex. 1001, 1:40–41.

D. Obviousness over the Combined Teachings of Hullender and Renaud

Petitioner contends that claims 1–4 of the '239 patent are unpatentable as obvious over the combined teachings of Hullender and Renaud. Pet. 6–38. Patent Owner disputes Petitioner's contentions. Prelim. Resp. 9–26. For reasons that follow, we determine Petitioner has demonstrated a reasonable likelihood of prevailing as to the challenged claims.

1. Overview of Hullender (Ex. 1005)

Hullender is a U.S. patent application titled "Ink Gestures," which concerns capturing and implementing gestures that are handwritten on a pen-based computing platform. Ex. 1005, (54), (57). Specifically, Hullender discloses a stylus-based computer processing system, such as tablet PC 201. *Id.* ¶ 36, Fig. 2. Tablet 201 includes display surface 202, upon which a user may write with stylus 204. *Id.* ¶ 36. Tablet 201 interprets marks made with stylus 204, to perform conventional computer tasks. *Id.* Hullender also discloses that gestures may be written onto the display surface with the stylus. *Id.* ¶¶ 41, 43. Gestures may have, e.g., an action area, position, size/extent, and shape, as well as one or more default actions associated with the gesture. *Id.* ¶¶ 44, 46; *see also id.* ¶¶ 48–53 (action area), 54–55 (position), 56–58 (size/extent), 59–60 (shape).

Hullender discloses exemplary gestures including, for example, a "selection" gesture in the form of a left bracket (i.e., "["), which causes the computer to "select" a portion of the content (e.g., a word) displayed on the tablet PC. *Id.* ¶ 85; *see also id.* ¶¶ 81–90 (other gestures). These gestures may be represented in a data structure, such as that depicted in Hullender's Figure 7, which is reproduced below (*see id.* ¶ 92):

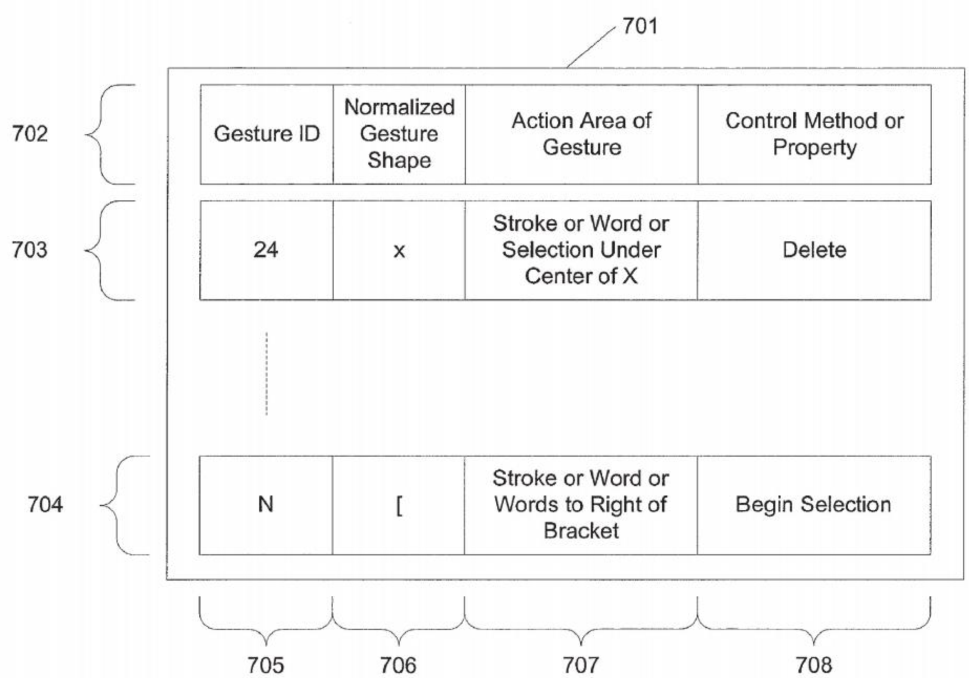

Figure 7

Figure 7 depicts exemplary data structure 701, including row 704, which reflects the content associated with the "selection" gesture discussed above. *Id.* ¶ 16, Fig. 7. Data structure 701 includes the following entries, for each gesture:

> gesture ID 705 (e.g., N);
> normalized gesture shape 706 (e.g., "[");
> the action area 707 associated with the gesture (e.g., the word to the right of the bracket drawn by the stylus); and
> the control method or property 708 associated with the gesture, i.e., the action to be taken when a gesture is recognized (e.g., begin selection).

Id. ¶¶ 93–94.

Hullender discloses several exemplary processes for recognizing gestures input by the stylus. For example, gesture recognition may be performed by the system (Figures 4, 8) or by an application (Figure 5). *Id.* ¶¶ 62–67 (Fig. 4, recognition through "scaling, reorient[ing], and/or other operations"), 68–70 (Fig. 5). In connection with Figure 8, Hullender discloses that the system determines whether a gesture has been created by receiving the stylus stroke (Fig. 8, step 801); normalizing it (Fig. 8, step 802); and performing "any one or more" of the following steps to determine if the stroke is a gesture (Fig. 8, step 803):

> (1) collapsing the stroke into a binary single point stream;
> (2) scaling the coordinates to a predetermined size;
> (3) scaling the entry time of the points to determine a predetermined number of points;
> (4) computing additional items (e.g., stroke windings, duration, etc.);
> (5) computing Chebychev polynomials for x, y, z coordinates;
> (6) combining polynomial(s) and inputting into Bayes net(s); and
> (7) getting a score from each Bayes net, wherein if exactly one net recognizes a gesture, the gesture is passed to the application.

