

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 WILLIAM V. SAINDON, MICHAEL R. ZECHER, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner Valve Corporation (“Valve”) 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”). Patent Owner Immersion Corporation (“Immersion”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

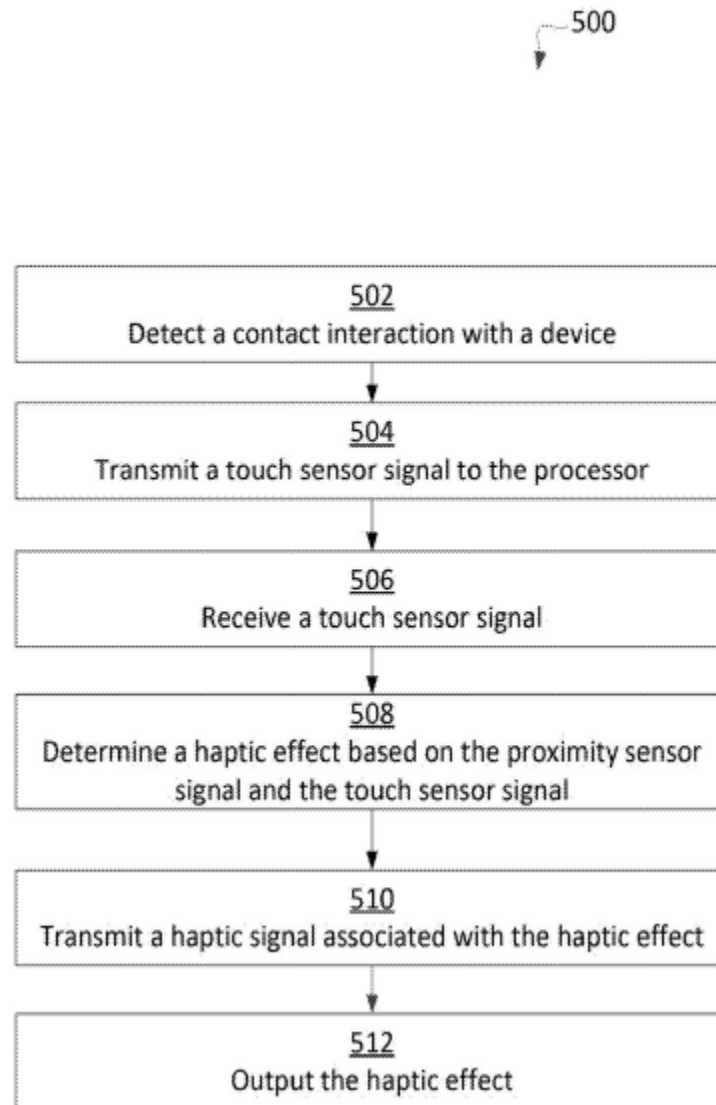
Under the authority delegated to us by the Director of the U.S. Patent and Trademark Office under 37 C.F.R. § 42.4(a), we may institute an IPR when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c). Applying that standard, we institute an IPR of all the challenged claims of the ’738 patent for the reasons explained below. This is a preliminary decision, and we will base our final written decision on the full trial record.

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 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 (Valve’s reference numbers added).

Valve 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

Valve submits a declaration by Gregory F. Welch, Ph.D. Ex. 1004; *see also* Ex. 1005 (Dr. Welch’s curriculum vitae). Immersion likewise submits a declaration by Craig Rosenberg, Ph.D. Ex. 2001; *see also* Ex. 2002 (Dr. Rosenberg’s curriculum vitae).

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 3, 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).

III. GROUNDS OF THE PETITION

For the reasons below, we determine that Valve has demonstrated a reasonable likelihood that it would prevail in showing that at least one of the challenged claims of the '738 patent is unpatentable under a ground of the Petition.

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. of Kan. City*, 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)).

Valve 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 experience or graduate-level experience with human–computer interaction.” Pet. 6 (citing Ex. 1004 ¶¶ 46–54).

Immersion 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.” Prelim. Resp. 20–21 (citing Ex. 2001 ¶ 33).

The parties agree that formal education could substitute for practical experience, and vice versa. Pet. 6, Prelim. Resp. 21.

