

Petition for *Inter Partes* Review of
U.S. Patent No. 8,469,806 B2

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.,
Petitioner

v.

IMMERSION CORPORATION,
Patent Owner

Case IPR2023-00942
U.S. Patent No. 8,469,806 B2
Issue Date: June 25, 2013

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,469,806 B2**

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List of Exhibits

Exhibit No.	Description of Document
1001	U.S. Patent No. 8,469,806 B2 to Danny A. Grant, Robert W. Heubel, David M. Birnbaum, and Erin B. Ramsay (filed July 21, 2010 and issued June 25, 2013) (“ ’806 ” or “ ’806 patent ”)
1002	Declaration of Jeremy Cooperstock, Ph.D. (“ Cooperstock ”)
1003	U.S. Patent Application Publication No. 2008/0024459 A1 to Ivan Poupyrev et al. (filed July 31, 2007 and published January 31, 2008) (“ Poupyrev ”)
1004	U.S. Patent Application Publication No. 2008/0064499 A1 to Danny A. Grant et al. (filed September 13, 2007 and published March 13, 2008) (“ Grant ’499 ”)
1005	Excerpts from <i>Microsoft Computer Dictionary</i> (5th ed. 2002)
1006	Joint Claim Construction Statement, filed in <i>Immersion Corp. v. Meta Platforms, Inc.</i> , No. 6:22-cv-00541-ADA (W.D. Tex.) (dated Jan. 21, 2023)
1007	Prosecution history of the ’806 patent
1008	Affidavit of Service, ECF No. 6, dated June, 2, 2002, filed in <i>Immersion Corp. v. Meta Platforms, Inc.</i> , No. 6:22-cv-00541-ADA (W.D. Tex.)
1009	EP 2457141 B1 to Danny Grant et al. (filed July 21, 2010, issued May 6, 2020) (European counterpart to the ’806 patent)
1010	Prosecution history of EP 2457141 B1
1011	Print out of https://new.epo.org/en/legal/epc/2016/r43.html

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I. MANDATORY NOTICES UNDER §42.8(A)(1)

A. Real Party-In-Interest Under §42.8(b)(1)

Meta Platforms, Inc. is the real party-in-interest to this IPR petition.

B. Related Matters Under §42.8(b)(2)

The '806 patent is the subject of the following pending litigation involving
Petitioner: *Immersion Corp. v. Meta Platforms, Inc.*, No. 6:22-cv-00541-ADA
(W.D. Tex.). Petitioner was served with the Complaint in that action on May 27,
2022. (EX1008, p.001.)

C. Lead and Back-Up Counsel under §42.8(b)(3)

Petitioner provides the following designation of counsel.

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D. Service Information

This Petition is being served by Federal Express to the attorneys of record for the '806 patent, 34300 – Immersion / Kilpatrick Townsend and Stockton, Mailstop: IP Docketing – 22, 1100 Peachtree Street, Suite 2800, Atlanta, GA 30309. This Petition is also being served on litigation counsel identified in the Certificate of Service. Petitioner consents to electronic service at the addresses provided above for lead and back-up counsel.

E. Power of Attorney

Filed concurrently per 37 C.F.R. § 42.10(b).

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II. FEE PAYMENT

Petitioner requests review of three claims, with a \$41,500 payment.

III. REQUIREMENTS UNDER §§ 42.104 AND 42.108 AND CONSIDERATIONS UNDER §§ 314(A) AND 325(D)

A. Standing

Petitioner certifies that the '806 patent is available for IPR and that Petitioner is not barred or otherwise estopped.

B. Identification of Challenge

Petitioner requests institution of IPR based on the following grounds:

Ground	Claims	Basis under §103
1	11, 12, 15	Poupyrev (EX1003)
2	11, 12, 15	Grant '499 (EX1004)

Submitted herewith is a Declaration of Jeremy Cooperstock, Ph.D. (EX1002) (“Cooperstock”), a qualified technical expert. (Cooperstock, ¶¶1-7, Ex. A.)

C. §§314(a) and 325(d)

Petitioner respectfully submits that no basis exists under either §314(a) or §325(d) for discretionary denial of this Petition. Petitioner reserves its right to respond to any discretionary denial arguments later presented by Patent Owner.

§ 314(a): With respect to §314(a), Petitioner has not previously filed an IPR petition against the '806 patent, and is unaware of any other prior IPR petition filed

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against the '806 patent by any party. In the pending litigation, the district court has continued the claim construction hearing several times, and as of the filing of this Petition, no claim construction or other substantive rulings have issued. A trial date has been set for February 20, 2024, but Petitioner has filed a motion to transfer the case to the Northern District of California (which remains pending as of the filing of this Petition). In the event of IPR institution, moreover, Petitioner intends to file a motion to stay the litigation pending the outcome of the IPR. In order to address any concerns regarding duplication of efforts, Petitioner hereby provides a *Sotera* stipulation that, in the event of IPR institution, Petitioner will not pursue in the district court any grounds of invalidity against the challenged claims that were raised or reasonably could have been raised in IPR.

§ 325(d): The Board assesses §325(d) issues under the two-part *Advanced Bionics* framework: (1) whether the same or substantially the same art was previously presented to the Office and if so (2) whether Petitioner has demonstrated that the Examiner erred in a manner material to the patentability of challenged claims. Part (1) does not apply to **Grant '499** (EX1004), relied upon in **Ground 2**, because it was not considered during prosecution of the '806 patent.

As to parts (1) and (2), **Poupyrev** (EX1003) was cited during prosecution but was not the basis of any Office Action or otherwise substantively discussed. As

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demonstrated below, the Examiner materially erred in allowing the claims of the '806 patent to issue over Poupyrev.

The prosecution of the '806 patent was largely uneventful. The patent application was filed on July 21, 2010 with a first Office Action issuing on June 18, 2012. (EX1007, pp.00115-00119.) In that Office Action, the Examiner allowed claims 1-10 and 21-30 and rejected claims 11-20, 31-40 based on 35 U.S.C. § 101 for claiming non-eligible subject matter. (EX1007, pp.00117-00118.) The Examiner did not enter any rejections based on prior art.

The applicants responded to the § 101 rejection by making minor amendments independent claims 11 and 31 to “further recite physical components of a machine tied to the recited methods” (EX1007, p.00131), such as “a haptic device” and “one or more physical processors” (EX1007, pp.00123-00124, 00128). On December 11, 2012, the Examiner issued a Notice of Allowance as to all claims. (EX1007, pp.00136-00142.)

The first mention of Poupyrev occurred on January 31, 2013 – after the Examiner had issued a Notice of Allowance – when the applicants submitted an IDS identifying Poupyrev among other references. (EX1007, pp.00152-00153.) Applicants also submitted, at that time, an International Search Report for a foreign counterpart application to the '806 patent. (EX1007, pp.00156-00159.) That

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International Search Report, dated January 12, 2011, identified Poupyrev and other references that were listed on the applicants' IDS. (*Id.*) The applicants also included a Preliminary Report on Patentability including a written opinion from the European Patent Office (EPO), dated February 2, 2012, in which the EPO rejected the foreign counterpart claims based on Poupyrev for lack of novelty and an inventive step. (EX1007, pp.00162-00169.) The EPO explained that, with respect to the independent claims (which were similar to the challenged claims here), Poupyrev (referred to as "D1") disclosed each limitation including the key "**control gesture**" limitation. (EX1007, pp.00166-00169.) The EPO's analysis was based on many of the same teachings from Poupyrev cited in **Ground 1** below.

It is unclear why the applicants waited until January 31, 2013, after the Notice of Allowance and more than two years after receiving the International Search Report identifying Poupyrev, to bring Poupyrev and the EPO's analysis to the Examiner's attention. Nevertheless, Petitioner respectfully submits that the Examiner materially erred in allowing the challenged claims to issue in view of Poupyrev. Despite the belated nature of the applicants' disclosure, Petitioner respectfully submits that the Examiner should have appreciated the relevance of Poupyrev (as further enhanced by the EPO's analysis), withdrawn the Notice of Allowance, and issued a further Office Action rejecting the challenged claims. As

demonstrated for **Ground 1** below, Poupyrev provides a compelling ground of unpatentability as to all challenged claims.

This is further underscored by later developments involving the foreign counterpart to the '806 patent. The EPO eventually issued a patent based on the foreign counterpart to the '806 patent on May 6, 2020, but only after Patent Owner amended its claims to recite additional limitations not recited in its original claims – and not recited in any of the claims of the '806 patent. More specifically, system claim 1 was amended in the EPO to conclude, “the system being characterised in that the one or more sensors are configured to generate the output signals by monitoring motion of the user in space.” (EX1009, p.0017, 31:57-32:2.)¹ Method claim 6 was similarly amended to conclude, “the method being characterised in that the control gesture comprises a motion of the user in space.” (EX1009, pp.0017-0018, 33:7-9.) Under the EPO rules, the “characterised in that” phrase identifies the technical features for which protection is sought and indicates that earlier-recited features are in the prior art. (See EX1011 (EPC 43(1)(a)-(b), available at <<https://new.epo.org/en/legal/epc/2016/r43.html>>)). Patent Owner thus appears to

¹ Except as otherwise noted, all underlining and other emphasis added to quotations was added by Petitioner for emphasis.

have acknowledged that the other portions of its European counterpart claims, which contain limitations similar to the challenged claims, were in the prior art.

IV. OVERVIEW OF THE '806 PATENT

A. Level of Ordinary Skill in the Art

A person of ordinary skill in the art would have possessed 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, including implementation of computer-based systems and software for providing haptic feedback effects to a user. (Cooperstock, ¶¶12-13.) A person could also have qualified as an ordinarily skilled artisan with more formal education and less practical or industry experience, or vice versa. (*Id.*)

B. Specification Overview

The '806 patent states that it “relates to a system and method of providing haptic stimulation to a user during performance of a complex control gesture, and/or during the control of virtual equipment.” ('806, 1:25-31.) The “Background of the Invention” acknowledges the existence of systems that provide “haptic stimulation” to users, including in the context of games, virtual worlds, and real world control systems. ('806, 1:25-34.) The patent also acknowledges that “[c]onventional game and/or virtual world systems that enable a user to control virtual equipment are known.” ('806, 1:38-39.) But the patent complains that the “control and feedback

schemes for interacting with virtual equipment in these conventional systems tend to be limited, and to not correlate strongly with real world control and/or feedback of corresponding real world equipment.” (’806, 1:38-43.)