Id. ¶¶ 71–79. If a gesture is recognized, which may include the matching of Bayes nets as described above, the system "sends the gesture ID and Objects in the action area to the system or application" (Fig. 8, step 806). *Id.* ¶ 79.

2. Overview of Renaud (Ex. 1006)

Renaud is a book titled "Introduction to Client/Server Systems, A Practical Guide for Systems Professionals." Ex. 1006, 1. In a chapter discussing development and design principles, Renaud explains that it is necessary to "strike a balance between centralized and distributed access," recognizing that communication of data between clients and servers "introduce[s] the potential for latency, data loss, errors, or even total failure." *Id.* at 466–467. Renaud also states that reducing data movement conserves bandwidth and reduces network traffic. *Id.* at 487. Renaud explains that one way of doing so is by replicating static, unchanging data at the client, so that it can be accessed locally. *Id.*

3. Analysis of Claim 1

Petitioner contends that claim 1 would have been obvious over the combined teachings of Hullender and Renaud. Petitioner relies on Hullender as teaching the majority of claim 1. Pet. 6–7, 11–34 (limitations 1a–f). Petitioner contends that Hullender describes gesture control of a computer, wherein gestures are input, recognized, and used to invoke computer actions. *Id.* at 6–7. Petitioner contends that Hullender's system is implemented in a tablet PC having a local processor and data storage, and can operate in a networked environment, e.g., a client/server system. *Id.* at 7.

Petitioner also contends that Renaud discloses that local data storage and local data processing provide benefits, e.g., bandwidth conservation and preservation of data integrity. *Id.* at 8. Petitioner relies on Renaud for the local data storage and processing claim limitations. *Id.* at 19 (storage in limitation 1a), 23–24 (processing in limitation 1b), 28–29 (processing in limitation 1c), 30–31 (processing in limitation 1d).

In light of these teachings, Petitioner contends that "a POSITA would have recognized the desirability of storing at least some of Hullender's gesture-related data, e.g., Hullender's data structure, in local tablet PC storage," to conserve bandwidth and reduce data loss. *Id.* at 9–10. Likewise, Petitioner contends that "a POSITA would have recognized the desirability of having Hullender's tablet PC processor perform at least some of the gesture identification processing in light of Renaud's teachings of the advantages of local processing," for the same reasons. *Id.* at 10–11. Petitioner asserts that, to the extent Hullender does not disclose local data storage or processing, this modification "would allow for gesture control even when the tablet was not connected to a network." *Id.* at 11.

In response, Patent Owner argues that Renaud is not analogous art, because Renaud is directed to a different field of endeavor and solves a different problem than the '239 patent. Prelim. Resp. 9–18. Patent Owner alleges that Petitioner improperly focuses on how Renaud could be combined *with Hullender*, instead of focusing on whether Renaud is analogous *to the '239 patent*. *Id.* at 18–20.

Patent Owner also alleges that Hullender fails to teach limitation 1[c]: "identifying from the collection of user gestures at least one user gesture executed by the one or more touches." *Id.* at 20–26. According to Patent Owner, Hullender identifies gestures from Bayes nets, not from the data structure that Petitioner contends is the claimed "collection of user gestures."

Id. at 21–23. Patent Owner argues that it would not have been obvious to modify Hullender to reach this limitation. *Id.* at 23–26.

We have considered the Petition and the Preliminary Response, and determine that Petitioner's arguments and evidence are sufficient to establish a reasonable likelihood of prevailing with respect to challenged claim 1.

i. Analogous Art

We begin with the question of whether Renaud is analogous art, such that it reasonably would have been considered by a POSITA. Therefore, we consider whether Renaud is "in the same field of endeavor" as the '239 patent or "[is] reasonably pertinent to the particular problem with which the inventor [of the '239 patent] was concerned." *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992) (citation omitted). Patent Owner correctly notes that the inquiry concerns whether Renaud is analogous to *the '239 patent*—not whether it is analogous to Hullender. Prelim. Resp. 19.

We recognize that the Petition does not analyze explicitly whether Renaud is in the same field of endeavor or addresses the same problem as the '239 patent. Pet. 6–11. Rather, the Petition explains that Renaud's teachings regarding client/server systems would have been applicable to *Hullender's system*, which may operate in a networked environment. *Id.* at 7–8. Nonetheless, we determine that the evidence of record is sufficient to show—for purposes of institution—at least that Renaud is pertinent to the problem with which the '239 patent inventors were concerned.

As Patent Owner states, "the inventors of the '239 Patent were concerned with making touch-sensitive display surfaces more intuitive." Prelim. Resp. 17. The '239 patent purports to solve this problem by comparing user gestures that are input onto a display screen against a stored record of predetermined gestures. *Id.* at 5; Ex. 1001, 3:14–23, 8:7–10, Fig. 1 (computer 126 with gesture dictionary 126a). Thus, a problem facing the ’239 patent inventors included where to store the record of predetermined gestures, and where to perform the comparison of user input against that record.