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 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 Valve’s proposed level of skill for this Decision because it is sufficiently persuasive to meet Valve’s “reasonable likelihood” burden at institution. 35 U.S.C. § 314(a).

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.

Neither party argues that we should construe any particular claim terms explicitly. Pet. 8; Prelim. Resp. 21. We agree that, for the purpose of institution, we do not need to adopt explicit constructions for any claim terms. To the extent that the meaning of claim language is disputed, we discuss it below in the context of the prior art. *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. GROUND BASED ON PRATT, CLAIM 1

Valve argues that claims 1–3, 5, 6, 14, 15, and 19 are unpatentable under 35 U.S.C. §§ 102(a)(1) as anticipated by Pratt, or alternatively under § 103 as obvious over Pratt. Pet. 4, 8–40.

To show that a claim is anticipated under 35 U.S.C. § 102, the challenging party must demonstrate that each and every claim element, arranged as recited in the claim, is found in a single prior art reference. *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). We consider prior art references “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 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 factual considerations 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.

Considering these factors, we determine that Valve has shown a reasonable likelihood that at least one claim would have been anticipated by Pratt or obvious over Pratt, for the reasons explained below.

Because Immersion does not separately challenge Valve’s arguments on a claim-by-claim basis, we focus our preliminary analysis on claim 1.

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:

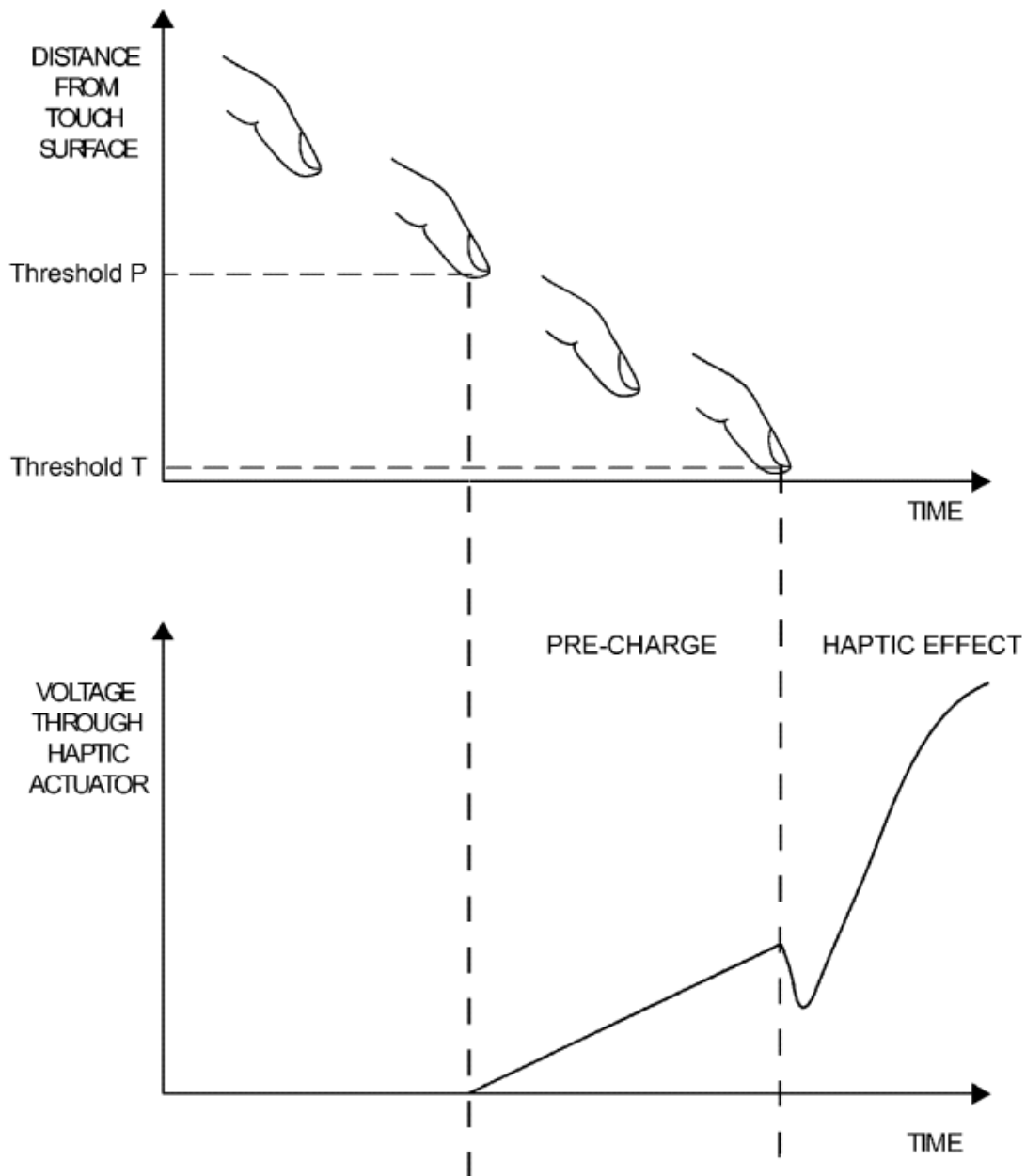


FIG. 4

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.”

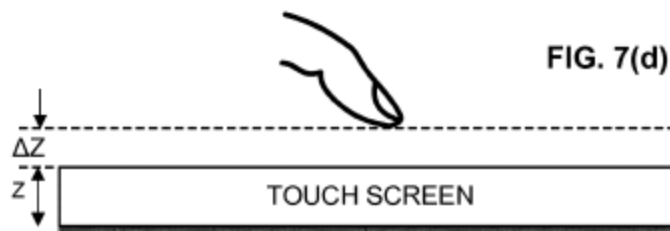
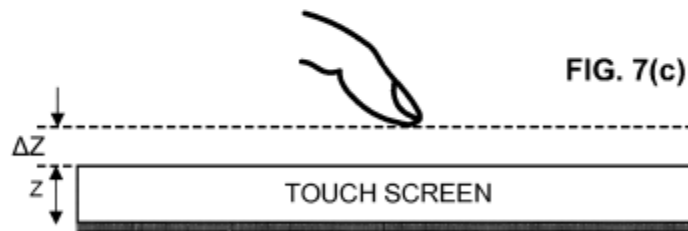
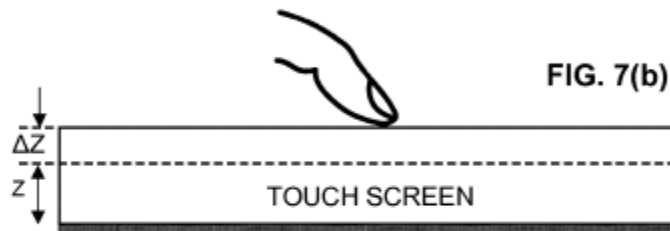
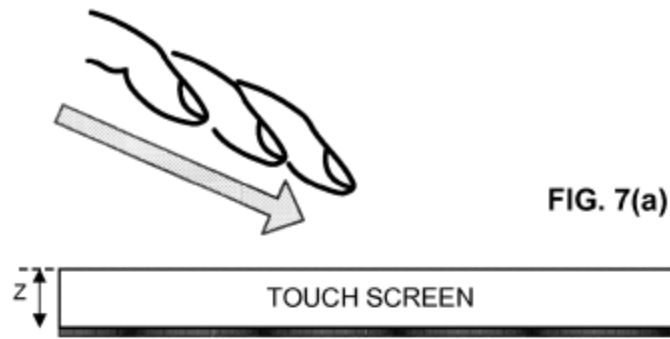
Ex. 1006 ¶ 38. As a user’s finger approaches the touch surface, the device uses the proximity sensor to calculate the rate of approach or the direction of movement to anticipate the time or location of the touch. *Id.* Also, at time t1

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 makes contact with 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. *Preamble (IPRE) 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.

Valve 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).

Immersion does not specifically address these contentions. *See* Prelim. Resp. Without determining whether or not the preamble is limiting, we find

Valve’s arguments sufficiently persuasive at this stage, for the reasons set forth in the Petition.

3. *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, Valve 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). Immersion does not contest these arguments. *See* Prelim. Resp.

We address the parties’ contested arguments for limitation 1F below.

(a) “Bubble” Effect Embodiment

For limitation 1F, Valve 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). Valve 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, Immersion characterizes Pratt’s “bubble” effect as generating two separate and distinct haptic effects that proceed sequentially,

one based on the proximity signal and one based independently on the touch signal. Prelim. Resp. 34–36 (citing Ex. 1006 ¶¶ 49–50; Ex. 2001 ¶¶ 83–89).

