

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VALVE CORPORATION,
Petitioner,

v.

IMMERSION CORPORATION,
Patent Owner.

IPR2024-00582
Patent 11,175,738 B2

Before MICHAEL R. ZECHER, CHRISTOPHER L. OGDEN, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

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

I. INTRODUCTION

Valve Corporation (“Petitioner”) filed a Petition (Paper 2, “Pet.”) under 35 U.S.C. §§ 311–319 requesting *inter partes* review (“IPR”) of claims 1–6, 14–16, and 19 of U.S. Patent No. 11,175,738 B2 (Ex. 1001, “the ’738 patent”). Immersion Corporation (“Patent Owner”) filed a Preliminary Response. Paper 6. After considering the arguments presented in the Preliminary Response, we determined that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail with respect to challenging at least one of the challenged claims of the ’738 patent. We instituted this IPR under 35 U.S.C. § 314 on September 25, 2024, as to claims and all grounds raised in the Petition. Paper 10 (“Institution Decision”).

Patent Owner filed a Response to the Petition (Paper 15, “PO Resp.”), Petitioner filed a Reply (Paper 21, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 24, “PO Sur-reply”). With our authorization, Petitioner also identified what it alleged to be new arguments in Patent Owner’s Sur-reply (Paper 27), and Patent Owner responded to that (Paper 29). *See infra* Section III.C.2(b)(2). We held an oral hearing on June 23, 2025, and the transcript is entered into the record. Paper 33 (“Tr.”).

On September 2, 2025, based on the authority provided under 37 C.F.R. § 42.100(c), the Chief Judge determined that good cause exists to extend the one-year period for issuing a final written decision. Paper 35. On September 4, 2025, we issued an order extending the one-year period, for good cause, by up to six months after the normal deadline of September 25, 2025. Paper 38.

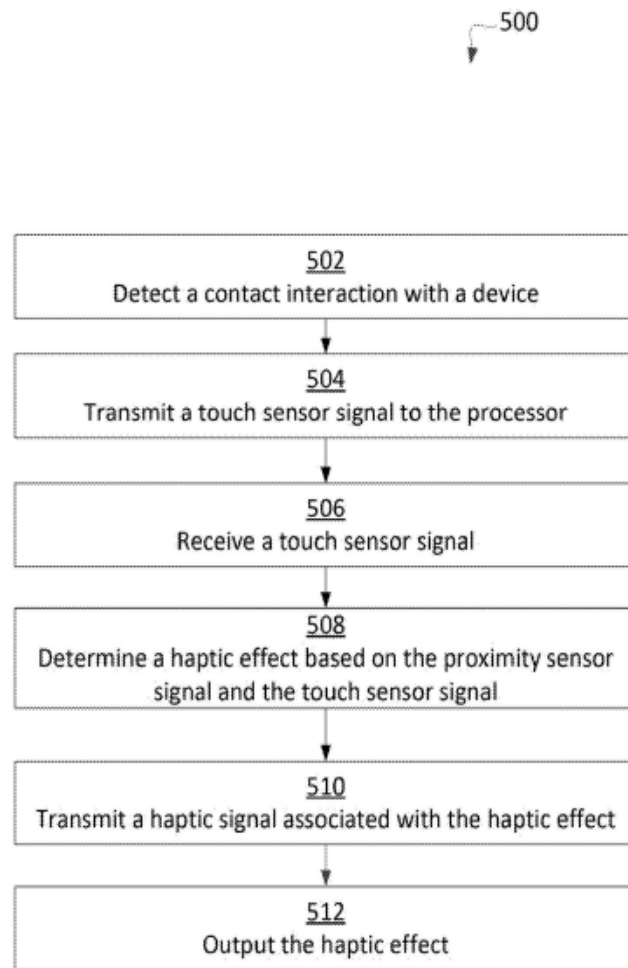
This is a final written decision under 35 U.S.C. § 318(a) as to whether the claims challenged in the *IPR* are unpatentable. For the reasons below, we conclude that all the challenged claims are unpatentable.

II. BACKGROUND

A. THE '738 PATENT (EX. 1001)

The '738 patent describes a device that includes a proximity sensor and a touch sensor for detecting non-contact and contact-based interactions, respectively, with a touch-sensitive device, and a processor that generates an output signal, for transmission to a haptic output device, based at least in part on input from both sensors. Ex. 1001, code (57).

Figure 5, reproduced below, is a flowchart illustrating an embodiment of the claimed invention:



The flowchart begins with step 502, in which a touch sensor of a computing device “detects a user’s finger contacting a touch-sensitive surface” of the device via, for example, “a capacitance sensor that senses a change in capacitance as the user’s finger touches the sensor.” Ex. 1001, 11:17–21. In step 504, “the touch sensor . . . generates a signal and transmits the signal to the processor” of the computing device. *Id.* at 11:26–28. In steps 506, 508, and 510, “the processor . . . receives the touch sensor signal,” then “determines a haptic effect based at least in part on the touch sensor signal and on [a] proximity signal” from a proximity sensor, and then “transmits a haptic signal associated with the haptic effect to the haptic output device,” respectively. *Id.* at 11:28–32, 11:42–45.

As an example of step 508, in which the haptic effect is based on both touch and proximity signals, the '738 patent states that “the processor . . . may be configured to output a particular haptic effect associated with a particular control on a user interface element displayed on the touch sensitive surface,” and the “haptic effect may further be modified or combined with another haptic effect based on the proximity sensor signal.” Ex. 1001, 11:32–37. According to the '738 patent, “the haptic effect can include one or more haptic effects. For example, the haptic effect can include a haptic effect meant to confirm ‘pushing’ on a virtual button.” *Id.* at 11:37–40.

B. CHALLENGED CLAIMS AND GROUNDS

Independent claim 1 is as follows:

- [1PRE] 1. A device comprising:
- [1A] a proximity sensor capable of detecting a non-contact interaction with a touch-sensitive device and outputting a first sensor signal;
 - [1B] a touch sensor capable of detecting a touch with the touch-sensitive input device and outputting a second sensor signal;
 - [1C] a haptic output device configured to receive a haptic output signal and output a haptic effect in response to the haptic output signal; and
 - [1D] a processor configured to:
 - [1E] receive the first sensor signal and the second sensor signal;
 - [1F] generate a haptic output signal based at least in part on the first and second sensor signals; and
 - [1G] transmit the haptic output signal to the haptic output device.

Ex. 1001, 14:6–22 (Petitioner’s reference numbers added).

Petitioner argues four grounds for IPR, as summarized in the following table (*see* Pet. 4):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 5, 6, 14, 15, 19	102(a)(1), 103	Pratt ¹
1–6, 14–16, 19	103	Pratt, Ku ²
1–5, 14–16, 19	103	Ku
1–6, 14–16, 19	103	Ku, Jiang ³

C. DECLARATORY TESTIMONY

Petitioner submits two declarations by Dr. Gregory F. Welch. Exs. 1004, 1042; *see also* Ex. 1005 (Dr. Welch’s curriculum vitae). Patent Owner likewise submits a declaration by Dr. Robert Akl. Ex. 2008; *see also* Ex. 2009 (Dr. Akl’s curriculum vitae).⁴

D. RELATED PROCEEDINGS

As a related matter, the parties identify *Immersion Corp. v. Valve, Corp.*, No. 2:23-cv-00712 (W.D. Wash. filed May 15, 2023; stayed Apr. 4, 2024). Pet. x; Paper 37, 1.