The ’806 patent describes “a system configured to provide haptic stimulation to a user of a game.” (’806, 1:51-52.) The system may include “a user interface, an actuator, and one or more processors configured to execute computer program modules.” (’806, 1:53-55.) The system may also include a “gesture module” configured to “monitor performance of a control gesture by the user based on the output signals of the user interface,” where the “control gesture is a gesture associated with a command input to the game, and includes an initial portion, a first intermediate portion, and an ending portion.” (’806, 1:58-65.) The patent also purports to describe a “method” of providing haptic stimulation to a user that includes “monitoring performance of a control gesture by a user.” (’806, 2:10-24.)

V. CLAIM CONSTRUCTION

No claim construction rulings have issued in the pending litigation. Claim constructions have been proposed by Petitioner and/or Patent Owner for the term “**control gesture**.” (EX1006, pp.001-002.) Petitioner does not believe any term requires express construction at this time because, as shown below, the claims are obvious even if the Board applied the constructions proposed by either party in the

pending litigation, or any other reasonable construction. Nevertheless, Petitioner reserves its right to respond in the event of any new claim construction arguments Patent Owner may make in these proceedings.

VI. THE CHALLENGED CLAIMS ARE UNPATENTABLE.

A. Overview of the Grounds of Unpatentability

The concept of a “gesture” is well-known in the field of human-computer interaction (HCI), and generally refers to a physical action taken by a user with respect to a computer that provides an input to the computer. (Cooperstock, ¶36.) A gesture can range from a simple interaction such as tapping and pressing on a touch-sensitive display, to a more complex interaction such as dragging an item from one location to another. A gesture widely-known by July 2009 would have been a “swipe” gesture in which a mobile phone user touches and slides their finger across a touch-sensitive display to perform an action. (*Id.*)

The '806 patent attempts to lay claim to well-known techniques of producing two or more haptic effects (such as vibrations) during performance of what the patent calls a “**control gesture**.” But these techniques are disclosed and rendered obvious by the prior art. Petitioner has presented two separate and independent grounds for showing that the challenged claims are unpatentable.

Ground 1 relies on **Poupyrev** (EX1003), which discloses techniques for generating haptic effects in response to user actions, such as pressing and holding

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down on a graphical user interface (GUI) object (*e.g.* button) on a touch-screen display device. (Cooperstock, ¶¶46, 61, 67.) In one embodiment, Poupyrev discloses a control gesture in which the user makes contact with a GUI object and increases pressure on the object in order to activate it, with three different haptic stimulations provided to the user when performing this gesture. (Poupyrev, ¶0119, Fig. 11; Cooperstock, ¶¶68-70.) Poupyrev is a strong reference that discloses and renders obvious all limitations of the challenged claims. In fact, as noted in **Part III.C** above, the European Patent Office cited Poupyrev to reject similar claims in a foreign counterpart application to the '806 patent. (EX1007, pp.00162-00169.)

Ground 2 provides a separate and independent basis for unpatentability based on **Grant '499** (EX1004). Grant '499 names the same lead inventor as the '806 patent (Danny Grant), and both Grant '499 and the '806 patent originated from Patent Owner. For consistency and clarity, therefore, Petitioner will refer to the published Grant patent application relied upon in **Ground 2** (EX1004) as "Grant '499." Grant '499 comes from a patent family unrelated to the '806 patent and was not cited or referenced in the written description of the '806 patent. And despite its clear relevance to the challenged claims (as demonstrated below), Patent Owner never cited Grant '499 to the Examiner during prosecution of the '806 patent.

Grant '499 discloses techniques for providing haptic effects in the context of

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computer-based casino games, such as poker. (Cooperstock, ¶¶55-56; Grant '499, *e.g.*, Fig. 2, ¶¶0019, 0062-0064.) Grant '499 discloses a control gesture in which the user can discard a virtual playing card by selecting and dragging the card to move it towards the edge of the screen, resulting in at least three different haptic stimulations being provided to the user during this operation. (Cooperstock, ¶¶56-57, 95-97; Grant '499, *e.g.*, ¶0064.) Grant '499, like Poupyrev, is also a strong prior art reference that discloses and renders obvious all limitations in the challenged claims.

Poupyrev and Grant '499 are also both analogous references in the same field as the '806 patent, and would have been reasonably pertinent to a number of problems facing the '806 patent inventors, including how to determine when a user is performing a control gesture, and how to provide haptic stimulations corresponding to specific portions of the control gesture. (Cooperstock, ¶¶45, 53.) The teachings of both Poupyrev and Grant '499 involve known techniques for processing user input and providing haptic stimulation that could have been implemented using conventional techniques, with at least a reasonable expectation of success. (*Id.*) Poupyrev and Grant '499 qualify as prior art to the '806 patent under at least 35 U.S.C. § 102(b) (pre-AIA) because they are patent applications published more than one year before the filing date of the '806 patent.

B. Ground 1: Claims 11, 12, and 15 Are Obvious Over Poupyrev.

1. Independent Claim 11

The preamble recites “[a] **computer-implemented method of providing haptic stimulation to a user of a system, the method being implemented in the system which includes a haptic device and one or more physical processors configured to execute computer program modules, the method comprising....**”

Even assuming the preamble of claim 11 is limiting, it is disclosed by and rendered obvious over Poupyrev.

Poupyrev discloses a method of providing haptic stimulation to a user. The “**haptic stimulation**” in Poupyrev takes the form of tactile feedback provided to the user through a touch screen display. Although Poupyrev sometimes uses the word “tactile” when referring to haptic stimulations, Poupyrev makes clear that it treats “tactile” and “haptic” as synonyms. (Poupyrev, *e.g.*, ¶0050 (“It should be noted, in this specification, that the word ‘tactile’ and ‘haptic’ indicate the same sensory effect and are used interchangeably.”).) As explained in more detail below, the haptic stimulation in Poupyrev is generated as a result of computer program (software) modules executed by a processor. (Cooperstock, ¶¶62-63.)

Figure 1 shows an exemplary apparatus 1 showing a system for implementing the techniques disclosed in Poupyrev:

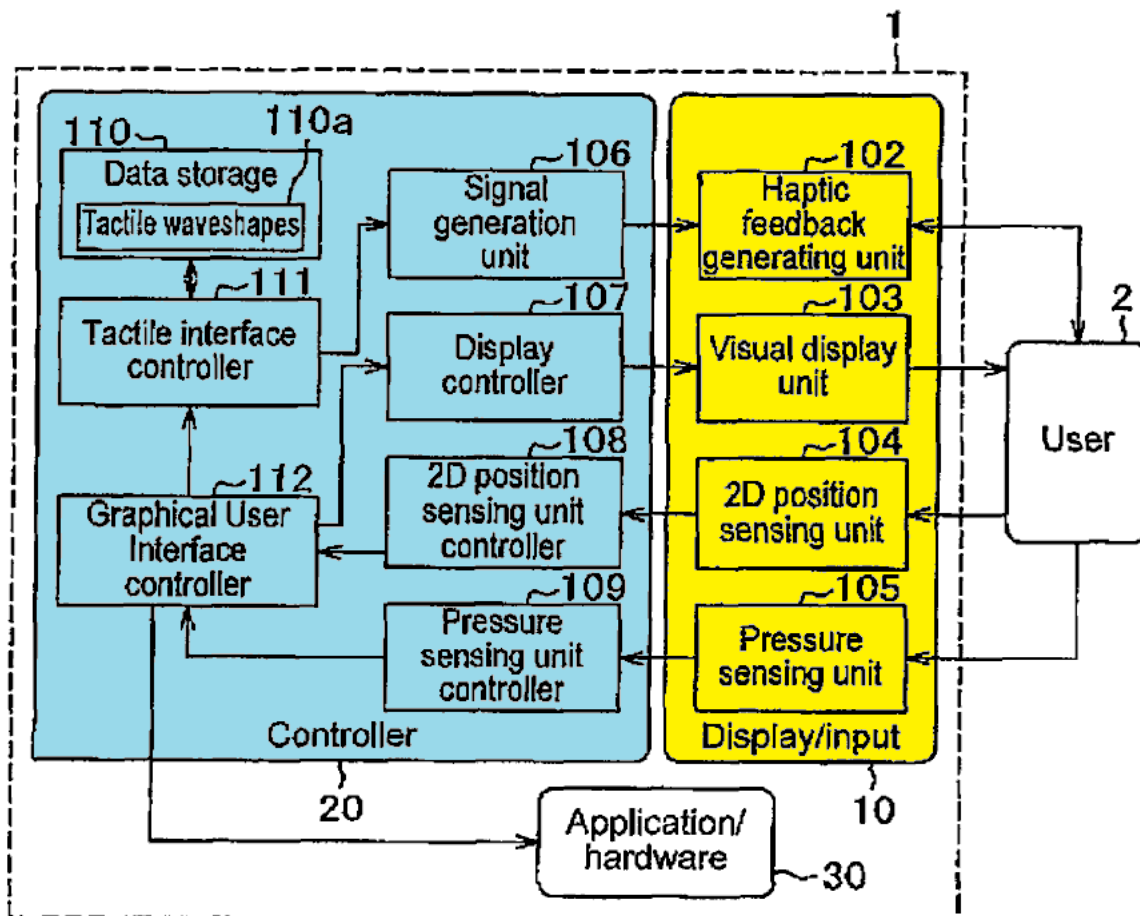


Figure 1

(Poupyrev, Fig. 1 (highlighting added), ¶0048.) Apparatus 1 shown above contains two key portions, **display/input section 10** and **controller section 20**.

Display/input section 10 shown in Figure 1 “displays on a touch screen thereof images of buttons, keys, switches or any other Graphic User Interface (GUI) objects to prompt a user 2 to interact with the apparatus 1.” (Poupyrev, ¶0049.) “The display/input section 10 further detects a touch position of a user’s finger or a pointing device on the screen and pressure applied when the finger or pointing device

touches the screen. The display/input section 10 further provides different types of tactile feedback in response to the user's input operation.” (Poupyrev, ¶0049; *see also id.*, ¶0076 (“It is desirable to provide different levels of the tactile feedback with a GUI object depending on the pressure applied on the GUI object.”).) The “**haptic stimulation**” in Poupyrev thus takes the form of tactile feedback provided to the user in response to interacting with a GUI object. (Cooperstock, ¶61.) Petitioner will provide more detail about the haptic stimulation provided to the user in discussing the claim limitations below.