We are persuaded that the evidence of record shows adequately that Renaud’s teaching of local data storage and processing is reasonably pertinent to this problem. For example, the ’239 patent references distributed computer systems. Ex. 1001, 5:44–48 (“The apparatus 100 also includes an input/output 110, such as a line, bus, cable, electromagnetic link, or other means for the processor 102 to *exchange data with other hardware external to the apparatus 100*.”) (emphasis added), 6:33–48 (examples of “analog . . . communication links and wireless communications”); *see also, e.g.*, Pet. 2–3 (Examiner’s Reasons for Allowance stating that the prior art lacked a method or storage medium “performed in a system including a processor coupled to digital storage,” including steps of “in the digital data storage, storing a record”), Ex. 1003 ¶ 66 (addressing Hullender, and opining that a “POSITA would have realized that carrying out these functions on a remote computer could necessitate transfer of data,” with attendant disadvantages).

We have considered Dr. Wobbrock’s cited testimony. Ex. 2001 ¶¶ 41–54. Dr. Wobbrock acknowledges that the ’239 patent concerns “recogniz[ing] user application of predefined touch-based user gestures.” *Id.* ¶ 45 (emphasis omitted). As discussed above, this problem necessarily includes questions of where to store the “predefined touch-based user gestures,” and where to perform the “recogni[tion]” of those gestures.

Dr. Wobbrock also opines that "[t]he inventors of the '239 Patent would not have considered the client/server design principles described by Renaud when attempting to make touch surfaces more intuitive." *Id.* ¶ 52 (emphasis omitted). However, Dr. Wobbrock does not explain sufficiently the basis for this opinion, especially given that a necessary aspect of making touch surfaces more intuitive includes where data storage and processing occurs. To realize the goal of the '239 patent, that question must have been addressed by the '239 patent inventors, as data storage and processing must occur somewhere. In light of the evidence of record, we determine that a material dispute of fact exists, favoring institution. 37 C.F.R. § 42.108(c).

We recognize that this is a close question, and the explicit showing in the Petition is weak. However, evidence of record shows sufficiently, for purposes of institution, that Renaud is analogous art. We invite the parties to develop the record on this issue during the course of trial. Patent Owner's arguments raise legitimate questions and, although we determine that Petitioner has met the burden for institution of *inter partes* review, the standard of review is different at the Final Written Decision stage.

ii. Teachings of the Prior Art

We are persuaded, at this stage, that Petitioner's contentions regarding Hullender and Renaud are supported adequately.

<u>*Preamble*</u>

Regarding the preamble, Hullender discloses a "computer-implemented method" (implemented by computer 100/tablet PC 201), a "processor" (processing unit 110), "digital data storage" (memory 120 and disk drives 170, 180, 191), and a "display having a touch-sensitive display surface" (monitor 107/display surface 202 upon which stylus 204 may write), which may operate in a networked environment. Ex. 1005 ¶¶ 30–33, 36–37, Figs. 1–2; *see also* Pet. 11–14.

Limitation 1a

Regarding limitation 1a, Hullender "stores a record defining a collection of multiple user gestures," in the form of data structure 701. Ex. 1005 ¶ 92 (including gesture ID), Fig. 7. Hullender's drives 170, 180, 191 "provide nonvolatile storage of . . . data structures." *Id.* ¶ 31. Hullender teaches that each gesture is executable by touching display 202 with stylus 204, and is associated with prescribed operations (Hullender's "default actions" or "control method or control property") for modifying subject matter on the display (in Hullender's "action area"). *Id.* ¶¶ 37, 43–44, 46–47, 49, 92–94, Fig. 7; *see also* Pet. 14–18.

Also regarding limitation 1a, Renaud discloses that local data storage provides benefits, such as bandwidth conservation and preservation of data integrity. Ex. 1006, 466 ("Make sure local data is locally owned and managed."), 477 ("Minimize data transferred between clients and server. Communication networks introduce the potential for latency, data loss, errors, or even total failure. . . . Any increase in data traffic to one client reduces the throughput of the network for other clients."), 487 ("Reducing data movement also conserves precious network bandwidth."); *see also* Pet. 19.

Limitation 1b

Regarding limitation 1b, Hullender teaches that gestures, comprised of strokes, are written on display 202 with stylus 204. Ex. 1005 ¶¶ 43, 69.

Hullender discloses that the display is associated with a pen digitizer, which captures the input of the stylus, and which is connected to processing unit 110. *Id.* ¶ 32; Ex. 1003 ¶ 63. The system determines characteristics of the gesture, such as action area, position, size/extent, and shape, wherein these characteristics dictate how the action corresponding to the gesture is executed. Ex. 1005 ¶ 44; *see also, e.g., id.* ¶ 57 (explaining that the size of the gesture as written by the stylus "permits the gesture to have varying impact or extent on what they are modifying"). Thus, to the extent not disclosed expressly, Petitioner adequately supports its contention that it would have been obvious to "determin[e] the magnitude of the touch upon the display surface," in light of these teachings, in order to provide the action on the display in correspondence with the gesture characteristics as input by the stylus. *See also* Pet. 19–23.

Also regarding limitation 1b, Renaud discloses that local data processing provides benefits, such as bandwidth conservation and preservation of data integrity. Ex. 1006, 466, 477, 487; *see also* Pet. 23–24.