¹ Pratt et al., US 2012/0249474 A1, published Oct. 4, 2012 (Ex. 1006).

² Ku et al., US 8,531,319 B2, issued Sept. 10, 2013 (Ex. 1008).

³ Jiang et al., US 2015/0061703 A1, published Mar. 5, 2015 (Ex. 1010).

⁴ Patent Owner previously submitted a declaration by Dr. Craig Rosenberg with its Preliminary Response. Ex. 2001.

III. ANALYSIS

A. LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim is obvious over the prior art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To assess the level of ordinary skill, we construct a hypothetical “person of ordinary skill in the art,” from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct “presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

Petitioner argues that a person of ordinary skill in the art would have had “a bachelor’s degree in electrical engineering, computer science, or a related field, plus at least two years of industry or graduate-level academic experience with human–computer interaction.” Pet. 6 (citing Ex. 1004 ¶¶ 46–54).

Patent Owner argues that a person of ordinary skill in the art “would have had a bachelor’s degree in electrical engineering or computer science (or an equivalent degree), and two years of practical or industry experience in the field of human computer interaction (HCI), including implementation of computer-based systems and software for providing haptic feedback effects to a user.” PO Resp. 18 (citing Ex. 2008 ¶ 28).

The parties agree that formal education could substitute for practical experience, and vice versa. Pet. 6, PO Resp. 18.

The parties' proposed levels of ordinary skill appear to be substantially similar, supported by testimonial evidence, and consistent with the asserted prior art and the types of problems and solutions identified in the '738 patent. *See, e.g.*, Ex. 1001, 1:6–61. Although we discern no difference in the outcome of this decision from choosing one over the other, we adopt Petitioner's proposed level of skill for this decision. The outcome of our decision would be the same under Patent Owner's proposal.

B. CLAIM CONSTRUCTION

In an IPR, we construe a patent claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). This generally includes “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.” *Id.* The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent” and “as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313, 1321.

There are only two circumstances in which a construction may depart from the ordinary and customary meaning: “1) when a patentee sets out a definition and acts as [their] own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Any such special meaning of a term “must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the

invention.” *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

Patent Owner argues that we should construe the phrase “haptic effect” as “a single, unmodified haptic effect that is based on the proximity sensor signal and the touch sensor signal.” PO Resp. 19 (citing Ex. 2008 ¶¶ 31–36). In support of this proposed construction, Patent Owner points to Figure 5 and supporting text which refers to “a haptic effect based on the proximity sensor signal and the touch sensor signal.” *Id.* at 20 (emphasis omitted) (quoting Ex. 1001, Fig. 5) (citing Ex. 1001, 11:29–40). According to Patent Owner, although the haptic effect in Figure 5 may “subsequently be further combined or modified, . . . the original haptic effect as claimed is a single haptic effect that has *not yet* been modified or combined with another haptic effect.” *Id.*; *see also* PO Sur-reply 6–7. But Patent Owner asserts that any such modified or combined haptic effect is a “secondary haptic effect [that] is beyond what is determined at step 508 [of Figure 5] and outside the scope of the claimed limitation.” PO Resp. 21 (citing Ex. 2008 ¶ 35).

Finally, Patent Owner argues that, on appeal during prosecution of the application leading to the ’738 patent, “the Board agreed that a disclosure [in Choe, Ex. 1015] of combining haptic effects was insufficient to anticipate Claim 1 because the original, underlying haptic effect must be based at least in part on *both* the proximity and touch signals.” PO Resp. 22 (citing Ex. 1002, 1091).

In its Reply, Petitioner argues that Patent Owner’s proposed construction of “haptic effect” is unduly narrow. Pet. Reply 15–16. Petitioner points to a disclosure in the ’738 patent that, “[i]n some embodiments, the haptic effect can include one or more haptic effects,” such

as, for example, “a haptic effect meant to confirm ‘pushing’ on a virtual button.” *Id.* at 16–17 (emphasis omitted) (quoting Ex. 1001, 11:32–40). Petitioner also points to disclosures in the ’738 patent in which a haptic effect may (1) “compris[e]” various effects, including a “sensation”; (2) may be “perceived by a user”; and (3) may be “var[ied].” *Id.* at 17–18 (citing Ex. 1001, 5:19–23, 6:15–17, 9:59–62). Thus, Petitioner argues that “a haptic effect encompasses a sensation experienced by the device user.” *Id.* at 18. Petitioner argues, however, that a haptic effect is not *limited* to a sensation because the ’738 patent uses the term haptic effect in “different ways.” *Id.* at 19 (citing Ex. 1036, 21:12–14).

Finally, Petitioner argues that the prosecution history does not support Patent Owner’s proposed construction. Pet. Reply 24. According to Petitioner, Choe (Ex. 1015), the reference that was the basis of the Examiner’s rejection, disclosed two haptic effects shown in separate figures, but never disclosed, for anticipation purposes, that they “could or should be combined such that users experienced a single sensation.” *Id.* (citing Ex. 1002, 1088; Ex. 1015 ¶¶ 136–138).

In its Sur-reply, Patent Owner argues that the ’738 patent’s disclosure that haptic effects can be modified or combined with other haptic effects “underscores that the original haptic effect is a single, unmodified haptic effect.” PO Sur-reply 1–2. According to Patent Owner, this embodiment of a haptic effect derived from further modification “is not the original, claimed haptic effect” and it is an embodiment that “falls outside the scope of claim 1.” *Id.* at 2. Patent Owner contends that the disclosure “draws a clear line” between unmodified haptic effects and modified or combined haptic effects, and only the first of these is part of the claimed invention. *Id.* at 4–5.

Likewise, Patent Owner alleges that a haptic effect that includes *other* haptic effects is an example of an unclaimed, unpreferred embodiment in the '738 patent. PO Sur-reply 2–3. Patent Owner also argues that “[i]t is true that combined haptic effects may be perceived as a single sensation but that does not mean that they are single, unmodified haptic effects as that term is used in the claims.” *Id.* at 3. According to Patent Owner, interpreting a haptic effect as a sensation is inconsistent with the plain meaning of the term “haptic effect.” *Id.* at 4.

As to the prosecution history, Patent Owner argues that “the Board’s analysis of Choe clarified that the haptic effect must be based on one signal that is itself based on proximity and touch.” PO Sur-reply 5.

We find insufficient support in the specification or prosecution history to narrow the term “haptic effect” to only one that has not been modified or combined with another haptic effect. The '738 patent still refers to combined or modified haptic effects as a “haptic effect.” Ex. 1001, 11:35–38 (“a haptic effect may further be modified or combined with another haptic effect” and “the haptic effect can include one or more haptic effects”). We also find no support for importing into the construction of “haptic effect” the '738 patent’s example in which a haptic effect can be “based on the proximity signal and the touch sensor signal.” That is already an explicit claim limitation. *Id.* at 14:19–20 (“generate a haptic output signal based at least in part on the first [proximity] and second [touch] sensor signals”). Including that limitation as part of the construction of “haptic effect” would render the limitation superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was correct to not include in its construction of ‘menu’ features of menus that are expressly recited in the

claims . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”).