Immersion disagrees that Pratt’s “bubble” effect is analogous to the “pushing” confirmation haptic effect described in the ’738 patent because, according to Immersion, the context of the ’738 patent makes it clear that there is a single haptic effect, rather than two sequential haptic effects as Pratt allegedly describes. Prelim. Resp. 37 (citing Ex. 1001, 11:29–40). Immersion disagrees with Valve that Pratt’s ultimate haptic effect (after the touch) is based, in any way, on the proximity signal. *Id.* at 37–38 (citing Ex. 1006 ¶ 25; Ex. 2001 ¶ 87).

At this stage, we find Valve’s argument sufficiently 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 appear to be true even if we were to agree that the pre-charging portion of the effect could fairly be partitioned out as a separate and distinct haptic effect from the portion of the effect that occurs after the touch.

We also agree with Valve, at this stage, that Pratt’s “bubble” effect is analogous to the “pushing” effect disclosed in the ’738 patent, in which there is an additional confirmatory “pushing” part of the effect after the user touches the surface. This example comes immediately after stating that a touch-based haptic effect can either be “modified or combined” with another proximity-based haptic effect. Ex. 1001, 11:35–40. The use of the words *modified or combined*, in the alternative, suggests that a single haptic effect

may have different unmodified phases based on proximity and touch which are combined with each other and regarded as a single “haptic effect.”

To the extent that Immersion believes that our preliminary understanding of the term *haptic effect* is incorrect, we encourage Immersion to propose an explicit construction of the term in its Patent Owner Response.

(b) “Rate of Approach” Embodiment

Independent of its “bubble” effect argument, Valve 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 Valve, 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 response, Immersion contends that Valve’s argument is illogical because “the purpose of the haptic effect disclosed in this embodiment is to convey information *before* the user touches the menu icon. . . . Waiting to convey that information until after they have touched the menu icon makes no sense.” Prelim. Resp. 41 (citing Ex. 2001 ¶ 91). Immersion also characterizes Valve’s alternative argument, based on obviousness, as impermissible hindsight bias because it allegedly relies solely on expert testimony and not from Pratt itself. *Id.* at 42.

At this stage, we find sufficiently persuasive Valve’s argument that Pratt discloses, or at least makes obvious, that its ultimate haptic effect, which occurs after the touch, may be different depending on whether the approach to the surface was fast or slow. *See* 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.”); ¶¶ 39–40 (“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”); *see also id.*, claims 16 and 19 (claiming a user interface controller that receives “sensor data” including proximity data such as “a rate of approach” (claim 17) as well as “a user touch on the touch screen” (claim 19), and “a processor to calculate user interaction properties from the sensor data, to match a haptic profile from [a] memory to the user interaction properties, and to generate a haptic command associated with the haptic profile”). Thus, we disagree at this stage with Immersion’s contention that the purpose, or sole purpose, of Pratt’s rate-of-approach information is to convey information to the user prior to the touch.

We also disagree with Immersion that Valve’s alternative rationale for modifying Pratt is based solely on expert testimony. Dr. Welch’s testimony on this particular issue relies, at least in part, on paragraph 39 of Pratt. *See* Ex. 1004 ¶ 150 (citing Ex. 1006 ¶ 39 (expressing a motivation to decrease latency by allowing the device to “generate the haptic effect faster upon

touch screen contact because of pre-charging the haptic generating components’’)).

(c) Pratt’s General Disclosures

In addition to Pratt’s two specific embodiments discussed above, Valve points to general statements in Pratt (1) that 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) that “[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).

Immersion does not appear to address Pratt’s first general statement, but with regard to the second one, Immersion contends it is in the context of an embodiment, associated with Figure 5, in which the proximity and touch-based haptic effects proceed sequentially. Prelim. Resp. 38–40 (quoting Ex. 1006 ¶ 42) (citing Ex. 1006 ¶¶ 42–45, 49–50, Fig. 5; Ex. 2001 ¶¶ 88–89).