Poupyrev also discloses and renders obvious that the method of providing haptic stimulation to a user is “**computer-implemented**” using a system “**which includes a haptic device and one or more physical processors configured to execute computer program modules.**” First, addressing the recitation that the system is “**computer-implemented**” and includes “**one or more physical processors configured to execute computer program modules,**” Poupyrev explains that **control section 20** in Figure 1 above “may be embodied with a computer... which may include a CPU [*i.e.*, central processing unit], a memory, an external data storage, and an input/output interface.” (Poupyrev, ¶0060; *see also id.* ¶0070 (discussing that data storage **110**, within control section **20**, may be “[a]ny widely available data storage devices,” including “flash memory, ROM, hard drive

as well as network storage.”).) It would have been obvious that the method in Poupyrev is “**computer-implemented**” because it is implemented in a system including a computer having a CPU (“**one or more physical processors**”). Poupyrev further discloses that “[v]arious functions performed by sub-sections of the control section **20** and the application section **30** may be realized by executing corresponding software installed in the computer...” (Poupyrev, ¶0060.)

It would have been obvious that the software in Poupyrev would have taken the form of “**program modules**” executed by “**one or more physical processors.**” (Cooperstock, ¶63.) The ’806 patent does not define “**program modules,**” but explains that these modules may be executed “by software; hardware; firmware; some combination of software, hardware, and/or firmware; and/or other mechanisms for configuring processing capabilities on processor **20.**” (’806, 6:65-7:2.) This is consistent with the general understanding of “**module**” to persons of ordinary skill in the art as referring to a portion of a computer program (such as a collection of routines or procedures) that performs a particular task. (Cooperstock, ¶63.)

It would have been obvious that the CPU in Poupyrev would have executed “**program modules,**” which would have included software routines used to carry out the “[v]arious functions performed by sub-sections of the control section **20** and the application section **30,**” as described in Poupyrev. (Poupyrev, ¶0060.) For

example, it would have been obvious that the claimed “**program modules**” would have included at least software routines associated with **control section 20** and application section **30** shown in Figure 1. (Cooperstock, ¶63.) Petitioner will describe the functions carried out by these program modules in detail below.

Finally, the system in Poupyrev “**includes a haptic device.**” The language of claim 11 makes clear that the claimed “**haptic device**” is used in generating haptic stimulation for the user. (See ’806, 26:1-2 (Limitation 11[e]: “generating, with the haptic device, the determined stimulation during performance of the control gesture”).) The ’806 patent further explains that “actuators **16** are configured to generate haptic stimulus for user **12**” and “may include any device configured to generate [tactile] feedback for application to the users.” (’806, 5:54-55, 6:3-10.)

The “**haptic device**” in Poupyrev corresponds to at least haptic feedback generating unit **102** (also referred to in Poupyrev as tactile feedback generating unit **102**), a part of **display/input section 10** shown in Figure 1 above, which includes an actuator that generates the haptic stimulation for the user. (Poupyrev, ¶¶0054-0055, 0063, 0118.) Poupyrev explains that GUI controller **112** of **control section 20** sends appropriate commands to tactile interface controller **111**, which in turn sends appropriate commands to signal generation unit **106**, as shown in Figure 1. (Poupyrev, ¶0070.) “The signal generating unit **106** generates and provides a signal

to the tactile feedback generating unit 102 for driving tactile feedback generating elements or the piezoelectric actuators.” (Poupyrev, ¶0063.) “The haptic feedback generating unit 102 may be formed with piezoelectric bimorph actuators with single or multiple layer structure.” (Poupyrev, ¶0055.)

- (a) “**monitoring, on the one or more processors, performance of a control gesture by a user**” (Limitation 11[a])
- (b) “**wherein the control gesture is a gesture associated with a command input to the system, and includes an initial portion, a first intermediate portion, and an ending portion**” (Limitation 11[b])

Because limitations 11[a] and 11[b] are closely related, Petitioner will address them together. For convenience of the reader, Petitioner will first explain how Poupyrev discloses and renders obvious the claimed “**control gesture**,” including each of the claimed portions, and then explain how the claimed “**monitoring**” for the control gesture occurs in Poupyrev.

Poupyrev discloses a “**control gesture**” in the form of a gesture in which a user interacts with and controls a GUI object, such as a button appearing on a touch-sensitive display. Petitioner will describe this gesture in more detail below.

Generally speaking, a user in Poupyrev can activate a GUI object (such as a button) on a touch screen by making contact with the object and increasing the pressure applied to it. Figure 5 shows one example:

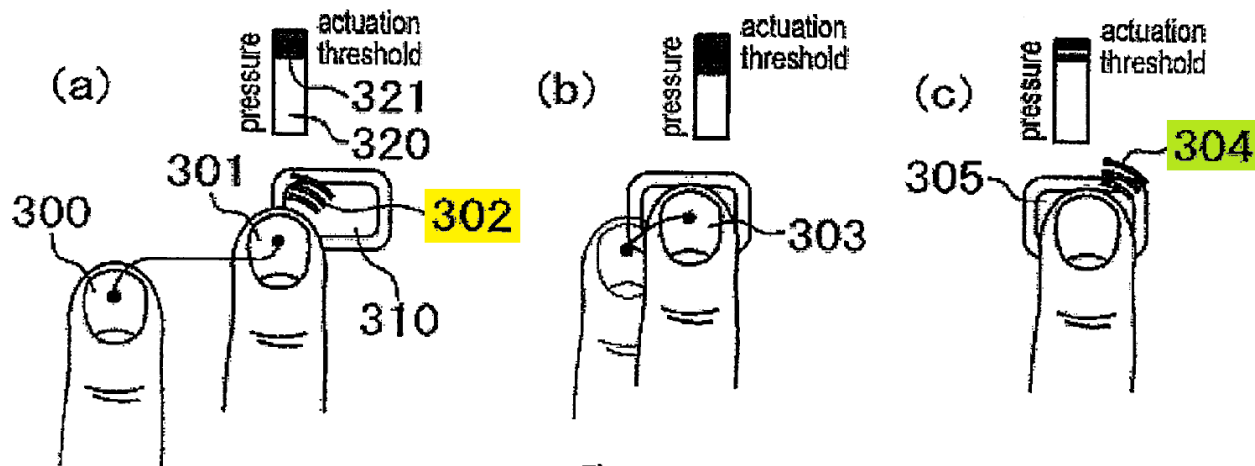
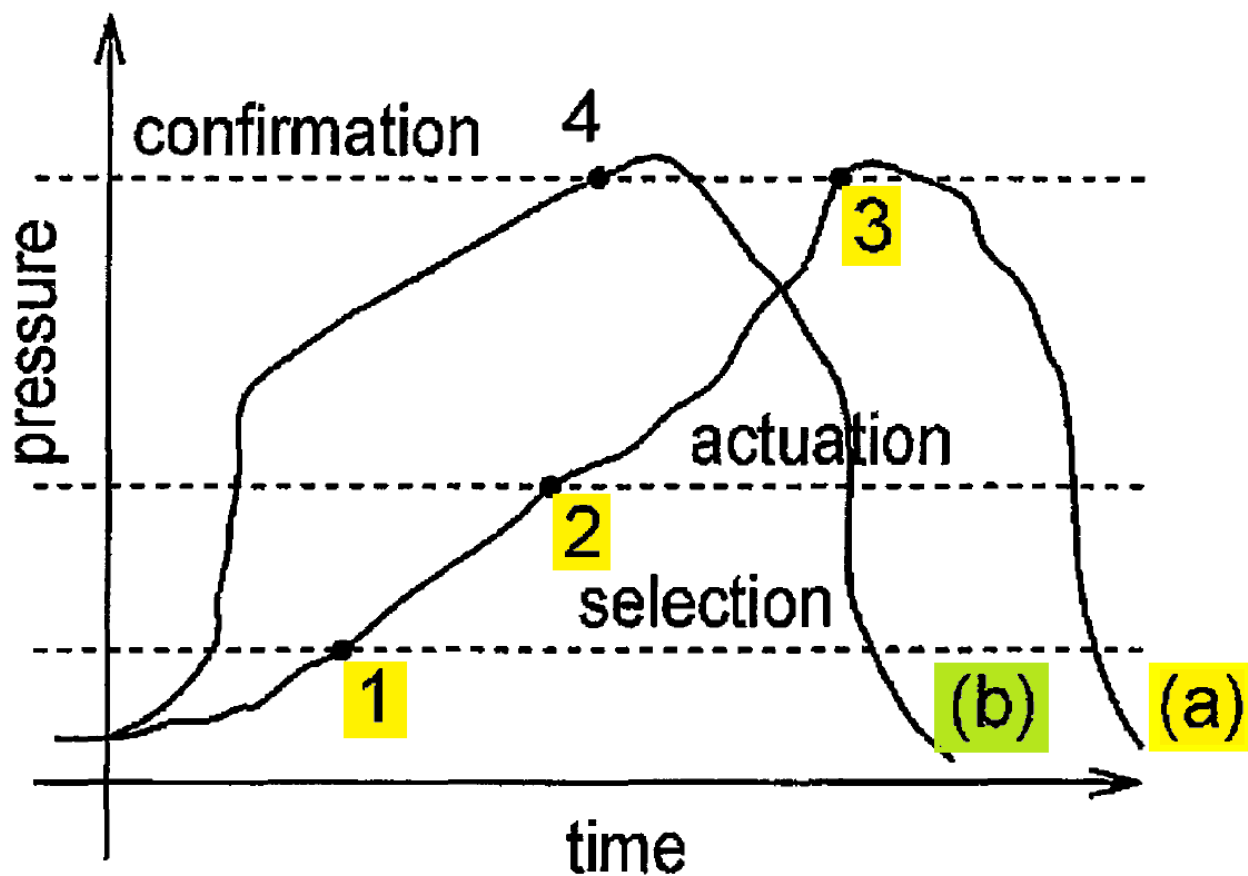