We also disagree with Patent Owner that the ’738 patent’s references to haptic effects modified or combined with other haptic effects are unclaimed embodiments. The ’738 patent discloses that a proximity-based haptic effect may be combined with a touch-based haptic effect, such as when “a particular haptic effect associated with a particular control on a user interface element [is] further . . . modified or combined with another haptic effect based on the proximity sensor signal,” or when “the haptic effect [to be output by the processor] . . . include[s] a haptic effect meant to confirm ‘pushing’ on a virtual button.” Ex. 1001, 11:32–40. These examples are consistent with the claim language and we find no credible evidence in the record that these embodiments are intended to be excluded from the claimed invention.

Thus, we agree with Petitioner that it would be incorrect to construe the term “haptic effect” to include the extraneous limitations Patent Owner proposes. We also agree with Petitioner that a person of ordinary skill in the art reading the ’738 patent disclosure would have understood that a combined or modified haptic effect is still a haptic effect.

To the extent that the meaning of other claim language is disputed, we discuss it below in the context of analyzing Petitioner’s application of the prior art to the limitations of claim 1. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to

resolve the controversy.” (quoting *Vivid Techs., Inc. v. Am. Sci & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. ANTICIPATION/OBVIOUSNESS GROUND BASED ON PRATT

Petitioner argues that claims 1–3, 5, 6, 14, 15, and 19 are anticipated by Pratt or, alternatively, obvious over Pratt. Pet. 4, 8–40.

To show anticipation under § 102, a petitioner must locate every element in a claim, arranged as recited in the claim, in a single prior art reference. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). The limitations may be present in the reference “either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). In making this determination, we consider the reference “together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

A claim is unpatentable as obvious under § 103 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). When a ground in a petition is based on a combination of references, we consider “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We base our obviousness inquiry on factors 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) any objective indicia of obviousness or non-obviousness that may be in evidence. *See Graham*, 383 U.S. at 17–18.

For the reasons below, Petitioner has shown that Pratt anticipates the challenged claims and, likewise, that the challenged claims would have been obvious in view of Pratt.

1. Overview of Pratt

Pratt describes a haptic touch-screen device with a proximity sensor and controller to “calculate a proximity event based on the detected user interaction above the touch screen, and to control haptic driver operations according to the proximity event.” Ex. 1006, code (57). In addition to proximity, the device senses user touches on the touch screen and the amount of force involved in the touches. *Id.* ¶¶ 22–23.

In one embodiment, Pratt describes haptic effects associated with both proximity and touch, as shown in Figure 4, reproduced below:

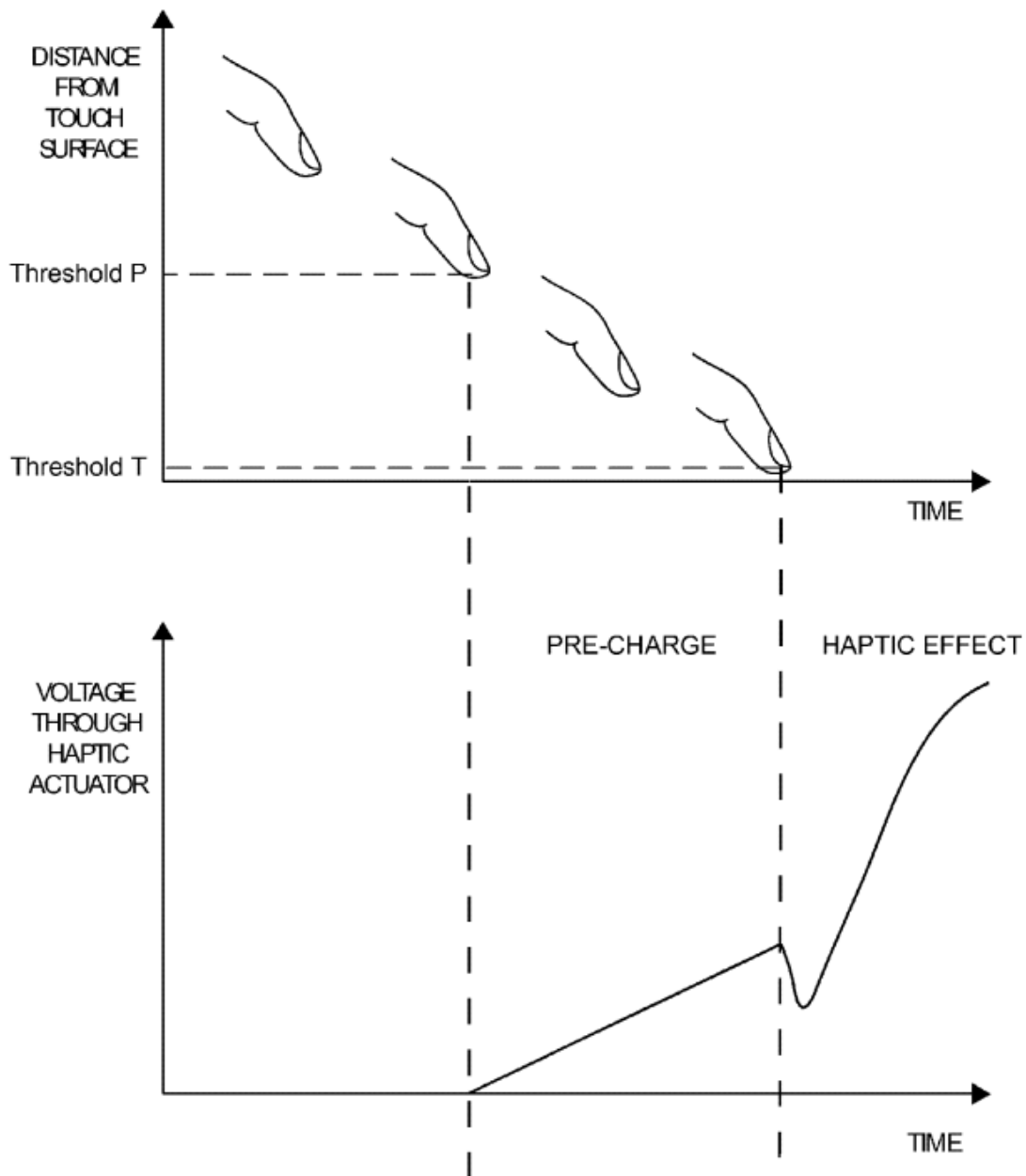


FIG. 4

Figure 4 “includes two plots. The top plot shows a user finger approaching the touch surface in a distance versus time graph, and the bottom plot shows a corresponding voltage through the haptic actuator versus time graph.”