We agree with Immersion that Pratt’s second general statement is in the context of Figure 5. However, the statement is consistent with Pratt’s first general statement, which appears to be applicable to Pratt’s entire disclosure, including the “bubble” effect and “rate of approach” embodiments. In describing the processor, apparently used in all embodiments, Pratt discloses that the processor may generate a “haptic command” associated with a stored haptic profile matching “the calculated proximity, touch, and/or force event data.” Ex. 1006 ¶ 24. We are sufficiently persuaded, at this stage, that a person of ordinary skill in the art would have

understood this to disclose that a single stored haptic profile can be selected based on both proximity and touch signals.

4. *Conclusion as to claim 1*

For the above reasons, we determine that Valve has shown, sufficiently at this stage, that Pratt discloses all the limitations of claim 1 in a manner identical to that recited in the claim, or at least 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 Valve is reasonably likely to prevail in showing that claim 1 is unpatentable under §§ 102 or 103 based on Pratt, and we institute an IPR on all claims and all grounds raised in the Petition. *See* 37 C.F.R. § 42.108(a).

D. OTHER CLAIMS AND OTHER GROUNDS

Because Valve has shown a reasonable likelihood of prevailing with respect to claim 1 on the ground based on Pratt alone as discussed above, we need not address the other challenged claims or the other grounds of the Petition in detail. However, for the parties' benefit we provide our preliminary assessment of the disputed issues relating to the other grounds.

Because each of the other grounds involves Ku or a combination with Ku, we begin with an overview of Ku.