<u>Limitation 1c</u>

Regarding limitation 1c, Hullender discloses identifying, based on properties of the input from the stylus, an executed gesture. Ex. 1005 ¶¶ 44 (properties), 62–63, 72–76 (using "physical dimension data," "time of entry" data, and "stroke windings, duration of the stroke, aspect ratio of the stroke, maximum distance of any point from a segment connecting endpoints, points of inflection" in gesture recognition). We are persuaded that Petitioner adequately supports the contention that a POSITA would have found it obvious that the executed gesture is identified from the collection of user gestures, i.e., from data structure 701. Specifically, Hullender discloses that gesture information, such as gesture ID 705, is represented in data structure 701. *Id.* ¶ 92, Fig. 7. Hullender also discloses that this information, e.g., gesture ID 705, is sent to the system or application upon identification of the executed gesture. *Id.* ¶ 79 ("Step 803 determines whether a stroke or strokes is a gesture. . . . If yes, the system determines the words or strokes in the action area 805 and sends the gesture ID and Objects in the action area to the system or application in step 806."), Fig. 8; Ex. 1003 ¶ 60. Thus, we are persuaded sufficiently that Hullender identifies executed gestures from among those stored in "the collection of user gestures," as claimed. Additionally, Hullender's processing unit 110 "interprets marks . . . in order to manipulate data, enter text, and execute conventional computer application tasks." Ex. 1005 ¶ 36; *see also* Pet. 34–38.

We have considered Patent Owner's argument that Hullender identifies gestures from Bayes nets, not from the data structure that Petitioner contends is the claimed "collection of user gestures." Prelim. Resp. 21–23; *see also* Ex. 2001 ¶¶ 55–64. On this record, we disagree. First, Hullender discloses that use of Bayes nets is optional. *See* Ex. 1005 ¶¶ 71 (employing "any one or more of" several steps, including the Bayes net computation), 79 (determining whether a gesture has been input, which "*may* include the matching of step 7 [Bayes nets] above" (emphasis added)), Fig. 8. Second, data structure 701 is the only structure Hullender discloses for representing predefined gestures. *Id.* ¶ 92, Fig. 7 (emphasis added). Thus, regardless of whether Bayes nets are utilized to identify gestures, we are persuaded sufficiently that the executed gesture is nonetheless identified from among those gestures that are stored in "the collection of user gestures" represented in data structure 701. As described in paragraph 79, the gesture

ID, which is included in data structure 701, is sent to the system or application, regardless of whether Bayes nets are used in recognizing the gesture. *Id.* ¶ 79; Ex. 1003 ¶ 60.

Also regarding limitation 1c, Renaud discloses that local data processing provides benefits, such as bandwidth conservation and preservation of data integrity. Ex. 1006, 466, 477, 487; *see also* Pet. 28.

Limitation 1d

Regarding limitation 1d, Hullender teaches that once the executed gesture is recognized, the associated prescribed operation, i.e., the "default action" or "control method or property" associated with that gesture, is identified and executed, which causes the display to modify the subject matter presented on the display. Ex. 1005 ¶¶ 41 (recognized and executed), 47 (examples of applying bold font or selecting context), 65, 67, 79, Fig. 7; *see also* Pet. 29–30.

Also regarding claim limitation 1d, Renaud discloses that local data storage and local data processing provide benefits, such as bandwidth conservation and preservation of data integrity. Ex. 1006, 466, 477, 487; *see also* Pet. 30–31.

Limitation 1e

Regarding limitation 1e, Hullender teaches that the identification of the executed gesture is performed based on the determined magnitude of stylus input, as discussed in relation to limitation 1b. Ex. 1005 ¶¶ 44, 57 (size example); Ex. 1003 ¶¶ 42, 44–46, 50, 53–57; *see also* Pet. 31–32.

Limitation 1f

Regarding limitation 1f, Hullender teaches that the subject matter presented on the display is responsive to the determined magnitude. For example, Hullender teaches that the size of the gesture input by the stylus (size being a stroke magnitude) dictates the size of displayed content that will be acted upon. Ex. 1005 ¶¶ 53, 57 (explaining that the size of the gesture as written by the stylus "permits [the] gesture to have varying impact or extent on what they are modifying"); *see also* Pet. 32–34.

iii. The Proposed Combination

We are persuaded, at this stage, that Petitioner supports adequately the contention that a POSITA would have been motivated to combine the cited teachings of Hullender and Renaud. Pet. 9–11; Ex. 1003 ¶¶ 64–69. To the extent not disclosed by Hullender, we credit the unrebutted testimony of Dr. Myers that a POSITA would have found it obvious to store locally Hullender's data structure 701 (*id.* ¶¶ 67–68), and to process locally Hullender's gesture recognition tasks (*id.* ¶¶ 64–65), in order to achieve benefits taught by Renaud, e.g., minimizing risks of data transfer (e.g., data loss), reducing network traffic, and allowing gesture control without a network connection (*id.* ¶¶ 66, 69).

Thus, for the foregoing reasons, we are persuaded that Petitioner's contentions regarding claim 1 are supported adequately.

4. Analysis of Claim 2

Petitioner contends that Hullender teaches specific magnitudes as recited in claim 2, i.e., "any of: a current length, a current area, a current intensity, a current force, a length history, an area history, an intensity history, and a force history." Pet. 34. Patent Owner relies on the arguments made regarding independent claim 1. Prelim. Resp. 20.

We are persuaded, at this stage, that Petitioner's contentions regarding Hullender are supported adequately. Pet. 34–35. Hullender teaches that the gesture includes characteristics such as, *inter alia*, size, i.e., "a current length." *See, e.g.*, Ex. 1005 ¶ 57 (explaining that the size of the gesture as written by the stylus "permits [the] gesture to have varying impact or extent on what they are modifying"); *see also id.* ¶¶ 44, 52 (action area), 53 (stylus pressure; stroke speed), 63 (number of taps), 75 (duration of the stroke).