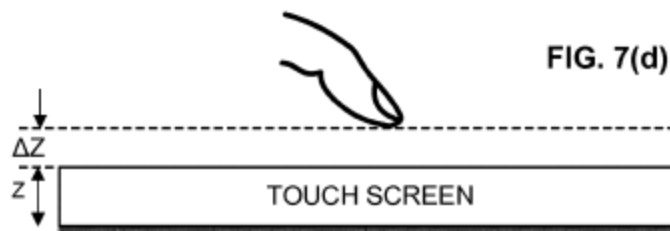
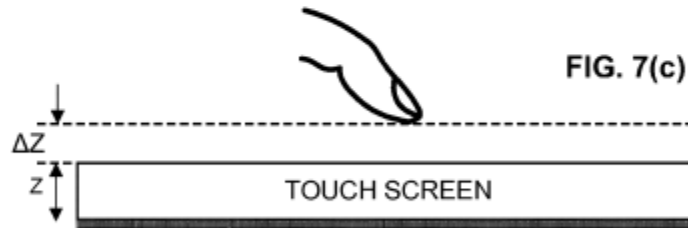
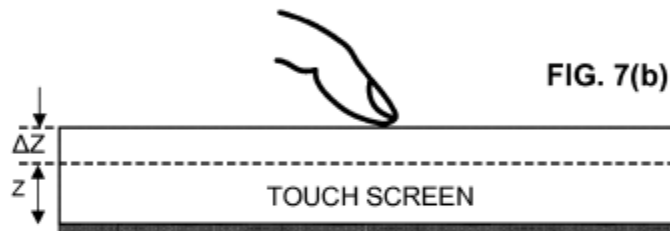
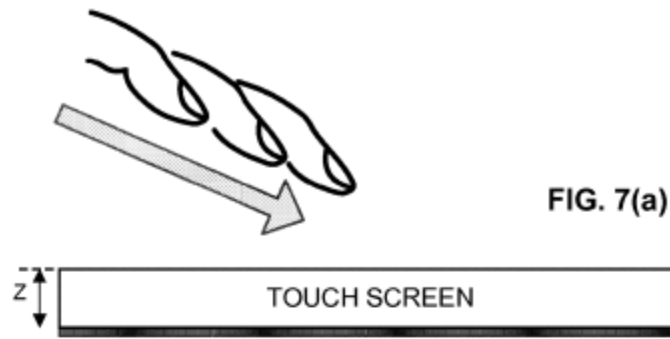
Ex. 1006 ¶ 38. As a user’s finger approaches the touch surface, the device uses the proximity sensor to calculate the rate of approach or the direction of movement to anticipate the time or location of the touch. *Id.* Also, at time t1

when the user's finger reaches distance threshold P from the touch surface, the haptic actuator begins to pre-charge for the anticipated time and location. *Id.* ¶ 39. As shown in the lower graph, the voltage increases as the finger approaches the touch surface. *Id.* at Fig. 4.

At time t₂, the device detects the user's touch on the touch surface at threshold T and drives the haptic actuator with a particular voltage associated with the intended touch characteristics. Ex. 1006 ¶ 39. Because of the pre-charging effect, "the device may generate the haptic effect faster upon touch screen contact . . . thereby reducing latency between the user touching the screen and feeling the corresponding haptic feedback." *Id.*

According to Pratt, the selected haptic effect for the touch "may be selected based on the rate of approach of the user's finger as it moves toward a touch screen—a first haptic effect may be selected in response to a relatively 'fast' velocity and a second haptic effect may be selected in response to a relatively 'slow' velocity." *Id.* ¶ 41. Thus, "different types of haptic events may be selected based in part on proximity, touch, and/or force events." *Id.* ¶ 42.

Pratt describes a specific example of pre-charging the haptic actuator to produce a "bubble" haptic effect as shown in Figure 7(a)–(d), reproduced below:



As shown above in Figure 7(a), a user's finger approaches a touch screen which has a height level Z , and the device's proximity sensor registers that approach. Ex. 1006 ¶ 50. As shown in Figure 7(b) the haptic actuator causes the touch screen to deflect by distance ΔZ toward the user's finger by the time the finger contacts the touch screen. *Id.* In Figure 7(c) the device

simulates a mechanical button click by “removing the pre-charge effect and inducing the touch screen to return to its default level” *Z*. *Id.* In Figure 7(d), “[a]fter the retraction of the touch screen, the user’s fingers may fall to the surface of the screen at the *Z* level.” *Id.* The bubble/click effect is “induced by the user feeling mechanical resistance at the first point of contact with the screen deflected forward . . . and then at the second point of contact with the screen at the rest position.” *Id.*

2. *Claim 1*

(a) Preamble (1PRE) and Limitations 1A–1D

The preamble of claim 1 and limitations 1A–1D recite

1. A device comprising:
 - a proximity sensor capable of detecting a non-contact interaction with a touch-sensitive device and outputting a first sensor signal;
 - a touch sensor capable of detecting a touch with the touch-sensitive input device and outputting a second sensor signal;
 - a haptic output device configured to receive a haptic output signal and output a haptic effect in response to the haptic output signal; and
 - a processor configured to [perform certain steps]

Ex. 1001, 14:6–16.

Petitioner argues that Pratt discloses the preamble and each of these limitations because it discloses proximity and touch sensors, a haptic output device, and a processor as recited. *See* Pet. 10–20 (citing Ex. 1006 ¶¶ 14–15, 21–22; Ex. 1004 ¶¶ 85–119).

Patent Owner does not specifically address these contentions. *See* PO Resp. Without needing to determine whether the preamble is limiting, we

find Petitioner’s arguments persuasive for the reasons set forth in the Petition.

(b) Limitations 1E–1G

Limitations 1E–1G recite steps that the claimed processor must perform: “[1E] receive the first sensor signal and the second sensor signal; [1F] generate a haptic output signal based at least in part on the first and second sensor signals; and [1G] transmit the haptic output signal to the haptic output device.” Ex. 1001, 14:17–22.

For limitations 1E and 1G, Petitioner argues that Pratt’s processor receives both proximity and touch signals and transmits a haptic output signal to the haptic output device. Pet. 20–21, 28–29 (citing Ex. 1006 ¶¶ 20–22, 24–25, 32–33, Fig. 1(b); Ex. 1004 ¶¶ 120–123, 152–153). Patent Owner does not specifically contest these arguments. *See* PO Resp. We find Petitioner’s arguments persuasive for the reasons given in the Petition.

Patent Owner’s arguments focus on Petitioner’s arguments and evidence for limitation 1F, which we address below.

(1) *“Bubble” Effect Embodiment*

For limitation 1F, Petitioner first argues that in Pratt’s “bubble” effect example of Figures 7(a)–(d), the haptic effect is based on both proximity and touch input signals. Pet. 24–26 (citing Ex. 1006 ¶¶ 4, 49–51; Ex. 1004 ¶¶ 138–147). Petitioner contends that Pratt’s bubble effect is analogous to the disclosure in the ’738 patent that a combined haptic effect may include a “haptic effect meant to confirm ‘pushing’ on a virtual button.” Pet. 24 (quoting Ex. 1001, 11:38–40) (citing Ex. 1001, 5:23–25; Ex. 1004 ¶¶ 135–137).

In response, Patent Owner argues that Pratt’s bubble effect is the combination of two sequential haptic effects, the first being a screen deflection based entirely on a proximity signal and the second being the subsequent flattening of the screen based solely on a touch signal. PO Resp. 28–30 (citing Ex. 1006 ¶ 50, Fig. 7; Ex. 2008 ¶¶ 83–85). Despite “[t]he fact that the user may perceive the screen interaction as a single sensation”—a “click effect”—Patent Owner contends that it is not a haptic effect under Patent Owner’s proposed construction because it is the combination of two sequential haptic effects. *Id.* at 30–31 (citing Ex. 2008 ¶¶ 87–88). According to Patent Owner, Pratt’s bubble effect does not fall within the scope of limitation 1F because neither of the two parts of the effect is based on both the proximity signal and the touch signal. *Id.* at 31–35 (citing Ex. 1006 ¶¶ 24–25; Ex. 1001, 11:29–40; Ex. 2008 ¶¶ 90–95); *see also* PO Sur-reply 7–8 (reiterating its arguments based on its proposed claim construction).