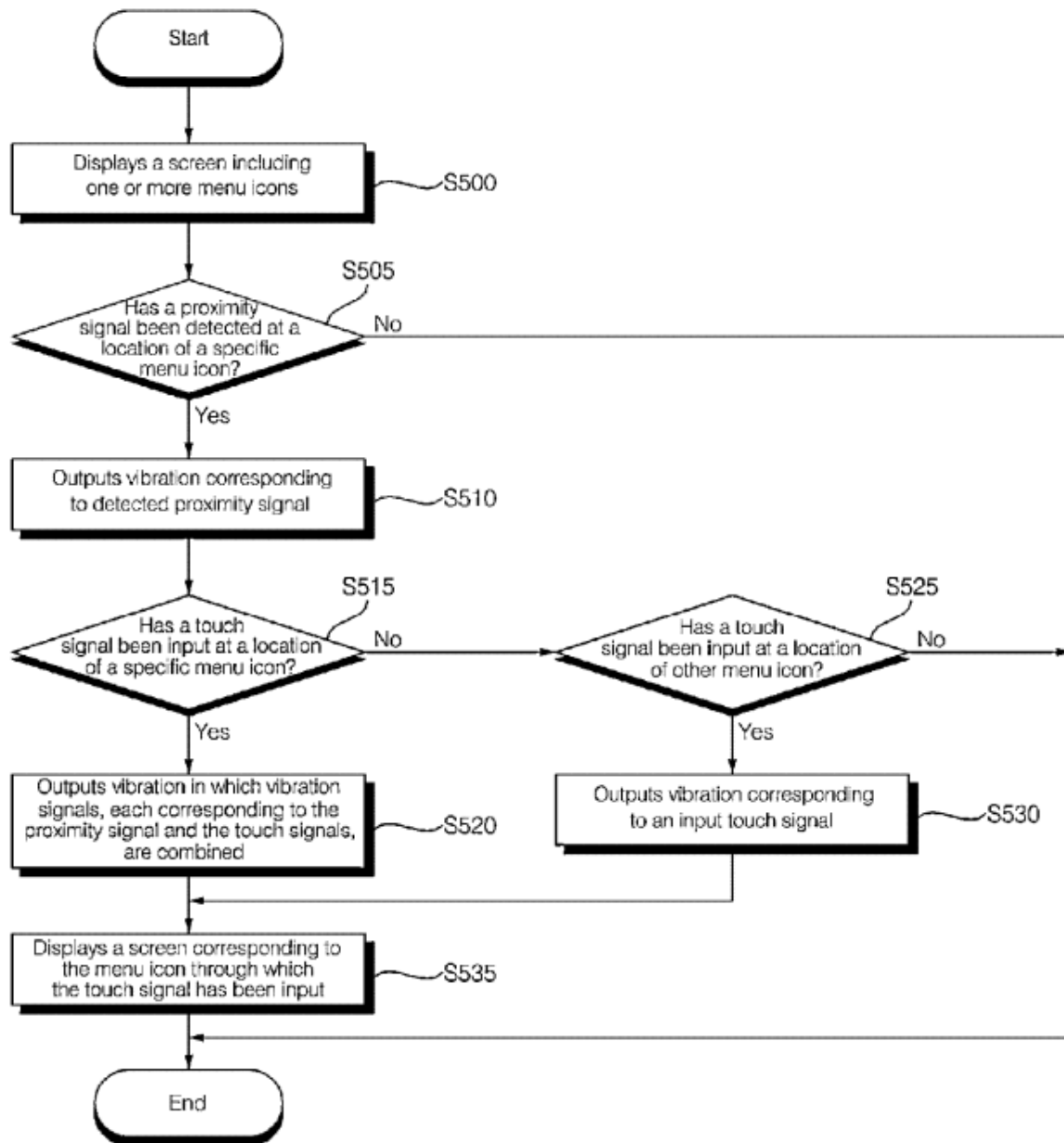
1. *Overview of Ku*

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 items” (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. “The 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 (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 one way in which proximity- and touch-corresponding output signals may be combined.

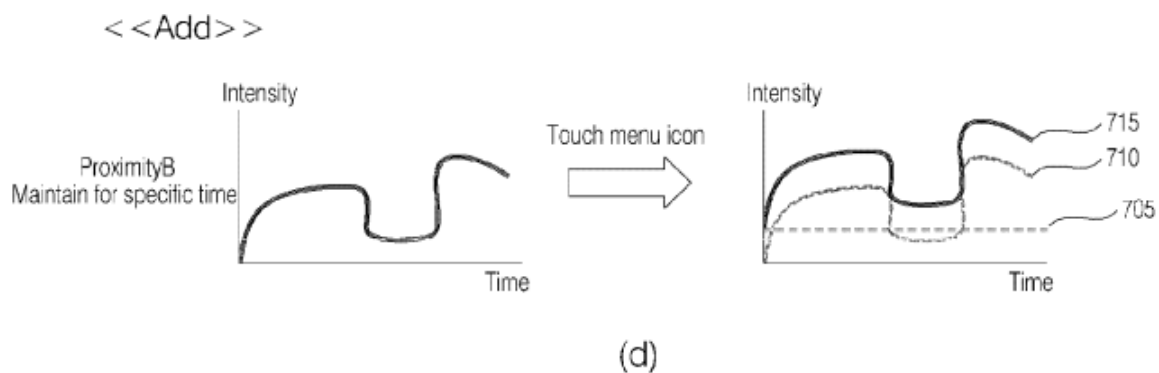


Figure 12(d) above depicts two plots of output signal intensity over time. The first plot is a haptic vibrational output profile associated with an input “proximity signal [that] is maintained for a specific period of time” (i.e., the user’s finger is hovering over the menu item). Ex. 1008, 16:22–23. 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*

Valve argues that Pratt in view of Ku renders claim 1 obvious. Pet. 4, 40–55. Alternatively to its arguments based on Pratt alone for limitation 1F, Valve 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 Valve, “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). Valve 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).

Valve notes that Pratt expresses a motivation to reduce latency (Pet. 47; *see* Ex. 1006 ¶¶ 4, 6, 16, 39), and argues that the 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).

In response, Immersion argues that in Ku, when a user touches the same menu item they have been hovering over, “the proximity haptic effect is generated *first*, and the touch haptic effect is generated *second*. When the two haptic effects overlap in time, the haptic effects are summed, which maintains the distinction between the separate haptic effects.” Prelim. Resp. 48 (citing Ex. 1008, 16:22–27, Fig. 12(d); Ex. 2001 ¶ 97). According to Immersion, “[t]he distinct haptic effects begin at different times. They can be summed . . . but they are nevertheless separate haptic effects as shown in figure 12.” *Id.* at 49 (citing Ex. 1008, 16:16–21; Ex. 2001 ¶ 98).

At this stage, we disagree with Immersion’s argument. It appears that Immersion’s argument relies on treating *only* the proximity-based component of post-touch vibration step S520 (which appears to correspond to combined vibration output 715 of Figure 12) as a continuation of pre-touch vibration step S510. We find this division arbitrary and insufficiently supported by any evidence on the preliminary record.