For the reasons discussed above, we are persuaded that Petitioner's contentions regarding claim 2 are supported adequately.

5. Analysis of Claims 3 and 4

Regarding claims 3 and 4, Petitioner presents contentions nearly identical to those considered above regarding claims 1 and 2, which recite substantially similar limitations. Pet. 36–38; *compare* Ex. 1001, 12:16–57, *with id.* at 12:58–14:16. Petitioner also contends that Hullender teaches a "non-transitory computer-readable storage medium containing a program of machine-readable instructions . . ." as recited in the preamble of claim 3. Pet. 36–37. Patent Owner presents the same arguments considered above with respect to claim 1. *See generally* Prelim. Resp. 9–26.

Petitioner's contention that Hullender teaches a non-transitory computer-readable storage medium, as recited in the preamble of claim 3, is supported adequately. *See* Ex. 1005 ¶¶ 31–32 ("nonvolatile storage of computer readable instructions"). For the reasons discussed above regarding claims 1 and 2, we are persuaded that the remainder of Petitioner's contentions regarding claims 3 and 4 are supported adequately.

E. Obviousness over the Combined Teachings of Kiraly and Agulnick

Petitioner contends that claims 1–4 of the '239 patent are unpatentable as obvious over the combined teachings of Kiraly and Agulnick. Pet. 38–67. Patent Owner disputes Petitioner's contentions. Prelim. Resp. 26–52. For reasons that follow, we determine Petitioner has demonstrated a reasonable likelihood of prevailing as to the challenged claims.

1. Overview of Kiraly (Ex. 1007)

Kiraly is a U.S. patent titled "Method and System for Gesture Category Recognition and Training Using a Feature Vector," which recognizes gestures input into a computer system by a cursor device. Ex. 1007, (54), (56). Specifically, Kiraly discloses computer system 112 including processor 100, display device 105, keyboard 106, and cursor directing device 107, which may be a mouse, finger pad, stylus, or "any other device having a primary purpose of moving a displayed cursor across a display screen based on user displacements." *Id.* at 5:3–38, Fig. 1. Computer 112 samples cursor displacement at a sampling frequency and records x, y coordinates for each sample, along with associated timestamps. *Id.* at 5:42–61, 6:28–36.

Kiraly explains that its cursor device can be used to input gestures. In operation, a user activates an appropriate trigger to indicate that a gesture will be input, and then uses cursor 107 to input the gesture. *Id.* at 6:1–3, 6:26–36, 6:37–42, 10:29–33 (trigger requires holding a gesture key on the keyboard while moving the mouse with the mouse button depressed). Gesture data, including the coordinate and timestamp data associated with the user's cursor input, is received and transformed into a feature vector to determine which predefined gesture category best matches the input data. *Id.* at 6:44–50, 7:33–40, Fig. 3; *see also id.* at 6:16–25 (defining "gesture category"). The feature vector then "is input to a neural network 320 that, in one embodiment, utilizes a radial basis function to identify the output gesture category." *Id.* at 7:41–43, Fig. 3; *see also id.* at 10:14–14:33, Figs. 8A–C (further detailing the gesture recognition process).

Kiraly further discloses that gestures may be differentiated from each other based on the displacement direction in which the gesture is traced, the starting point from which the gesture is traced, the speed with which different parts of the gesture is traced, and the number and/or type of strokes constituting the gesture. *Id.* at 9:16–10:11, Figs. 7A–D. Each gesture category is associated with computer actions to be performed and, once a gesture is recognized, the associated action is undertaken. *Id.* at 6:61–7:16, 7:17–32 (e.g., "save a document" or "read electronic mail"), Fig. 2.

2. Overview of Agulnick (Ex. 1008)

Agulnick is a U.S. patent titled "Control of a Computer Through a Position-Sensed Stylus," which employs proximity sensing to detect the approach of a stylus tip to a computer screen, and the gestural commands entered on that screen. Ex. 1008, (54), (56). Agulnick explains that, in prior art computer systems, "use of a mouse offers only a limited control vocabulary, basically pointing, dragging, clicking, and double clicking." *Id.* at 1:30–32. According to Agulnick, prior art systems that employed a stylus instead of a mouse also suffered from problems, including accuracy in using the stylus to select small displayed buttons, "the parallax caused by the separation of the surface that the stylus tip contacts and the active layer of the display," and difficulty identifying the end of a multi-stroke gesture, often requiring either timeouts or termination buttons. *Id.* at 1:41–2:68.

Agulnick purports to solve these problems "[b]y sensing both the proximity of the stylus tip to the display surface and the contact with the display surface," which allows the system to "more accurately discern the vertical movement of the stylus, provide a richer vocabulary of stylus movement for control of the computer, and offer better feedback to the user." *Id.* at 3:43–48, 6:58–63. For example, Agulnick explains that sensing stylus proximity improves detection of the termination of a gesture, without additional user input and without a delay. *Id.* at 8:52–68. Agulnick discloses that the gestures input by the stylus are associated with computer actions to be performed, e.g., page-turning or zooming. *Id.* at 3:32–40.