Figure 5

(Poupyrev, Fig. 5 (highlighting added).) The particular example in Figure 5 shows haptic feedback provided at 302 and 304. Figure 5(a) shows the user sliding their finger from initial position 300 to position 301 at the boundary of GUI object 310. (Poupyrev, ¶0085.) The apparatus responds by “provid[ing] a tactile feedback 302 to allow the user 2 to ‘feel’ the GUI object 310.” (Poupyrev, ¶0085.) The user has at this stage selected but not yet activated (actuated) the GUI object. (Poupyrev, ¶0081 (“Accordingly, the user 2 can feel the GUI objects on the screen without activating them”).) Figure 5(b) shows that the user has subsequently moved their finger further inside GUI object 310 and increased the pressure (*i.e.*, how strong it is pressing down on the screen) to a level above actuation threshold 321. (Poupyrev, ¶0086.) This indicates that “the GUI object 310 is actuated,” and in response as shown in Figure 5(c) above, “tactile feedback 304 is provided as well as visual feedback 305 to inform the user 2 that the GUI object 310 was selected and actuated.” (Poupyrev, ¶¶0086, 0082 (“Accordingly, it is possible to let the user 2

knows [sic] that the selected GUI object **203** is activated with the haptic feedback”).) Poupyrev makes clear that different haptic feedback effects can be provided for the “selected” and “activated” states of a GUI object. (Poupyrev, ¶0083 (“In the present embodiment, the different haptic feedbacks are provided to distinct the logical states of GUI object, namely ‘selected state’ and ‘activated state’.”).) In this example, therefore, two types of haptic stimulation are provided corresponding to the “selected” and “activated” (or “actuated”) states of the GUI object.

Poupyrev discloses a more sophisticated example of activation of a GUI object to which Petitioner has mapped the claimed “**control gesture**.” In this further embodiment, “an additional step for confirming the completion of actuating operation, such as adding another pressure threshold or detecting releasing of the finger, may be added to avoid accidental actuation.” (Poupyrev, ¶0087.) This example is depicted in Figure 11:

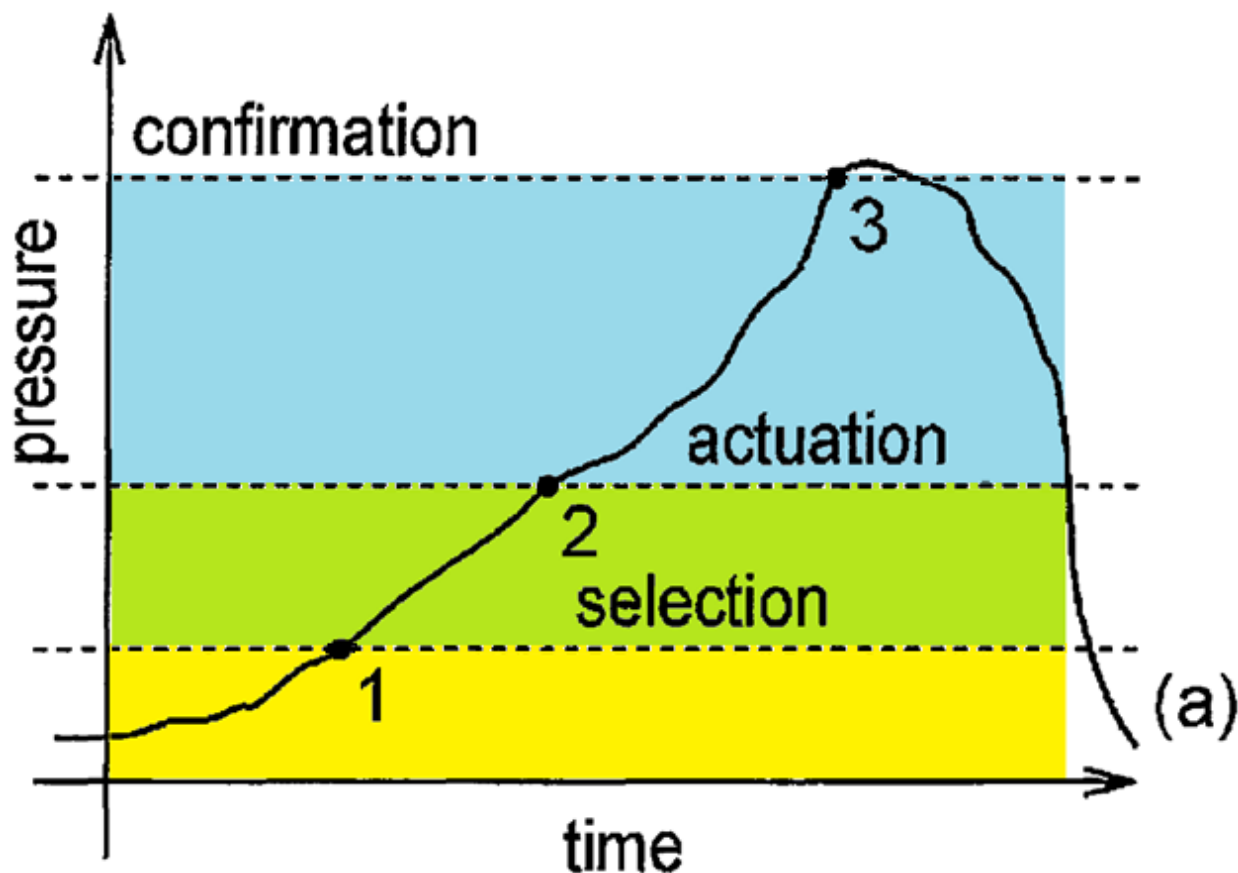


(Poupyrev, Fig. 11 (highlighting added).) Figure 11 shows two exemplary pressure curves (a) and (b) that show tactile feedback provided to the user based on pressure applied to a GUI object (vertical axis) over time (horizontal axis). In both examples, the user touches a GUI object (such as a button) and then increases the amount of pressure applied to the object. (Cooperstock, ¶67.)

For purposes of claim 11, Petitioner will focus primarily on Curve (a), which includes Points 1, 2, and 3, as shown. At Point 1, the user has initiated contact with the GUI object and increased pressure passing the “selection” pressure threshold, causing tactile feedback to be provided – but at this point the GUI object is not yet

activated. (Poupyrev, ¶0119 (“As the user touches and pushes the GUI object to pass a selection threshold, a tactile feedback is provided (Point **1** of Curve (a)) without actuating the GUI object.”).) After that, “[t]he user presses further to pass the actuation threshold where a different tactile feedback is provided (Point **2**). In this example, however, the GUI object is not actuated yet. To actuate the GUI object, the user should press further to the confirmation threshold that also provides still another tactile feedback (Point **3**).” (Poupyrev, ¶0119.) The GUI object is therefore activated only after the user passes confirmation threshold at Point **3**. Poupyrev explains that “the reason for providing this additional threshold or confirmation threshold is to avoid accidental activation of the GUI objects.” (Poupyrev, ¶0120.)

The “**control gesture**” in Poupyrev for purposes of claim 11 thus corresponds to the gesture shown in Curve **(a)** in which the user controls the GUI object by making contact with the object on the touch-sensitive display and then increasing the pressure until passing the confirmation threshold, at which point the GUI object is activated. (Cooperstock, ¶70.) This control gesture “**includes an initial portion, a first intermediate portion, and an ending portion,**” as claimed. These portions are illustrated in the following highlighted version of Figure 11 below:



(Cooperstock, ¶70; Poupyrev, Fig. 11 (highlighting added).) The figure above omits Curve (b) from Figure 11 for simplicity and to allow better focus on Curve (a). (Cooperstock, ¶70.) Petitioner will separately discuss Curve (b) below. The colored highlighting was added to illustrate “an initial portion,” “a first intermediate portion,” and “an ending portion,” as claimed.

As shown, the “control gesture” in Poupyrev includes “an initial portion,” *i.e.*, the portion of the gesture in which the user initiates contact with the GUI object and/or presses the GUI object, with pressure sufficient to pass the selection threshold at Point 1, as discussed in more detail below. The “control gesture” also includes

“**a first intermediate portion**,” *i.e.*, the portion of the gesture in which the user maintains contact with the GUI object and further increases the pressure until it passes the actuation threshold at Point **2**. And finally, the “**control gesture**” includes “**an ending portion**” *i.e.*, the portion of the gesture in which the user further increases the pressure until passing the confirmation threshold at Point **3**. (Cooperstock, ¶70.) This mapping of Poupyrev to the claimed “**control gesture**” is not only consistent with the claim language but also mirrors exemplary embodiments described in the written description of the ’806 patent, as explained below.

More specifically, with respect to the claimed “**initial portion**,” Poupyrev discloses this portion in two independent ways. First, the “**initial portion**” corresponds to the user initially making contact with the GUI object using the touch-sensitive display, and then increasing the pressure applied to the GUI object to pass selection threshold at Point **1**, as shown in Figure 11 above. This mirrors an exemplary initial portion in the ’806 patent that “may include initiating contact with the touch-sensitive surface at one or more locations,” which can specify “a pressure with which contact is initiated,” among other factors. (’806, 7:49-57.)

As a second and independent way, the “**initial portion**” in Poupyrev corresponds to the user, who is already making contact with the GUI object, increasing the pressure applied to the GUI object to pass selection threshold at Point

1. Under this alternative embodiment, therefore, the claimed initial portion need not include the user initially making contact with the GUI object. (Cooperstock, ¶72.) This is also consistent with the '806 patent, which explains that an **“initial portion”** can exist even “[i]f user **12** is already in contact with the touch-sensitive surface” ('806, 7:57-58), and can include a number of actions including “maintaining contact (at specific location(s), or generally) with the touch-sensitive surface” ('806, 7:60-62), among others. Under either of these independent theories, Poupyrev discloses the claimed **“initial portion”** of a control gesture.