In any event, Immersion concedes that for at least some period of time (i.e., the combined output of step S510 and the overlapping time period in Figure 12(d)), Ku outputs a combined haptic output signal associated with both proximity and touch input signals. *See* Prelim. Resp. 48 (“When the two haptic effects overlap in time, the haptic effects are summed . . .”). In

the combined plot in Figure 12(d), proximity-associated profile 710 and touch-associated profile 705 are superimposed and they appear to start at the same time. Ex. 1008, Fig. 12(d).

Thus, based on the preliminary evidence, it appears that a person of ordinary skill in the art would have interpreted combined output signal 715 of Figure 12(d) and the output signal of step S520 to correspond to a single haptic effect as recited in claim 1.

Immersion also takes issue with Valve's obviousness-based argument for modifying Pratt based on Ku's teachings, but Immersion's argument assumes that "Ku discloses two separate haptic effects, each based on individual sensor signals." Prelim. Resp. 50 (citing Ex. 2001 ¶ 100); *see id.* at 51–56 (citing Ex. 2001 ¶¶ 97, 104–110). As discussed above, we determine, at this stage, that the preliminary evidence does not support this assumption.

Finally, Immersion contends that there would have been no motivation to combine Pratt and Ku because "Pratt is directed to the goal of reducing latency between the time a user touches the screen and the time they experience the haptic effect," and Ku is directed to "distinguishing between different types of touch signals and proximity signals," but "[n]othing about Ku's disclosure (even accepting [Valve's] characterization of Ku) relates to reducing latency." Prelim. Resp. 56–58 (citing Ex. 2001 ¶¶ 101–102). Nor, according to Immersion, has Valve "identif[ied] any deficiency in Pratt that would lead a [person of ordinary skill in the art] to look outside the reference to combine with other disclosures." *Id.* at 58.

We disagree with Immersion that the alleged motivation to combine Pratt with Ku must come solely from Ku's disclosure. *See KSR*, 550 U.S. at

420 (“[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.”); *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380 (Fed. Cir. 2023) (“‘[U]niversal’ motivations known in a particular field to improve technology provide ‘a motivation to combine prior art references even absent any hint of suggestion in the references themselves.’”). We also disagree with Immersion that Valve is required to show a deficiency in Pratt that would suggest a combination with Ku. *See Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1002–03 (Fed. Cir. 2016) (A patent challenger “does not need to show that there was a known problem with the prior art system in order to articulate the required rational underpinning for the proposed combination.”).

3. *Ground Based on Ku or Ku–Jiang*

Valve argues that Ku, or alternatively Ku in view of Jiang, renders claim 1 obvious. Pet. 4, 56–82. For limitation 1F in both grounds, Valve 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, Valve argues that there would have been motivation to modify Ku’s proximity and touch sensors by using a specific transparent electromechanical polymer (“EMP”) sensor taught in Jiang, meeting limitations 1A–1C. Pet. 77–81 (citing Ex. 1004 ¶¶ 293–303).

In response, Immersion reiterates its argument, discussed above, that Ku only teaches outputting separate and distinct haptic effects and, thus, fails to teach limitation 1F. *See* Prelim. Resp. 58–60. As to the Ku–Jiang

ground, Immersion contends that Jiang’s additional teachings do nothing to remedy this alleged deficiency in Ku. *Id.* at 60–61 (citing Ex. 2001 ¶¶ 111–113).

For the reasons we discuss above, we find Valve’s argument sufficiently persuasive, at this stage, that Ku discloses limitation 1F. *See supra* Section III.D.2.

IV. DISCRETIONARY DENIAL

A. DENIAL UNDER 35 U.S.C. § 314(a)

Immersion argues that the Petition should be denied under 35 U.S.C. § 314(a) because there is a district court case involving the ’738 patent. Prelim. Resp. 61–67 (discussing *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”)).

However, the district court litigation has been stayed. Ex. 2004, 8. In *Valve Corp. v. Immersion Corp.*, IPR2024-00478, Paper 11 at 9–18 (PTAB July 25, 2024), the Board considered the factors set forth in *Fintiv* and addressed essentially the same arguments and issues raised by Immersion here. We adopt and incorporate the reasoning in that case as our own. In short, the stay obviates concerns over efficiency and duplication of efforts raised in *Fintiv*. *See, e.g., Fintiv* at 6 (“A district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.”). Therefore, we do not discretionarily deny the Petition under § 314(a).