3. Analysis of Claim 1

Petitioner contends that claim 1 would have been obvious over the combined teachings of Kiraly and Agulnick. Petitioner relies on Kiraly's teachings for the majority of the limitations of claim 1. Pet. 39, 42–62 (limitations 1a–e). Petitioner contends that Kiraly describes gesture control of a computer, wherein gestures are input into the system by, e.g., a finger on a touchpad. *Id.* Gestures are identified based on properties of the gestures, such as stroke direction, stroke number, relationship between strokes, and stroke speed. *Id.*

Petitioner contends that Agulnick also teaches gesture control of a notebook computer, wherein gestures are input directly onto the display screen of the computer. *Id.* at 40. Petitioner contends that Agulnick discloses gestures that control, e.g., page-turning, zooming, and deletion, wherein the execution of these actions can be affected by properties of the gesture input; for example, Petitioner contends that Agulnick discloses that larger strokes may cause deletion of a larger portion of content than smaller strokes. *Id.* Petitioner relies upon Agulnick's teachings for limitations related to input of gestures directly onto the display screen (*id.* at 44–46, 48) and for limitations directed to using gestures to modify the subject matter presented on the display, wherein stroke magnitude impacts the execution of the actions associated with a gesture (*id.* at 49–50, 53–54, 59, 61–62).

In light of these teachings, Petitioner contends that "[a] POSITA would have been motivated to make Kiraly's computer system responsive to gestures input on the display device in light of Agulnick's teachings of the advantages of inputting a gesture directly onto a display and of incorporating stroke magnitude as a factor in gesture execution." *Id.* at 41. Specifically, Petitioner contends that Agulnick explains that direct input of gestures onto the display screen allows the system to "more accurately discern the vertical movement of the stylus, provide a richer vocabulary of stylus movements for control of the computer, and offer better feedback to the user." *Id.* Petitioner also argues that "a POSITA would have recognized that having stroke magnitude as a factor in gesture execution would enable a more granular control through gestural inputs." *Id.*

Patent Owner responds that a POSITA would not have been motivated to add a touchscreen to Kiraly's system because it was well-known that this modification would lead to user discomfort, i.e., "gorilla arm syndrome," caused by the user's prolonged extension of their arm outward from the body, to draw on the display screen. *Id.* at 26–30. Patent Owner argues that this would have resulted in less accuracy. *Id.* at 30–31. According to Patent Owner, Petitioner fails to provide a motivation that would have led a

POSITA to make such a modification, because the benefits purportedly realized by Agulnick's system are benefits over previous touchscreens, not applicable to Kiraly's cursor-based system. *Id.* at 31–39.

Patent Owner also argues that Kiraly and Agulnick do not teach "determining the magnitude of the touch upon the display surface." *Id.* at 40. According to Patent Owner, Kiraly does not determine the angle between stroke segments but, rather, simply determines an angle between a stroke segment and a horizontal reference direction. *Id.* at 40–44. Patent Owner also contends that although Kiraly differentiates gestures based upon relative speed, the system does not determine the quantitative speed with which the gesture was drawn. *Id.* at 44–48. Finally, Patent Owner argues that because Kiraly normalizes the stroke prior to gesture recognition, Kiraly teaches away from considering stroke size, as taught by Agulnick, in gesture recognition. *Id.* at 48–52.

We have considered the Petition and the Preliminary Response, and determine that Petitioner's arguments and evidence are sufficient to establish a reasonable likelihood of prevailing with respect to challenged claim 1.

iv. Teachings of the Prior Art

We are persuaded, at this stage, that Petitioner's contentions regarding Kiraly and Agulnick are supported adequately.

<u>*Preamble*</u>

Regarding the preamble, Kiraly discloses a "computer-implemented method" (implemented by computer system 112), a "processor" (central processor 101), "digital data storage" (volatile memory 102, non-volatile memory 103, data storage device 104), and a "display" (display device 105).

Ex. 1007, 5:4–18, Fig. 1. Kiraly also discloses cursor directing device 107, e.g., a finger pad or an electronic stylus. *Id.* at 5:24–38; *see also* Pet. 42–43.

Also regarding the preamble, Agulnick discloses a "display having a touch-sensitive display surface" (display 10 with pen digitizer 20) onto which a stylus can write directly. Ex. 1008, 6:20–22, 7:4–6, Fig. 2; *see also* Pet. 44–46.

Limitation 1a

Regarding limitation 1a, Kiraly stores gesture categories 210 in memory 102. Ex. 1007, 6:16–19, 6:50–52, Fig. 2. Kiraly teaches that gestures are executable by cursor directing device 107, and associated with prescribed operations ("computer commands") for modifying subject matter on the display (e.g., displaying email). *Id.* at 5:27–29, 6:65–7:5, 7:28–32; *see also* Pet. 46–50.

Also regarding limitation 1a, Agulnick discloses that gestures are drawn on the display with the electronic stylus. Ex. 1008, 7:4–6. Agulnick discloses that each gesture is associated with prescribed operations (e.g., page-turning, zooming). *Id.* at 3:35–40; *see also* Pet. 48–50.

Limitation 1b

Regarding limitation 1b, Kiraly teaches that gestures, comprised of strokes, are written with cursor directing device 107. Ex. 1008, 5:27–29. Kiraly teaches that processor 101 determines, *inter alia*, stroke speed. *Id.* at 4:65–5:16, 10:1–6; *see also* Pet. 50–54. Thus, to the extent not disclosed expressly, Petitioner adequately supports its contention that a "POSITA would have found it obvious to use this stored information to determine stroke speed [i.e., magnitude of the touch] so that stroke speed could be used for gesture differentiation." Pet. 52–53.