In its Reply, Petitioner argues that Pratt’s bubble effect is not two distinct haptic effects because “the sensation experienced by the user depends on signals from both Pratt’s proximity sensor and Pratt’s touch sensor—thereby providing the intuitive experience of simulating a ‘clicking functionality.’” Pet. Reply 19 (citing Ex. 1006 ¶¶ 49–51; Ex. 1036, 12:17–14:10 (Welch deposition testimony)); Ex. 1004 ¶¶ 141–147). Petitioner contends that Patent Owner’s argument depends on its proposed claim construction and does not reflect the reality of the haptic effect the user experiences. *See id.* at 19–23.

We find Petitioner’s argument persuasive that Pratt’s “bubble” effect discloses a haptic output signal for a single haptic effect based on both proximity and touch signals. Ex. 1006 ¶¶ 49–51, Figs. 7(a)–(d). Pratt’s

“bubble” effect would appear to be a different sensation to the user if pre-charging did not happen, and that pre-charging relies on the proximity sensor. This would be true even if the pre-charging portion of the effect could fairly be partitioned out as a separate and distinct haptic effect from the portion of the haptic effect that occurs after the touch. The user would not experience the haptic effect as two sequential effects, but as a single clicking or bubble-popping effect.

We also disagree with Patent Owner’s arguments because they are predicated on its proposed construction of the term “haptic effect,” which we decline to adopt, as explained in our claim-construction analysis above. *See supra* Section III.B.

For the above reasons, we find Petitioner’s argument persuasive that Pratt’s bubble embodiment discloses limitation 1F.

(2) *“Rate of Approach” Embodiment*

Independent of its bubble-effect argument, Petitioner also argues that Pratt discloses selecting different haptic effects, which occur upon detecting a touch, based on the prior rate of approach of the user’s finger toward the touch screen as measured by the proximity signal. Pet. 26–27 (citing Ex. 1006 ¶¶ 34, 41; Ex. 1004 ¶¶ 148–149). According to Petitioner, a person of ordinary skill in the art would have understood “that the actual haptic effect is only generated after the device ‘detect[s] the finger making contact with the touch surface.’” Pet. 27 (alteration in original) (quoting Ex. 1006 ¶ 39) (citing Ex. 1004 ¶ 149). Alternatively, Pratt argues that a person of ordinary skill in the art would have had reason to implement Pratt’s device this way to distinguish between different touches and to minimize latency. Pet. 28 (citing Ex. 1006 ¶ 53; Ex. 1004 ¶¶ 150–151).

In our Institution Decision, we found sufficiently persuasive Petitioner’s argument that Pratt discloses outputting a haptic effect, after detecting a touch, that differs depending on whether the approach to the surface was fast or slow. Institution Decision 17 (citing Ex. 1006 ¶ 24 (“[T]he haptic response search module . . . may match the calculated proximity, touch, and/or force event data to a stored haptic profile that may generate a haptic command associated with the matched haptic profile.”), ¶¶ 39–41 (“At . . . time t2, the device may drive the haptic actuator with . . . a corresponding haptic effect voltage based on the haptic effect profile associated with the *touch characteristics*. . . . In an embodiment, haptic selection may also be based on sensor measurements. *For example, haptic effect types may be selected based on the rate of approach*” (emphasis added))).

Patent Owner argues in its Response that our Institution Decision misinterpreted Pratt’s rate-of-approach embodiment because paragraph 41 of Pratt does not mention basing the haptic effect on touch: “the haptic effect is generated based on proximity alone, not touch.” PO Resp. 35 (citing Ex. 1006 ¶ 41). According to Patent Owner, “the purpose of the haptic effect disclosed in this embodiment of Pratt is to convey information *before* the user touches the menu icon,” so a person of ordinary skill in the art “would not wait to convey that information until after they have touched the menu icon.” *Id.* (citing Ex. 2008 ¶¶ 96–97).

In its Reply, Petitioner argues that Patent Owner only responded to the Institution Decision and did not engage with Petitioner’s argument and supporting evidence (including discussion in Pratt’s paragraph 39) that the rate-of-approach embodiment includes producing a haptic effect based on

both proximity and touch signals. Pet. Reply 5–8 (citing Ex. 1006 ¶¶ 39–41; Ex. 1004 ¶¶ 148–151).

In its Sur-reply, Patent Owner argued that Pratt’s paragraphs 39 and 41 reflect different and incompatible embodiments: paragraph 39 describes generating a haptic effect based on touch and paragraph 41 generates a haptic effect based solely on rate of approach, which are distinct solutions to different problems. PO Sur-reply 8–13 (citing Ex. 1006 ¶¶ 39, 41; Ex. 2008 ¶¶ 73, 96–97, 114).

Patent Owner’s argument is inconsistent with the evidence of record.⁵ Immediately after paragraph 41, Pratt discloses that “different types of haptic events may be selected based in part on proximity, touch, *and/or* force events.” Ex. 1006 ¶ 42 (emphasis added). In light of this, a person of ordinary skill in the art would have understood Pratt to disclose that a haptic effect can be selected based on both proximity-related data, such as the rate of approach, and touch-related data.

In addition, as we noted in our Institution Decision at page 17, Pratt’s independent claim 16 recites that the controller uses sensor data to select a haptic output profile to generate a haptic command based on “user interaction above a touch screen,” which in one embodiment (dependent

⁵ Petitioner argues that Patent Owner’s Sur-reply arguments were untimely. Paper 27, 1–2 (arguing that the Patent Owner response only addressed paragraph 41 of Pratt and did not respond to other evidence, including paragraph 39). Patent Owner disagrees. Paper 29, 1–2 (Patent Owner arguing that its Sur-reply argument “simply expounds” on its argument in the Response “in response to Petitioner’s Reply”). Because we find Petitioner’s argument persuasive, we need not resolve whether Patent Owner’s Sur-reply arguments were untimely.

claim 17) includes “a rate of approach.” Ex. 1006, claims 16, 17. Claim 19, which also depends from claim 16, further recites that “the sensor data . . . *also* relates to a user touch on the touch screen and to an amount of force of the user touch.” *Id.*, claim 19 (emphasis added). Thus, claim 19 recites an embodiment in which both “user interaction above a touch screen” (e.g., rate-of-approach data as embodied in claim 17 or other proximity data) and “user touch on the touch screen” are *both* used to select the haptic effect.

For the above reasons, we find Petitioner’s argument persuasive that Pratt’s rate-of-approach embodiment discloses limitation 1F.

(3) *Pratt’s General Disclosures*

In addition to Pratt’s two specific embodiments discussed above, Petitioner points to general statements in Pratt that (1) Pratt’s processor “may match the calculated proximity, touch, and/or force event data to a stored haptic profile and may generate a haptic command associated with the matched haptic profile,” and (2) “[d]ifferent types of haptic events may be selected based in part on proximity, touch, and/or force events.” Pet. 22 (quoting Ex. 1006 ¶ 24; then quoting *id.* ¶ 42) (citing Ex. 1004 ¶¶ 125–127, 131).

Patent Owner concedes that “Pratt refers generally to the three signals that can be used to generate a haptic effect,” but argues that “nowhere does Pratt disclose using *both* proximity and touch signals to generate a single haptic effect.” PO Resp. 34–35 (citing Ex. 2008 ¶¶ 94–95). According to Patent Owner, Pratt’s proximity, touch, and force signals are three distinct signal classifications that generate different haptic effects. *Id.* at 25–27 (citing Ex. 1006 ¶¶ 24, 42, 49–50, Figs. 1, 5; Ex. 2008 ¶ 82).

We disagree. Pratt explicitly states that haptic effects can be selected based on “proximity, touch, *and/or* force,” meaning that in at least one embodiment, a haptic effect can be selected based on all three categories of data, including both proximity data and touch data. Ex. 1006 ¶¶ 24, 42 (emphasis added).