Moving next to the claimed **“first intermediate portion,”** the '806 patent further explains that it “may include “one or more of maintaining contact at one or more points without moving,” and may further include “pressing harder or softer on the touch-sensitive surface,” among other actions. ('806, 7:65-8:5.) And the claimed **“ending portion”** can also similarly include, according to the '806 patent, “pressing harder or softer on the touch sensitive surface,” among other actions. ('806, 8:5-11.) These disclosures from the '806 patent also mirror the above-described operation of Poupyrev, in which the user maintains contact with the GUI object and then increases the pressure applied to the GUI object to pass actuation threshold at Point **2** (**“first intermediate portion”**) and then further increases the pressure to pass confirmation threshold at Point **3** (**“ending portion”**), at which point

the GUI object is activated. (Poupyrev, ¶0119; Cooperstock, ¶73.)

Petitioner has focused on Curve **(a)** of Figure 11 because it discloses discrete Points **1**, **2**, and **3** at which applicable pressure thresholds are passed and corresponding haptic feedback is provided. (Poupyrev, ¶0119; Cooperstock, ¶74.) Petitioner has not relied on Curve **(b)** shown in Figure 11 because that curve does not disclose separately providing haptic stimulation in response to the “**initial portion**” and “**intermediate portion**,” as required by later claim limitations (11[c]-[d]) as discussed below. Curve **(b)** instead only provides haptic stimulation after the user passes the confirmation threshold (Point **4**). (Poupyrev, ¶0122, Fig. 11.)

But Poupyrev’s disclosure of Curve **(b)** provides no obstacle to a finding of obviousness. Federal Circuit law is clear that “a prior art product that sometimes, but not always, embodies a claimed method nonetheless teaches that aspect of the invention.” *Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1326 (Fed. Cir. 2003). Accordingly, when the user in Poupyrev interacts with the GUI object in a manner consistent with Curve **(a)** in Figure 11, that interaction results in performance of the claimed steps and thus embodies the claim, irrespective of

whether Poupyrev discloses other ways to use the system.² (Cooperstock, ¶74.)

And even if Patent Owner could argue that disclosure of the alternative Curve **(b)** provided some obstacle to a showing of obviousness (which it does not), it would have been obvious to omit the functionality of Curve **(b)** when implementing Poupyrev, predictably resulting in the system of Poupyrev in which activation of a GUI object with a confirmation threshold required that the user follow Curve **(a)**. (Cooperstock, ¶76; Poupyrev, ¶0134 (“Various modifications of the illustrative embodiments... which are apparent to persons skilled in the art to which the invention pertains are deemed to lie within the scope of the invention.”).) An ordinarily skilled artisan would have been motivated to make this change because

² Petitioner notes that Curve **(b)** nevertheless also shows a “**control gesture**” with the same claimed portions as Curve **(a)**, because it likewise involves the user touching the GUI object and increasing pressure sufficient to pass all three of the pressure thresholds. (Poupyrev, Fig. 11, ¶¶0121-122; Cooperstock, ¶75.) The key difference, as explained in the text, is that Curve **(b)** does not generate separate haptic stimulations at the initial and intermediate portions, but instead only at Point 4 upon passing the confirmation threshold. (Poupyrev, ¶0122, Fig. 11.) For this reason, Petitioner has not relied upon Curve **(b)** for the claimed control gesture.

Curve **(a)** provides more protection against the accidental or unintended user activation of the GUI object than Curve **(b)**. This is because, under Curve **(a)**, the confirmation threshold is not reached until the user presses on the GUI object for a longer period of time and receives distinct tactile feedback at the selection, actuation and confirmation thresholds, which does not occur in Curve **(b)**. (Cooperstock, ¶76.) Poupyrev itself explains that “[t]he reason for providing this additional threshold or confirmation threshold is to avoid accidental activation of the GUI objects.” (Poupyrev, ¶0120.) Implementing Poupyrev to allow the user to pass the confirmation threshold only using Curve **(a)** – with provision of distinct tactile feedback at the selection (Point **1**), actuation (Point **2**), and confirmation (Point **3**) thresholds as discussed above – would have been particularly beneficial to avoid accidental user activation for a GUI object associated with a mission-critical feature or an operation that could not be undone. (Cooperstock, ¶76.)

Turning back to the claim limitations, the “**control gesture**” in Poupyrev is also “**associated with a command input to the system,**” *i.e.*, activation of the GUI object. Poupyrev explains that the touch screen can display “images of buttons, keys, switches or any other Graphic User Interface (GUI) objects to prompt a user **2** to interact with the apparatus **1**.” (Poupyrev, ¶0049.) In the example above, the “**command input**” corresponds to the actual activation of the GUI object upon

passing the confirmation threshold, which serves as an input for the system to activate the command or function associated with that GUI object. (Poupyrev, *e.g.*, ¶¶0074 (“...when the user 2 indicates that the GUI object should execute an associated command, corresponding to pressing of a physical button.”), 0052 (“The application section 30 performs various operations or functions in response to the user’s input operation detected by the display/input section 10.”).)

Claim 11 does not require that the “**command input**” correspond to any particular function, feature, or command. It would have been obvious that the functionality performed in response to activation of the GUI object in Poupyrev would have depended on the function that the underlying software application assigns to the GUI object. (Cooperstock, ¶78; Poupyrev, ¶¶0007 (“Furthermore, it is desirable to provide tactile notification to the user when the functionality of the user interface element is executed.”), 0052 (“The application section 30 performs various operations or functions in response to the user’s input operation detected by the display/input section 10. The application section 30 may include various applications and software units or hardware.”).) For example, if the GUI object is a button, activating the button would have resulted in the software application carrying out the function or command corresponding to that button. (Cooperstock, ¶78.)

Poupyrev also discloses and renders obvious “**monitoring, on the one or**

more processors,” the performance of this control gesture. The claimed monitoring is performed by GUI controller **112** in Poupyrev (part of control section **20**), which receives information about both the position and pressure being applied to the screen by the user. (Poupyrev, ¶0066 (“The pressure sensing unit controller **109** determines the value of pressure applied when the user is touching on the screen. The position sensing unit controller **108** determines the position where the user **2** is touching on the screen. The determined data is communicated to the GUI controller **112**.”).) As Poupyrev explains:

The GUI controller **112** determines which GUI object the user **2** is intending to interact with. Further, depending on a) the current state of the GUI object and b) pressure value applied to the GUI object, the GUI controller **112** determines an appropriate change in the state of the GUI object. For example, if the GUI object is a graphical button, the GUI controller **112** can calculate is [sic; if] there was enough pressure applied on the graphical button on the screen to change the state of the button from “free” to “pressed” or “non-actuated” to “actuated.”

(Poupyrev, ¶0068.) “The GUI controller **112** further sends the commands to the tactile interface controller **111** that generates appropriate commands for driving the tactile signal generation unit **102**.” (Poupyrev, ¶0070.) It would therefore have been obvious that GUI controller **112** in Poupyrev is responsible for “**monitoring**” the performance of the claimed “**control gesture**,” because it determines that the user

pressed the GUI object and measures whether the user has passed the pressure thresholds at Point 1, Point 2, and Point 3, respectively, corresponding to the claimed “an initial portion,” “a first intermediate portion,” and “an ending portion.” (Cooperstock, ¶79.) It would also have been obvious that the monitoring by GUI controller 112 takes place “on the one or more processors,” because the functions of GUI controller 112 (a subsection of control section 20) can be carried out by software executed by the CPU, as explained earlier. (Cooperstock, ¶¶79, 63; *see also* Poupyrev, ¶¶0060 (“The control section 20... may be embodied with a computer (not shown in the figure), which may include a CPU... Various functions performed by sub-sections of the control section 20... may be realized by executing corresponding software installed in the computer....”), 0062 (“The controller section 20 includes... a graphical user interface (GUI) controller 112.”).)

Finally, as noted in **Part V** above, the term “**control gesture**” is subject to a dispute in the pending litigation, but that dispute is immaterial to this IPR because Poupyrev satisfies all of the proposed constructions. Patent Owner contends that “**control gesture**” should be given its plain and ordinary meaning, or alternatively, construed as “*a user manipulation having separate portions that must be performed in a specific order and/or with a specific timing.*” (EX1006, pp.001-002.) This construction is satisfied by Poupyrev for the reasons provided above; the control

gesture is a user manipulation having three separate portions that must be performed in at least a specific order beginning with the selection threshold, continuing through the actuation threshold and ending at the confirmation threshold, in order to activate the GUI object. (Poupyrev, ¶0119, Fig. 11; Cooperstock, ¶82.)

Petitioner has proposed a construction of “**control gesture**” in the pending litigation that comes directly from the written description in the ’806 patent, *i.e.*, “*a gesture made by a user that is a single and discrete control input having separate portions. The separate portions must be performed in specific order and/or with a specific timing to effectively achieve the control input associated with the ‘control gesture.’ Performance of the separate portions, on their own, will not result in the control input associated with the ‘control gesture’ as a whole (e.g., a ‘control gesture’ is not merely a combination of other gestures, each associated with its own control input).*” As noted, this construction mirrors the description provided in the written description of the ’806 patent. (’806, 5:7-16.) Patent Owner, for its part, does not agree that this language should be part of the construction.

Nevertheless, even if Petitioner’s construction were adopted, Poupyrev satisfies it. The control gesture as described above is a “*single and discrete control input having discrete portions.*” With respect to “*control input,*” the ’806 patent states that a touch sensitive surface – such as Poupyrev’s display/input section **10** –

is an example of a “control input device.” (’806, 5:29- 38.) The ’806 patent further explains that a control input device enables the system to receive a control input from the user. (’806, 7:41-43 (“The gesture module **24** is configured to receive one or more output signals generated by user interface **14** indicating control inputs received from user **12**.”).) Thus, as applied to Poupyrev, display/input section **10** is a device that enables a user to enter a control input in the form of a gesture in order to control the system. (Poupyrev, e.g., ¶0052 (“The application section **30** performs various operations or functions in response to the user’s input operation detected by the display/input section **10**.”).) And the gesture-based activation of the GUI object in Poupyrev is “*a single and discrete control input*” because activation only occurs after the user passes confirmation threshold, with the gesture having three discrete portions, i.e., “**an initial portion**,” “**a first intermediate portion**,” and “**an ending portion**” as described. Next, each of these portions “*must be performed in specific order and/or with a specific timing to effectively achieve the control input associated with the ‘control gesture,’*” because they must be performed in at least a specific order; activation occurs only after the user passes the selection, actuation, and confirmation thresholds, in that sequence. (Poupyrev, ¶0119, Fig. 11.)