Also regarding limitation 1b, Agulnick discloses that gestures, comprised of strokes, are written on the display screen. Ex. 1008, 8:14–16, 8:26–28. Agulnick also teaches that magnitude of the touch, e.g., gesture size, effects the execution of the operation associated with that gesture. *Id.* at 12:21–25; *see also* Pet. 50–51, 53–54.

We have considered Patent Owner's argument that Kiraly and Agulnick do not teach "determining the magnitude of the touch upon the display surface" because, *inter alia*, Kiraly does not actually determine the quantitative speed with which a gesture is drawn. Prelim. Resp. 40, 44–48; Ex. 2001 ¶¶ 96–100. On this record, we disagree. Kiraly differentiates gestures based upon relative speed, e.g., "a very fast stroke" or "a much slower stroke." Ex. 1007, 9:52–10:6 ("[G]estures can be differentiated based on the speeds in which different sections of the gesture are made."), Figs. 7A, 7D (Fig. 7D reflecting relatively faster stroke 730 and relatively slower stroke 735 than the strokes in Fig. 7A). Even if Kiraly does not determine the actual *quantitative* speed with which a gesture was drawn, e.g., in inches per second, Patent Owner does not dispute that Kiraly teaches determining *relative* speeds. *See* Prelim. Resp. 47 (emphasis omitted) ("Kiraly's system operates in a manner that allows it to differentiate gestures drawn at different speeds."). At this stage of the proceeding, we will not import into the claim a requirement that quantitative, rather than qualitative, magnitude must be determined, when no such limitation is recited by the claim or clearly required by the '239 patent specification. *See, e.g.*, Ex. 1001, 8:35–39 ("Step 218 may conclude that the gesture ended with motion if there was any motion whatsoever [i.e., qualitative, relative speed], or step 218 may apply a predetermined threshold (e.g., one inch per second) [i.e., quantitative speed], above which the contact region is considered to be moving."). Because Petitioner's contentions regarding speed are sufficient, we need not reach Petitioner's alternative contentions regarding angle or size. Prelim. Resp. 40–44, 48–52.

Limitation 1c

Regarding limitation 1c, Kiraly discloses identifying, based on properties of the input from the cursor directing device, an executed gesture from among those in the collection of user gestures 210. Ex. 1007, 4:65–5:3 (processor 101), 6:44–52 (receive gesture data 205, transform into feature vector), 7:41–43 (recognition), 9:19–22 (stroke direction), 10:7–9 (stroke number or type), 13:38–47 (feature vector), Fig. 2 (step 205, properties of input data device); *see also* Pet. 54–57.

Limitation 1d

Regarding limitation 1d, Kiraly teaches that once the executed gesture is recognized, the associated prescribed operation, i.e., the "computer command" associated with that gesture, is identified and executed, which modifies the subject matter presented on the display. Ex. 1007, 4:65–5:3 (processor 101), 7:17–32 (execute command to save a document or display email), 14:18–21 (locate commands from memory list 220), 14:28–33 (apply commands), Fig. 8C (steps 910 (identify command) and 920 (execute command)); *see also* Pet. 57–59.

Also regarding limitation 1d, Agulnick discloses other prescribed operations associated with gestures, e.g., page-turning or zooming, which modify the subject matter presented on the display. Ex. 1008, 3:35–40. *See also* Pet. 59–60.

Limitation 1e

Regarding limitation 1e, Kiraly teaches that identification of the executed gesture is performed based on the determined magnitude of the cursor directing device, e.g., speed, as discussed in relation to limitation 1b. Ex. 1007, 9:52–10:6 ("[G]estures can be differentiated based on speeds in which different sections of the gesture are made."), Figs. 7A, 7D; *see also* Pet. 60–61.

Limitation 1f

Regarding limitation 1f, Agulnick teaches that the subject matter presented on the display is responsive to the determined magnitude of the stylus input. For example, Agulnick teaches that the size of the gesture input by the stylus (size being a stroke magnitude) dictates the size of displayed content that will be acted upon. Ex. 1008, 12:21–25 (explaining that the size of the gesture as written by the stylus is an "attribute affecting the target of the gesture"); *see also* Pet. 61–62.

v. The Proposed Combination

We are persuaded, at this stage of the proceeding, that Petitioner supports adequately the contention that a POSITA would have been motivated to combine the cited teachings of Kiraly and Agulnick. Pet. 40–41; Ex. 1003 ¶¶ 64–69, 93–98. Upon consideration of the record before us, we credit Dr. Myers' testimony that a POSITA would have found it obvious to "implement[] Kiraly's display device 105 . . . as a touch-sensitive display device" to be responsive to gestures input directly on the display screen, as taught by Agulnick. Ex. 1003 ¶¶ 93–95. We also credit Dr. Myers' testimony that a POSITA would have been motivated to make this modification to achieve advantages taught by Agulnick and to improve accuracy. *Id.* ¶ 95.

We have considered Patent Owner's argument that a POSITA would not have been motivated to add Agulnick's touchscreen to Kiraly's system because it would lead to user discomfort and inaccuracy. Prelim. Resp. 26–31; Ex. 2001 ¶¶ 66–74; Exs. 2003–2005. Patent Owner's cited evidence reasonably shows that problems with fatigue and inaccuracy were known to be associated with a user extending their arm to draw on a touchscreen display, and supports Patent Owner's argument. *See, e.g.*, Ex. 2004, 1, 6–7 (70^o touchscreen position led to most fatigue and lowest preference); Ex. 2005, 1–2 (90^o touchscreen position led to most fatigue and least precision); Ex. 2001 ¶¶ 67–74.