B. DENIAL UNDER 35 U.S.C. § 325(d)

Section 325(d) provides that, “[i]n determining whether to institute or order [an IPR], the Director^[4] may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the [U.S. Patent and Trademark] Office.” In evaluating this question, we use a two-part framework, first determining “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). If either condition of the first part of the framework is satisfied, then we determine, second, “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Id.*

Valve argues that discretionary denial under § 325(d) is inappropriate because the Office did not consider Pratt during prosecution, and although the applicant cited the published application leading to Ku in an information disclosure statement, the Examiner never applied Ku to reject a claim. Pet. 84–85. Contrasting Ku with Choe,⁵ a reference that was the subject of an Examiner rejection and an appeal to the Board (Ex. 1002, 1084–92), Valve argues that Choe describes outputting haptic effects sequentially, whereas Ku describes summing proximity and touch signals for a combined haptic

⁴ The Director has delegated this discretion to us under 37 C.F.R. § 42.4(a).

⁵ Choe et al., US 2010/0004033 A1, published Jan. 7, 2010 (Ex. 1015).

effect. Pet. 85. According to Valve, the Examiner’s “repeated citation of Choe rather than Ku’s published application indicates the Examiner overlooked Ku’s teachings,” whereas, by contrast, “during prosecution of the ’738 patent’s European counterpart, analogous claims were repeatedly rejected over Ku’s European counterpart—leading applicants to abandon the application.” Pet. 85–86; *see also* Pet. 7–8 (citing Ex. 1003, 33–35, 95–96, 111–115, 147–168; Ex. 1004 ¶¶ 66–69).

Immersion argues that the Examiner considered Ku’s teachings as part of the information disclosure statement, and that Valve has failed to show any error in the Examiner’s consideration. Prelim. Resp. 24–26. Immersion also argues that Ku is cumulative of Choe because “both Choe and Ku disclose two separate vibration signals—each based on a proximity sensor signal and a touch sensor signal, respectively—that arguably can be combined into a third vibration signal.” *Id.* at 26–27. Thus, Immersion disagrees with Valve’s characterization that Ku describes a single combined haptic effect. *Id.* at 27–29 (citing Ex. 1002, 996, 1006, 1090–91; Ex. 2001 ¶¶ 104–107).

First, we note that Immersion does not argue that the Office considered Pratt or anything cumulative to Pratt. Thus, the first part of the *Advanced Bionics* framework is not satisfied on a ground that we find sufficiently persuasive to institute trial. *See supra* Section III.C.

Moreover, as we discuss above, we disagree with Immersion, at this stage, that Ku fails to disclose generating a single haptic output signal based on a proximity sensor signal and a touch sensor signal. *See supra* Section III.D. This is in contrast to Choe which, according to the prior Board panel that heard the appeal during prosecution, merely discloses generating two

separate and distinct haptic effects from each sensor sequentially. *See* Ex. 1002, 1089–1091.⁶

Thus, we determine that, to the extent the Examiner considered the Ku application, the Office overlooked Ku’s teachings which disclose generating a single combined haptic effect from proximity and touch sensor signals. Accordingly, we determine that the second part of the *Advanced Bionics* framework is not satisfied as to any ground in the Petition.

For the above reasons, we decline to deny institution discretionarily under § 325(d).

V. CONCLUSION

For the reasons set forth above, Valve has shown that there is a reasonable likelihood it would prevail with respect to at least one of the claims challenged in the Petition, and we institute trial on all asserted grounds and all challenged claims. *See* 37 C.F.R. § 42.108(a).

VI. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an IPR of claims 1–6, 14–16, and 19 of the ’738 patent is instituted with respect to all the grounds set forth in the Petition; and

⁶ Although the panel on appeal noted Choe’s general teaching in one embodiment about “synthesizing different vibration effects,” the Board held that this general disclosure was not sufficient to “disclose that the specific [proximity and touch] signals . . . described by Choe in a separate embodiment are combined.” Ex. 1002, 1091.

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FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, IPR of the '738 patent commences on the entry date of this Order, and the Board hereby gives notice of the institution of a trial.

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