Finally and for the same reasons, “[p]erformance of the separate portions, on their own, will not result in the control input associated with the ‘control gesture’

as a whole (e.g., a ‘control gesture’ is not merely a combination of other gestures, each associated with its own control input),” because activation of the GUI object only occurs in response to the user passing the confirmation threshold. For example, if the user were to press on the GUI object without passing the confirmation threshold pressure (e.g. by disengaging contact with the GUI object or reducing pressure before passing the confirmation threshold), activation of the GUI object would not have occurred. (Poupyrev, ¶0119 (explaining that the GUI object is not activated in Curve (a) until the user presses to the confirmation threshold at Point 3).) This is consistent with Poupyrev which, as noted, explains that “[t]he reason for providing this additional threshold or confirmation threshold is to avoid accidental activation of the GUI objects.” (Poupyrev, ¶0120; Cooperstock, ¶81.)

- (c) **“determining, on the one or more processors, haptic stimulation associated with performance of the control gesture to be generated for the user” (Limitation 11[c])**
- (d) **“wherein the haptic stimulation includes a first stimulation determined responsive to performance of the initial portion of the control gesture, and a second stimulation that is different from the first stimulation and is determined responsive to performance of the first intermediate portion of the control gesture; and” (Limitation 11[d])**

Because of the close relationship between limitation 11[c] and 11[d], Petitioner will address them together.

The **“haptic stimulation associated with performance of the control**

gesture to be generated for the user” for limitation 11[c]-[d] corresponds to the tactile feedback provided to the user, as explained for limitations 11[a]-[b] above, at Points **1** and **2** in Curve (a) in response to the pressure applied by the user passing the selection and actuation thresholds, respectively. As Poupyrev explains:

As the user touches and pushes the GUI object to pass a selection threshold, a tactile feedback is provided (Point **1** of Curve (a)) without actuating the GUI object. The user presses further to pass the actuation threshold where a different tactile feedback is provided (Point **2**). In this example, however, the GUI object is not actuated yet. To actuate the GUI object, the user should press further to the confirmation threshold that also provides still another tactile feedback (Point **3**).

(Poupyrev, ¶0119.)

The “tactile feedback [that] is provided” (*id.*) at Point **1** of Curve (a) discloses **“a first stimulation determined responsive to performance of the initial portion of the control gesture,”** as recited in limitation 11[d], because it was provided in response to the user making contact with the GUI object and passing the selection threshold. The “different tactile feedback [that] is provided” (*id.*) at Point **2** of Curve (a) discloses **“a second stimulation that is different from the first stimulation and is determined responsive to performance of the first intermediate portion of the control gesture,”** because it was provided in response to the user maintaining contact with the GUI object and increasing the pressure to pass the actuation

threshold, and as noted, is “**different from**” the tactile feedback provided at Point 1.

As shown above and although not required by claim 11, Poupyrev discloses a third and different haptic stimulation at Point 3 in response to the user further increasing pressure to pass the confirmation threshold. This is separately discussed for dependent claim 12 discussed in **Part IV.B.2** below.

As fully explained for limitations 11[a]-[b] above, the alternative Curve (b) in Figure 11 of Poupyrev does not provide haptic stimulation for the “**initial portion**” or the “**first intermediate portion**,” but this is immaterial for the reasons provided above. (Cooperstock, ¶¶74, 84.) Because the claimed first and second haptic stimulations are in fact provided when the GUI object is operated in accordance with Curve (a), Poupyrev discloses these limitations. And as noted above, it also would have been obvious to an ordinarily skilled artisan to implement Poupyrev without the alternative Curve (b). (Cooperstock, ¶¶76, 84.)

And for the same reasons explained for limitations 11[a]-[b], each of haptic stimulations is determined “**on the one or more processors**,” as claimed, because the tactile feedback is determined by GUI controller 112. (Poupyrev, ¶¶0068 (“The GUI controller 112 determines which GUI object the user 2 is intending to interact with. Further, depending on a) the current state of the GUI object and b) pressure value applied to the GUI object, the GUI controller 112 determines an appropriate

change in the state of the GUI object. For example, if the GUI object is a graphical button, the GUI controller **112** can calculate is [sic; if] there was enough pressure applied on the graphical button on the screen to change the state of the button from ‘free’ to ‘pressed’ or ‘non-actuated’ to ‘actuated.’”), 0070 (“The GUI controller **112** further sends the commands to the tactile interface controller **111** that generates appropriate commands for driving the tactile signal generation unit **102**.”), claim 1 (“the controller section determines a form of the haptic feedback to be generated depending on (i) the detected touch position, (ii) the detected pressure value and (iii) the determined current logical state of the graphical user interface object”).) As explained for limitations 11[a]-[b], it would have been obvious that the functionality of GUI controller **112** for performing the claimed determining step would have been carried out by software executed by the one or more processors. (Cooperstock, ¶¶85, 79, 62-63; *see also* Poupyrev, ¶0060 (“Various functions performed by sub-sections of the control section **20** [of Figure 1 which includes GUI controller **112**] may be realized by executing corresponding software installed in the computer....”).)

- (e) **“generating, with the haptic device, the determined stimulation during performance of the control gesture.” (Limitation 11[e])**

For purposes of limitation 11[e], the claimed **“determined stimulation”** corresponds to the tactile feedback provided to the user when pressing the GUI

object at Point 1 and Point 2 as discussed above (“during performance of the control gesture”). (Cooperstock, ¶¶87, 83.)

The components used in generation of the haptic stimulation and the flow of information between them are shown in Figure 1:

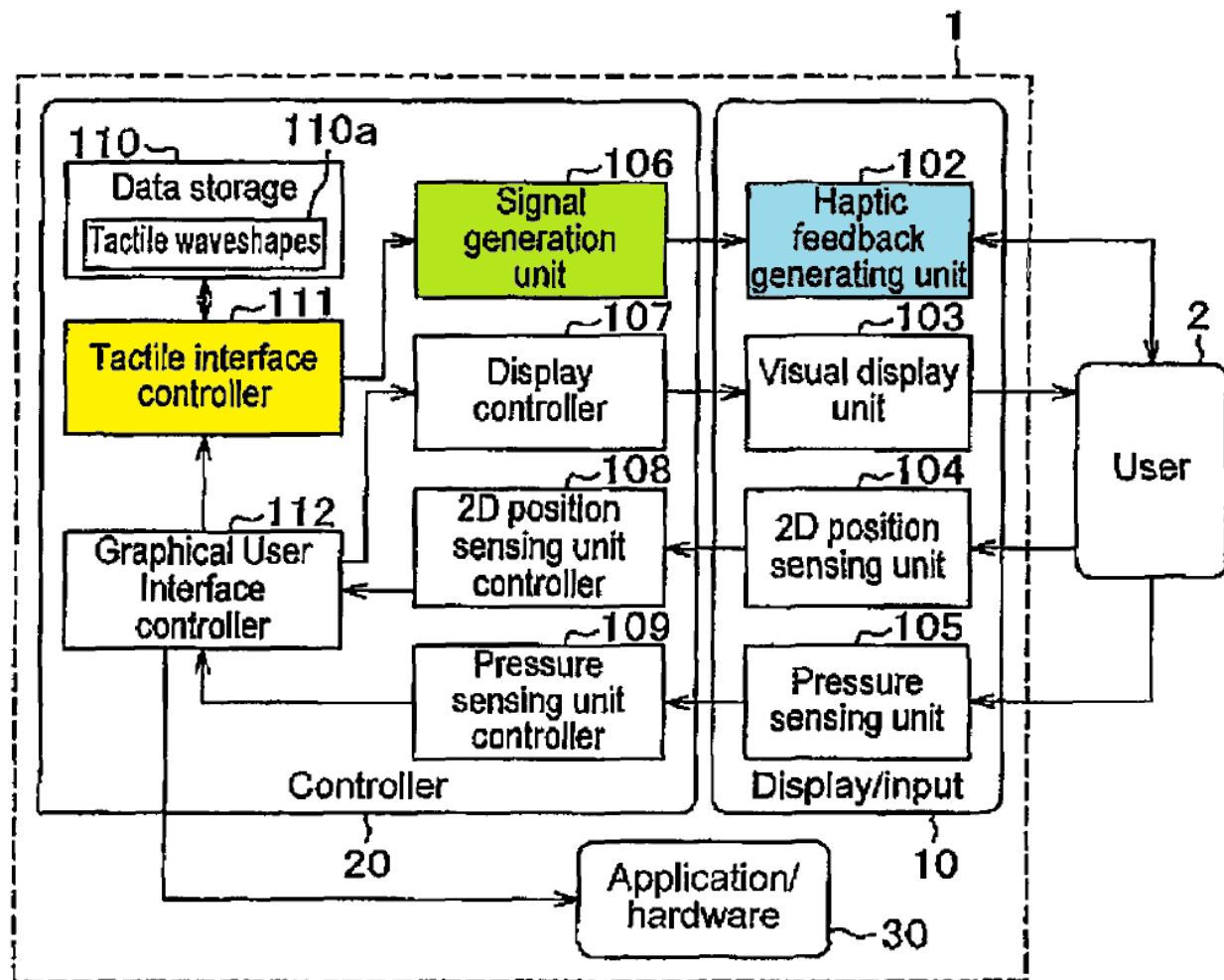


Figure 1

(Poupyrev, Fig. 1 (highlighting added).) Poupyrev explains that GUI controller 112 sends commands to the tactile interface controller 111 to generate appropriate commands for driving the tactile signal generation unit, shown by the information

flow arrows in Figure 1 above. (Poupyrev, ¶0070.) “The signal generating unit 106 generates and provides a signal to the tactile feedback generating unit 102 for driving tactile feedback generating elements or the piezoelectric actuators.” (Poupyrev, ¶0063.) “The haptic feedback generating unit 102 may be formed with piezoelectric bimorph actuators with single or multiple layer structure.” (Poupyrev, ¶0055.) Accordingly, the “**determined stimulation**” is thus generated “**with the haptic device,**” *i.e.*, haptic feedback generating unit 102.