However, the teachings of Kiraly and Agulnick support Dr. Myers' contention that the proposed combination would have been obvious to a POSITA. For example, Agulnick explains that the disclosed touch-sensitive display surface "may also be implanted in other, non-portable computers," and Kiraly discloses such a non-portable computer system. Ex. 1008, 6:14–15; Ex. 1007, 5:4–18, Fig. 1. Additionally, Kiraly discloses that the computer system's cursor directing device 107 may be "a finger pad (track pad)" or "an electronic stylus." Ex. 1007, 5:29–38. These teachings support Dr. Myers' testimony that a POSITA would have found it obvious to implement Kiraly's display device as a touch-sensitive display, which may be responsive to an electronic stylus. Ex. 1003 ¶¶ 93–94.

Accordingly, in light of the evidence of record, we determine that a material dispute of fact exists, favoring institution. 37 C.F.R. § 42.108(c). We recognize that this is a close question, and that Patent Owner presents competent evidence supporting its argument. However, adequate evidence of record supports Petitioner's contention that the proposed modification of Kiraly in view of Agulnick would have been obvious. We invite the parties to develop the record on this issue during the course of trial. Patent Owner's arguments raise legitimate questions and, although we determine that Petitioner has met the burden for institution of *inter partes* review, the standard of review is different at the Final Written Decision stage.

We also have considered Patent Owner's argument that the benefits purportedly realized by Agulnick's system are not applicable to Kiraly's mouse-based system, because the disclosed benefits apply only to touchscreens. Prelim. Resp. 31–39 (citing Ex. 1008, 3:43–48); Ex. 2001 ¶¶ 76–87. On this record, we disagree. Patent Owner incorrectly characterizes Kiraly as limited to mouse-based cursor systems. Prelim. Resp. 35–37. As noted above, however, Kiraly explains that cursor directing device 107 may be "a finger pad (track pad)" or "an electronic stylus." Ex. 1007, 5:29–38. Patent Owner has not shown sufficiently that the benefits taught by Agulnick, and upon which Petitioner relies, are inapplicable to Kiraly's touch-based embodiments, e.g., a "finger pad (track pad)" or "an electronic stylus." For example, the ability to "more accurately discern the vertical movement of the stylus" (Ex. 1008, 3:45–46) appears equally beneficial to the electronic stylus disclosed by Kiraly.

Additionally, we are persuaded by Dr. Myers' unrebutted testimony that "a POSITA would have modified Kiraly's gesture recognition system to make the gesture-invoked commands described by Agulnick accessible by gesture control through Kiraly's system," e.g., to expand the user's ability to control the computer, for example, to permit page-turning and zooming. *Id.* ¶¶ 96–97. We credit Dr. Myers' testimony that "given the sensitivity of at least some of Agulnick's commands to the magnitude of the strokes of the corresponding gestures, a POSITA would have recognized the increased granularity of control that would be available to a user in this combined system." *Id.* ¶¶ 96, 98.

Thus, for the foregoing reasons, we are persuaded that Petitioner's contentions regarding claim 1 are supported adequately.

4. Analysis of Claim 2

Petitioner contends that Agulnick teaches specific magnitudes as recited in claim 2, i.e., "any of: a current length, a current area, a current intensity, a current force, a length history, an area history, an intensity history, and a force history." Patent Owner relies on the arguments made regarding independent claim 1. Prelim. Resp. 20.

We are persuaded, at this stage, that Petitioner's contentions regarding Agulnick are supported adequately. Pet. 62–64. Agulnick teaches that the gesture includes characteristics such as, *inter alia*, size, i.e., "a current length." *See, e.g.*, Ex. 1008, 12:21–25 (explaining that the size of the gesture as written by the stylus is an "attribute affecting the target of the gesture"); *see also id.* at 14:49–56 ("holding the tip down"), Fig. 45 (number of taps 621, 622, 512, 514).

Thus, for the foregoing reasons, we are persuaded that Petitioner's contentions regarding claim 2 are supported adequately.

5. Analysis of Claims 3 and 4

Regarding claims 3 and 4, Petitioner presents contentions nearly identical to those considered above regarding claims 1 and 2, which recite substantially similar limitations. Pet. 64–67; *compare* Ex. 1001, 12:16–57, *with id.* at 12:58–14:16. Petitioner also contends that Kiraly and Agulnick teach "non-transitory computer-readable storage medium containing a program of machine-readable instructions . . ." as recited in the preamble of claim 3. Pet. 64–65. Patent Owner presents the same arguments considered above with respect to claim 1. *See generally* Prelim. Resp. 26–52.

Petitioner's contention that Kiraly and Agulnick teach a non-transitory computer-readable storage medium, as recited in the preamble of claim 3, is supported adequately. *See* Ex. 1007, 5:8–18 ("non-volatile memory"), 5:24–38; Ex. 1008, Abstract. For the reasons discussed above regarding claims 1 and 2, we are persuaded that the remainder of Petitioner's contentions regarding claims 3 and 4 are supported adequately.

III. CONCLUSION

On April 24, 2018, the Supreme Court held that a final written decision under 35 U.S.C. § 318(a) must decide the patentability of all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1357 (2018). After considering the evidence and arguments presented in the Petition and Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that claims 1–4 of the '239 patent are unpatentable. Accordingly, we institute an *inter partes* review of all claims and all grounds presented in the Petition.

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4 of the ’239 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the ’239 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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