Thus, we find Petitioner’s argument persuasive that Pratt discloses using both proximity and touch data to select a haptic effect as recited in limitation 1F.

(c) Conclusion as to claim 1

For the above reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that Pratt discloses all the limitations of claim 1 in a manner identical to that recited in the claim, or alternatively that a person of ordinary skill in the art would have had reason, in view of Pratt, to implement Pratt’s device as recited in claim 1. We therefore determine that Petitioner has shown that claim 1 is unpatentable under §§ 102 or 103 based on Pratt.

3. *Claims 2, 3, 5, 6, 14, 15, and 19*

Petitioner presents arguments addressing each of the limitations in claims 2, 3, 5, 6, and 14, which depend from claim 1, as well as independent claims 15 and 19, with support from the record and the testimony of Dr. Welch. *See* Pet. 29–40. Patent Owner does not present distinct arguments for these claims. *See* PO Resp. 22–35.

As one example, claim 2 depends from claim 1 and further recites “wherein the proximity sensor is integrated into the touch-sensitive device.” Ex. 1001, 14:23–24. Petitioner argues that Pratt’s proximity sensor is located

in the touch screen, and thus is “integrated” into it. Pet. 29–30 (citing Ex. 1006 ¶¶ 15, 19, 21, Fig. 1(a), claim 1; Ex. 1004 ¶¶ 154–155).

We agree with and adopt Petitioner’s uncontested analyses for claim 2 and each of the other claims, and credit Dr. Welch’s supporting testimony. Thus, we determine that Petitioner has shown that claims 2, 3, 5, 6, 14, 15, and 19 are unpatentable under §§ 102 or 103 based on Pratt.

4. Conclusion for Ground Based on Pratt

For the above reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–3, 5, 6, 14, 15, and 19 are unpatentable as anticipated by or obvious over Pratt.

D. OTHER OBVIOUSNESS GROUNDS

The remaining grounds challenge claims 1–6, 14–16, and 19 as obvious over (1) Pratt in view of Ku, (2) Ku alone (claim 6 is excluded from this ground), or (3) Ku in view of Jiang. Pet. 4, 40–82. These grounds challenge claims 4 and 16, which are not challenged in the first ground based on Pratt alone. However, Patent Owner does not provide separate arguments for claims 4, 16, or any claims other than claim 1. *See* PO Resp. 36–55. We address these grounds below.

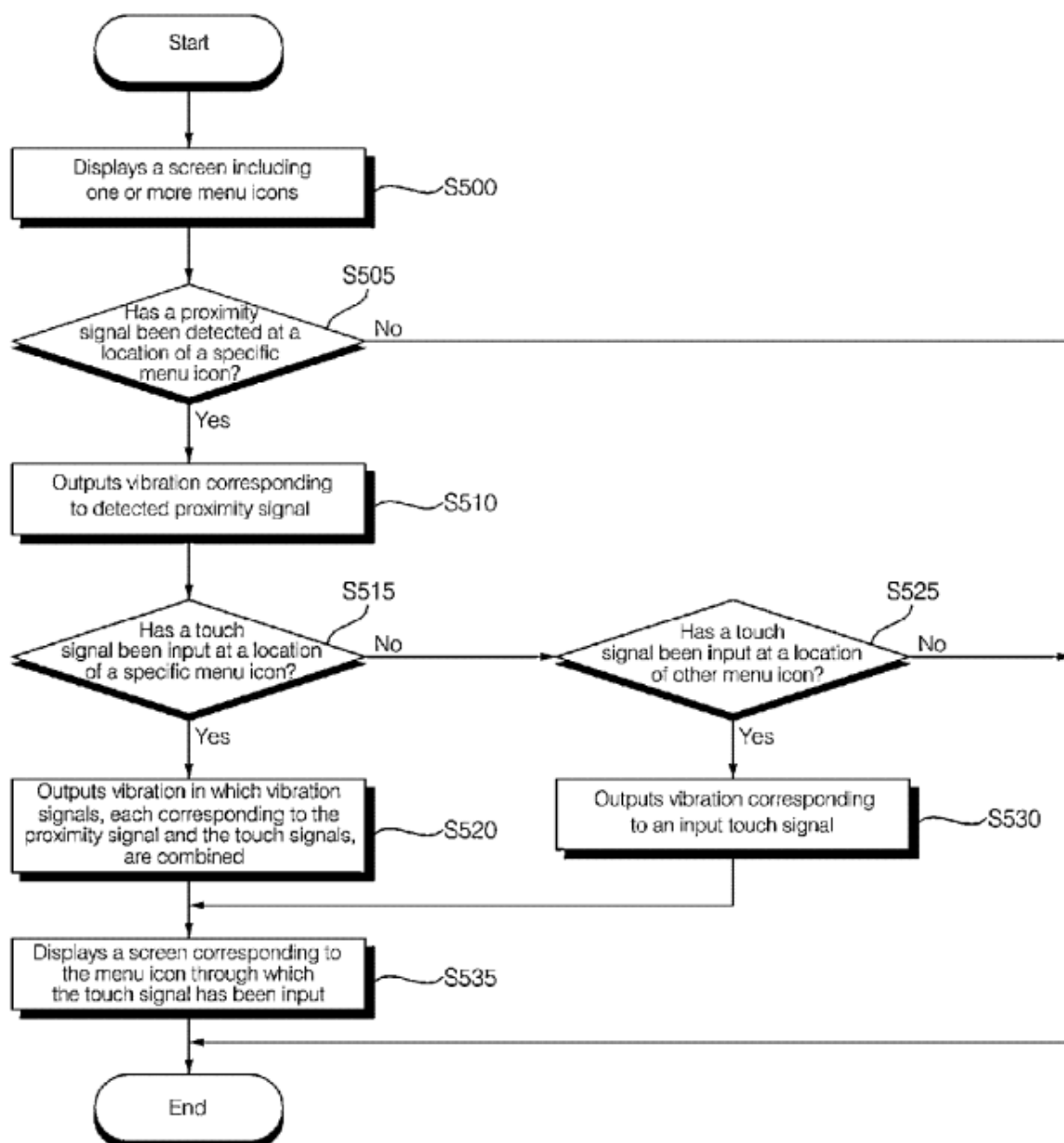
1. Overview of Ku

Ku describes a method of distinguishing two input signals that “may be proximity signals, touch signals, or a combination thereof,” and “outputting a combined vibration signal corresponding to” each of the two signals. Ex. 1008, code (57). For example, the method may include determining a first location associated with a proximity signal and a second

location associated with a touch signal, and “outputting a combined vibration signal corresponding to the proximity signal and the touch signal, in response to determining that the first and second locations are the same.” *Id.* at 1:63–2:5.

Figure 7, reproduced below, is a flowchart embodying this method:

FIG. 7



As shown above, the method of Figure 7 begins when a mobile device displays “a screen, including one or more menu icons” (step S500).

Ex. 1008, 11:49–50. At step S505, the mobile device’s controller “determines whether a proximity signal has been detected at the location of a specific one of the one or more menu icons through [a] proximity sensor.” *Id.* at 11:54–57. If so, then in step S510 the controller “outputs a vibration signal, corresponding to the detected proximity signal, through [a] haptic module.” *Id.* at 11:62–64.