2. **Claim 12: “The method of claim 11, wherein the haptic stimulation associated with the control gesture includes a third stimulation different from the first stimulation and the second stimulation that is determined responsive to performance of the ending portion of the control gesture.”**

As explained for limitations 11[c]-[d] above, a third haptic stimulation is provided to the user in response to the user increasing pressure and passing the confirmation threshold at Point 3 of Curve (a) (“**responsive to performance of the ending portion of the control gesture**”). As Poupyrev explains:

As the user touches and pushes the GUI object to pass a selection threshold, a tactile feedback is provided (Point 1 of Curve (a)) without actuating the GUI object. The user presses further to pass the actuation threshold where a different tactile feedback is provided (Point 2). In this example, however, the GUI object is not actuated yet. To actuate the GUI object, the user should press further to the confirmation threshold that also provides **still another tactile feedback** (Point 3).

(Poupyrev, ¶0119.) Poupyrev describes this third haptic stimulation as “still another tactile feedback” (*id.*), confirming that it is “**different from the first stimulation and the second stimulation,**” as claimed, because it is different from the tactile feedback provided at Point 1 and Point 2. (Cooperstock, ¶87.)

3. Claim 15: “The method of claim 11, wherein the command input associated with the control gesture is a single, discrete command.”

As fully explained in the discussion of limitations 11[b]-[c] above, the command input associated with the control gesture is a “**single, discrete command,**” *i.e.*, a single and discrete activation of the GUI object in response to the user passing the confirmation threshold. (Poupyrev, *e.g.*, ¶0074 (“...when the user 2 indicates that the GUI object should execute an associated command, corresponding to pressing of a physical button.”).) And as fully explained for limitation 11[b], activation of the GUI object is a discrete event that occurs, for Curve (a) of Figure 11, only after the user passes the confirmation threshold at Point 3. (Poupyrev, Fig. 11, ¶0119; Cooperstock, ¶81.) For example, if the user were to press on the GUI object in Poupyrev without passing the confirmation threshold pressure (*e.g.* by disengaging contact with the GUI object or reducing pressure before passing the confirmation threshold), activation of the GUI object would not have occurred. (Poupyrev, ¶¶0119 (explaining that the GUI object is not activated in Curve (a) until

the user presses to the confirmation threshold at Point 3), 120 (“The reason for providing this additional threshold or confirmation threshold is to avoid accidental activation of the GUI objects.”); Cooperstock, ¶81.)

C. Ground 2: Claims 11, 12, and 15 Are Obvious Over Grant ’499.

1. Independent Claim 11

The preamble recites “[a] **computer-implemented method of providing haptic stimulation to a user of a system, the method being implemented in the system which includes a haptic device and one or more physical processors configured to execute computer program modules, the method comprising....**”

Even assuming the preamble of claim 11 is limiting, it is disclosed by and rendered obvious over Grant ’499.

Grant ’499 discloses a system providing a **computer-implemented method** of casino-type gaming using a touch-sensitive input device (for example, a touch screen) coupled to an actuator for outputting gameplay-related **haptic stimulation** to a user. (Grant ’499, *e.g.*, ¶¶0017 (“Embodiments of the present invention provide systems and methods for casino gaming haptics.”), 0020 (“[T]he system **100** provides haptic feedback to the player.... [A]ctuator **103** may generate a haptic effect”).) The system of Grant ’499, as in Figure 1 below, includes “**a computer**” (**computer 101**), “**a haptic device**” (**actuator 103**), and “**one or more physical processors**” (**processor 110**) that execute “**computer program modules**” (*e.g.*,

application 120):

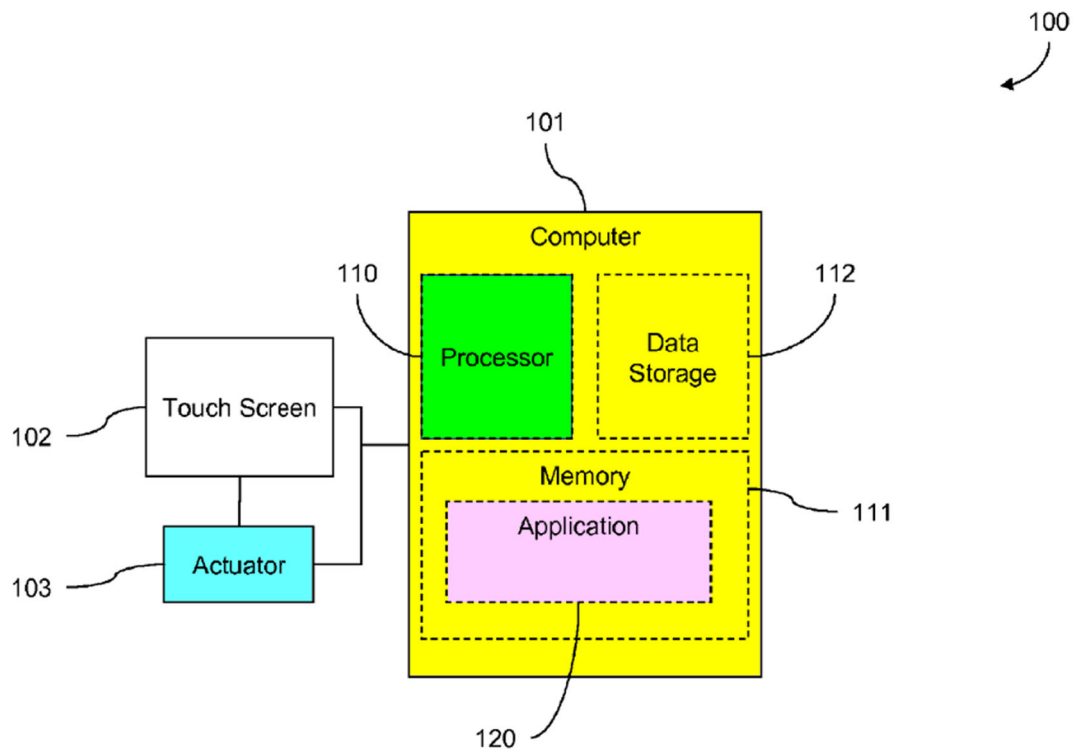


Figure 1

(Grant '499, Fig. 1 (highlighting added); *see also id.*, ¶¶0008 (“FIG. 1 is a block diagram illustrating a system for casino gaming haptics according to one embodiment of the present invention.”), 0018.)

As explained in the discussion of the preamble in **Ground 1**, the recited “**haptic device**” includes a device such as an actuator that is used to generate haptic stimulation. The “**haptic device**” in Grant '499 corresponds to an actuator. Grant '499 explains that “actuator 103...may be commanded by the computer 101 to

output haptic effects” (Grant ’499, ¶0020) and identifies various types of actuators for generating haptic effects, including “pneumatic/hydraulic active actuators” and “piezoelectric actuators.” (Grant ’499, ¶¶0029, 0029-0030 (identifying various types of actuators).) This is consistent with the ’806 patent, which explains that “actuators **16** are configured to generate haptic stimulus for user **12**” and “may include any device configured to generate [tactile] feedback for application to the users.” (’806, 5:54-55, 6:3-10; *see also id.*, 6:8-17 (identifying various types of actuators, including piezoelectric and pneumatic actuators).)

With respect to the recited “**one or more physical processors configured to execute computer program modules**,” a person of ordinary skill in the art would have understood and found it obvious that this was part of Grant ’499’s system. (Cooperstock, ¶93.) Grant ’499 explains, for example, that “[c]omputer **101** comprises a **processor 110**” (Grant ’499, ¶0018), and that the processor is a “**physical processor**” that may comprise, for example, “a microprocessor, a digital signal processor (DSP), application-specific integrated circuit,” among other components. (Grant ’499, ¶0056.) Grant ’499 further explains that the processor is configured to load and execute computer program instructions, such as applications. (Grant ’499, ¶¶0018 (“[P]rocessor **110** configured to load an application **120** from storage **112** into memory **111**. In this illustrative embodiment, application **120** is a

casino gaming application configured to allow a user to play five-card draw poker.” (underlining added)), 0024 (“execute application 312”), 0049 (“the client **510** may receive a plurality of casino game applications”) (underlining added), 0056-0057 (processor “executes computer-executable program instructions” that “can cause the processor to perform” the described casino-gaming methods); *see also id.*, claims 48 & 65 (reciting “program code” for performing various operations).)

Claim 11 does not specify the form or functionality provided by the recited computer program modules that the processor(s) are configured to execute. For our purposes here, the “**computer program modules,**” in Grant ’499 could thus correspond to applications executed by the processor **110**, or to portions of a single application, for example, as well as any other portions of software executed by the processor **110** for computer **101** to operate. (Cooperstock, ¶93.)

- (a) “**monitoring, on the one or more processors, performance of a control gesture by a user**” (Limitation 11[a])
- (b) “**wherein the control gesture is a gesture associated with a command input to the system, and includes an initial portion, a first intermediate portion, and an ending portion**” (Limitation 11[b])