Next, if the device detects a touch signal at the specific location of the menu icon (step S515), the controller “outputs vibration in which a vibration signal corresponding to the proximity signal, which has been detected in step S505, and a vibration signal corresponding to the touch signal, which has been input in step S515, are *combined* through the haptic module” (step S520). Ex. 1008, 12:20–24 (emphasis added). As part of this combining step S520, “[t]he respective vibration signals may be added or subtracted and then output as vibration.” *Id.* at 12:25–26. Otherwise, if there has been a touch signal at the location of *another* menu icon (step S525), the device outputs a vibration corresponding only to the input touch signal and not the proximity signal (step S530). *Id.* at 12:4–8, 12:11–15. In either case, the device “displays a screen corresponding to the menu icon through which the touch signal has been input on the display unit” (step S535). *Id.* at 12:15–17, 12:26–28.

Figure 12(d), reproduced below, illustrates how the proximity- and touch-corresponding output signals may be combined by adding them together:

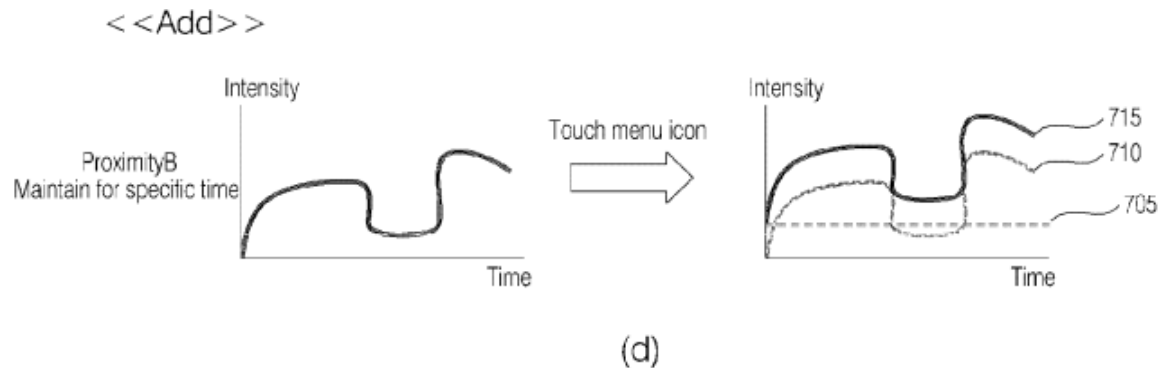


Figure 12(d) above depicts two plots of output signal intensity over time. The first plot on the left is a haptic vibrational output profile associated with an input “proximity signal [that] is maintained for a specific period of time” (i.e., the user’s finger is hovering over the menu item). Ex. 1008, 16:22–23. In the second plot on the right, if the user touches a menu item after hovering over it, proximity-associated output signal 710 is added to touch-associated output signal 705 to produce vibration 715. *Id.* at 16:22–27.

2. Ground Based on Pratt–Ku

Petitioner argues that Pratt, in view of Ku, renders claim 1 obvious. Pet. 4, 40–55. We understand Petitioner to rely on Pratt to teach all the limitations of claim 1, except limitation 1F. *See id.* 50–55. An alternative to its arguments based on Pratt alone for limitation 1F (*see supra* Section III.C.2(b)), Petitioner argues that a person of ordinary skill in the art would have had reason to “modify[] Pratt to provide a single output signal reflecting both proximity and touch” as illustrated in Ku’s Figure 7 or Figure 12. Pet. 46.

According to Petitioner, “Pratt itself does not address the problem Ku discusses: ‘distinguish[ing] between different types of touch signals and proximity signals,’” but “Pratt’s system was ready for improvement using Ku’s method.” Pet. 47 (alteration in original) (quoting Ex. 1008, 1:32–34)

(citing Ex. 1008, 1:15–17). Petitioner argues that a person of ordinary skill in the art

would have had reason to use Pratt’s device to practice Pratt’s Figure 4 in such a way that one “haptic effect”—corresponding to Ku’s Figure 12(d)—is output if Pratt detects proximity and touch signals associated with the same menu icon (per step S520 in Ku’s Figure 7) and a different “haptic effect” is output otherwise (per Ku’s step S525).

Pet. 47–48 (citing Ex. 1004 ¶¶ 210–212).

Petitioner notes that Pratt expresses a motivation to reduce latency (Pet. 47; *see* Ex. 1006 ¶¶ 4, 6, 16, 39), and argues that the proposed Pratt–Ku combination would have “yield[ed] a mobile device with Pratt’s reduced latency and Ku’s ability to distinguish input signals—quickly alerting users the moment they touch the portion of the screen above which their finger had been hovering.” Pet. 50 (citing Ex. 1004 ¶ 212). According to Petitioner, “Pratt’s system was ready for improvement using Ku’s method of ‘distinguishing input signals.’” Pet. 47 (citing Ex. 1008, 1:15–17).

In response, Patent Owner argues that Ku’s proximity and touch signals are distinct haptic effects. PO Resp. 36–50. According to Patent Owner, the “[t]he distinct haptic effects begin at different times.” *Id.* at 42 (citing Ex. 1008, 16:16–21; Ex. 2008 ¶ 104). Acknowledging that the two signals may at least partially overlap in time, Patent Owner argues that they are nevertheless “separate haptic effects that occur sequentially.” *Id.* at 46 (citing Ex. 2008 ¶ 108); *see also* PO Sur-reply 15–16. And although “the haptic effects are summed,” Patent Owner argues that the “the distinction between the two separate effects” is maintained. *Id.* at 41 (citing Ex. 1008, 16:22–27, Fig. 12(d); EX2008 ¶ 103).

Patent Owner also argues that Ku’s vibration output signals are not the “*sensor signals*” recited in limitation 1F. PO Resp. 48–49 (citing Ex. 2008 ¶ 112). The vibration output signals are, according to Patent Owner, modified from their original form as sensor signals: “by the time a subsequent touch signal is sensed and a corresponding vibration signal is generated, the previously sensed proximity signal need not longer exist.” *Id.* at 29 (citing Ex. 2008 ¶ 112).

Finally, Patent Owner argues that there would have been no motivation to modify Pratt based on Ku’s teachings because “[n]othing about Ku’s disclosure . . . relates to reducing latency,” which is the explicit concern addressed in Pratt’s use of proximity data in generating haptic effects. PO Resp. 50–51 (citing Ex. 1006 ¶ 16, 38, Fig. 4; Ex. 2008 ¶ 114); *see also* PO Sur-reply 16–17.

In its Reply, Petitioner argues that Patent Owner’s argument that Ku’s summed haptic-effect signal is actually two, distinct haptic effects depends on Patent Owner’s incorrect claim-construction proposal for the term “haptic effect.” Pet. Reply 26. Petitioner contends that the Petition relies on Pratt itself as teaching the motivation and means for reducing latency, and relies on Ku for a modification of Pratt’s system addressing Ku’s separate motivation to use proximity data for generating a haptic effect confirming that the user has touched the intended icon. *Id.* at 27; *see also* Pet. 47–49.

In its Sur-reply, Patent Owner argues that Petitioner’s proposed motivation for modifying Pratt to include Ku’s teachings amounts to “a motivation to combine all references regarding user interfaces with multiple icons,” which “would sweep in almost all art concerning electronics with touch screens.” PO Sur-reply 17. Also, according to Patent Owner, it is not

enough that Pratt is “ready for improvement” based on Ku’s teachings; Ku’s teachings must have “already been used to ‘improve similar devices in the same way.’” *Id.* at 18 (quoting *KSR*, 550 U.S. at 417).

We find Petitioner’s arguments persuasive and disagree with Patent Owner’s arguments to the contrary. Ku discloses summing two overlapping vibration signals, one “based at least in part on” data from a proximity sensor and another “based at least in part on” data from a touch sensor. Ex. 1008, Fig. 12 (items 705, 710, and 715). The summed signal 715 is the basis for generating what the user would perceive as a single haptic effect. *See* Ex. 1004 ¶ 210–212. This meets limitation 1F.

We agree with Petitioner’s argument as to why there would have been a motivation to modify Pratt to include Ku’s teachings. Petitioner’s argument is not merely that Pratt was ready for improvement; Petitioner persuasively argues that a person of ordinary skill in the art would have had reason to add Ku’s method for confirming that the user has touched the intended icon to Pratt’s system. Both Pratt and Ku already disclose using both proximity and touch data in generating a haptic effect, and based on the evidence of record, we are of the view that combining the two teachings would not have been uniquely challenging or otherwise beyond the level of ordinary skill in the art. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (“Leapfrog presents no evidence that the inclusion of a reader in [electronic children's toys] was uniquely challenging or difficult to one of ordinary skill in the art.” (citing *KSR*, 550 U.S. at 419–420))

In addition to limitation 1F, Petitioner presents arguments addressing each of the limitations in claims 1–6, 14–16, and 19, with support from the record and the testimony of Dr. Welch. *See* Pet. 50–55. Patent Owner does

not present distinct arguments for these other claims and limitations. *See* PO Resp. 36–52.

We agree with and adopt Petitioner’s uncontested analyses for the other limitations of claim 1 and each of the other claims (i.e., claims 2–6, 14–16, and 19), and credit Dr. Welch’s supporting testimony. Thus, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–6, 14–16, and 19 are unpatentable as obvious over Pratt in view of Ku.

3. *Ground Based on Ku or Ku–Jiang*

Petitioner argues that Ku renders claims 1–5, 14–16, and 19 obvious, and that Ku in view of Jiang renders claims 1–6, 14–16, and 19 obvious. Pet. 4, 56–82. For limitation 1F in both grounds, Petitioner relies on Ku’s disclosure of generating a haptic output signal (e.g., vibration signal 715 of Figure 12(d) or the vibration of step S520) corresponding to both proximity and touch input signals. Pet. 56–60, 66, 81 (citing Ex. 1004 ¶¶ 230–235, 304).

For its ground based on Ku and Jiang, Petitioner argues that there would have been motivation to modify Ku’s proximity and touch sensors by using a specific transparent electromechanical polymer (“EMP”) sensor and actuator taught in Jiang, meeting limitations 1A–1C. Pet. 77–81 (citing Ex. 1004 ¶¶ 293–303). According to Petitioner, Jiang’s EMP sensor provides the benefit of creating a localized haptic feedback “instead of vibrating the entire device,” so that power requirements are reduced and the feedback has a stronger sensation and a finer resolution.” Pet. 79 (citing Ex. 1011 ¶ 24; Ex. 1004 ¶ 298).

In its Response, Patent Owner reiterates its arguments, discussed above, that Ku only teaches outputting separate and distinct haptic effects and, thus, fails to teach limitation 1F. *See* PO Resp. 52–54 (citing Ex. 1002, 1090; Ex. 1008, 16:17–27; Ex. 2008 ¶¶ 115–117). As to the Ku–Jiang ground, Patent Owner contends that Jiang’s additional teachings do nothing to remedy this alleged deficiency in Ku. PO Resp. 54–55 (citing Ex. 1010 ¶¶ 2, 23, 35; Ex. 2008 ¶¶ 119–121).

In its Reply, Petitioner argues that neither Patent Owner nor its declarant, Dr. Akl, have contested Petitioner’s proposed motivation to modify Ku based on Jiang’s EMP-sensor teachings. Pet Reply 28.

For the first time in its Sur-reply, Patent Owner argues that Petitioner’s proposed motivation to combine Ku with Jiang is deficient because it amounts to a simple statement “that it would have been obvious to a [person of ordinary skill in the art] to combine two references on the basis that the combination would be theoretically better than the originals.” PO Sur-reply 22–23.

For the reasons discussed above, we agree with Petitioner that Ku teaches outputting a single haptic effect as recited in limitation 1F. *See supra* Section III.D.2. We also agree with Petitioner’s other arguments, which are uncontested, addressing each of the other limitations in claims 1–6, 14–16, and 19, and credit the supporting testimony of Dr. Welch. *See* Pet. 56–82.

Other than regarding limitation 1F, Patent Owner does not directly contest Petitioner’s arguments as to the motivation to combine Ku and Jiang in its Response. *See* PO Resp. 52–55. In the Scheduling Order, we cautioned Patent Owner “that any arguments not raised in the [Patent Owner Response] may be deemed waived.” Paper 14, 9; *see also In re NuVasive*,

Inc., 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that the patent owner's failure to proffer argument at trial as instructed in the scheduling order constitutes waiver). The Board routinely holds patent owners to this standard. *See, e.g., Werner Co. v. Louisville Ladder, Inc.*, IPR2019-00336, Paper 34 at 39 (PTAB Aug. 24, 2020) (Final Written Decision) (explaining that a patent owner's arguments made for the first time in a Sur-reply are waived because they were not made in the Patent Owner Response, and the petitioner relied on their absence to its detriment and was deprived of the chance to present arguments and evidence in its Reply to rebut the patent owner's assertions). We see no reason to deviate from this position in this proceeding, especially because Patent Owner does not attempt to explain why we should consider its belated arguments. *See* PO Sur-reply 22–23.

In any event, even if Patent Owner did not waive its argument addressing Petitioner's motivation to combine Ku with Jiang, we disagree with that argument. We credit Dr. Welch's testimony that a person of ordinary skill in the art would have had reason to modify Ku's proximity and touch sensors by using Jiang's specific EMP actuator because that actuator would have been expected to reduce power, provide stronger sensation, and increase the resolution. Ex. 1004 ¶¶ 297–299 (citing Ex. 1008, claim 12, Figs. 7, 12; Ex. 1010 ¶ 25, 29–30, Fig. 5; Ex. 1011 ¶¶ 24, 28, 36).

For the above reasons, we determine that Petitioner has shown that claims 1–5, 14–16, and 19 are unpatentable as obvious over Ku, and that claims 1–6, 14–16, and 19 are unpatentable as obvious over Ku in view of Jiang.

IV. CONCLUSION⁶

For the reasons above, Petitioner has shown by a preponderance of the evidence that claims 1–6, 14–16, and 19 of the '738 patent are unpatentable.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–3, 5, 6, 14, 15, 19	102(a)(1), 103	Pratt	1–3, 5, 6, 14, 15, 19	
1–6, 14–16, 19	103	Pratt, Ku	1–6, 14–16, 19	
1–5, 14–16, 19	103	Ku	1–5, 14–16, 19	
1–6, 14–16, 19	103	Ku, Jiang	1–6, 14–16, 19	
Overall Outcome			1–6, 14–16, 19	

V. ORDER

It is

ORDERED that claims 1–6, 14–16, and 19 of the '738 patent are unpatentable; and

⁶ Should Patent Owner wish to pursue amendment of claims in a reissue or reexamination proceeding after this decision, we draw 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).

FURTHER ORDERED that, because this is a final written decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2024-00582
Patent 11,175,738 B2

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