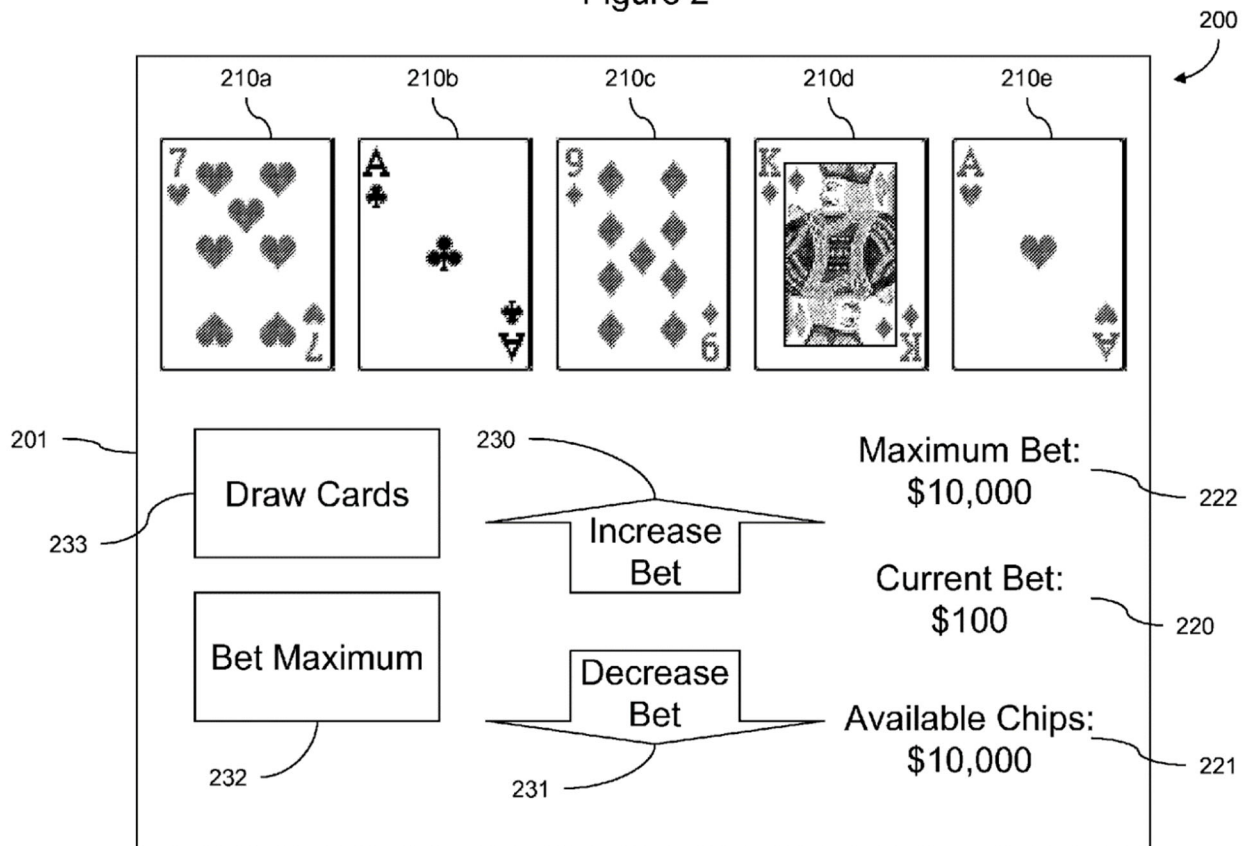
Because these two claim limitations are closely related, as with **Ground 1**, Petitioner will discuss them together. For convenience of the reader, Petitioner will first explain how Grant ’499 discloses and renders obvious the claimed “**control**

gesture,” including each of the claimed portions, and then explain how the claimed **“monitoring”** for the control gesture occurs in Grant ’499.

As noted, Grant ’499 discloses a system for “casino gaming haptics” that comprises (among other things) a touch-sensitive input device configured to sense a contact from a user, and an actuator configured to output a haptic effect to the touch-sensitive input device. (Grant ’499, ¶¶0005, 0023-0024, 0026, Fig. 3 (showing touch-sensitive input device **320** and actuator **330**)). Grant ’499 discloses a number of exemplary games that can be configured to include gaming haptics, including card games, dice games, roulette, checkers, among others. (Grant ’499, ¶0058.)

For purposes of **Ground 2**, Petitioner will focus primarily on embodiments casino haptics for card games such as poker and blackjack. (Grant ’499, ¶¶0019, 0062-0064, Fig. 2.) Figure 2 shows an exemplary screen shot of a poker game:

Figure 2



(Grant '499, Fig. 2.) Figure 2 shows a touch-screen displaying a five-card poker game **201**. (Grant '499, ¶0019.)

The claimed “**control gesture**” in Grant '499 corresponds to a gesture by the user to discard a playing card from the game – which Petitioner will refer to as Grant '499's “**discard gesture**.” (Cooperstock, ¶94.) Grant '499 observes that a user can discard a playing card, resulting in haptic feedback being provided to the user. (Grant '499, ¶¶0019-0020.)

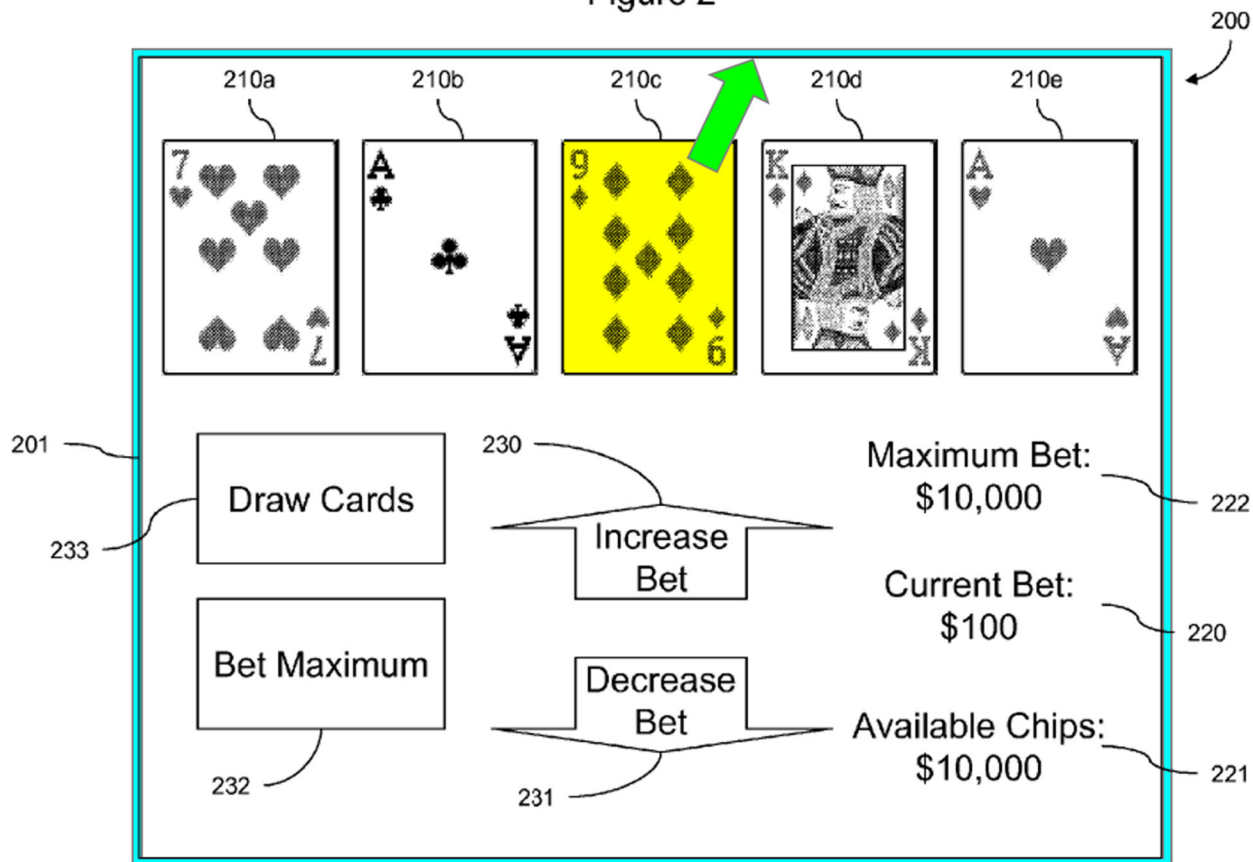
Grant '499 goes on to describe in more detail the steps required by the user to perform the discard gesture, and the haptic feedback provided to the user in response

to those steps. (Grant '499, ¶0064.) These steps confirm that the discard gesture in Grant '499 includes the three claimed discrete portions. To summarize, the discard gesture in Grant '499 has three required portions: (1) the user makes contact with a portion of the screen corresponding to a playing card in order to select the card (“an initial portion”), then (2) the user initiates a sliding motion to drag the selected card on the screen (“a first intermediate portion”), and finally (3) the user continues dragging the card until it reaches the edge of the screen to discard the selected card (“an ending portion”). (Cooperstock, ¶95.) Referring back to Figure 2 above, Grant '499 provides a further description of the discard gesture:

For example, in the embodiment shown in FIGS. 1 and 2, a user may touch the nine of diamonds 210c, and feel a light pop (e.g. a low magnitude, high frequency, short duration effect) to indicate that the card has been contacted. The user may then drag the card 210c to the edge of the screen 201 to discard the card. While the user is dragging the card, the system 100 may output a low magnitude, low frequency vibration to provide the tactile sensation of a card sliding across a felt surface. When the card reaches the edge of the screen, the system 100 may generate a strong pop (e.g. a high magnitude, high frequency, short duration) effect to indicate the card has been discarded.

(Grant '499, ¶0064 (highlighting added).) Petitioner has annotated Figure 2 below to illustrate the steps in this gesture using the highlighting colors above (*i.e.*, touch the playing card, start to drag the card, and continue dragging card to edge of screen):

Figure 2



(Grant '499, Fig. 2 (annotations added).) In this illustration, therefore, the user touches/selects the nine of diamonds card 210c, begins to drag that card toward the edge of the screen, and then continues dragging the card until it reaches the edge of the screen, which causes it to be discarded. (Cooperstock, ¶95.)

Grant '499's discard gesture qualifies as a “**control gesture**” because it provides a gesture that controls an aspect of the virtual card game (*e.g.*, by activating the command to discard a virtual playing card). (Cooperstock, ¶96.) As explained below, the discard gesture is consistent with the '806 patent's description of control

gesture, as well as both parties' proposed constructions in the pending litigation.

The “**control gesture**” in Grant ’499 also “**includes an initial portion, a first intermediate portion, and an ending portion.**” As explained, the “**control gesture**” in Grant ’499 includes “**an initial portion,**” *i.e.*, the portion of the discard gesture in which the user initiates contact with a virtual playing card, “**a first intermediate portion,**” *i.e.*, the portion of the discard gesture in which the user begins dragging the playing card in the direction of the edge of the screen, and “**an ending portion**” *i.e.*, the portion of the discard gesture in which the user continues dragging until the card reaches the edge of the screen. (Cooperstock, ¶97.)

The discard gesture in Grant ’499 is also consistent with the description of the claimed “**control gesture**” provided in the written description of the ’806 patent. The ’806 patent explains that the claimed “**initial portion**” may include “initiating contact with the touch-sensitive surface at one or more locations,” which can specify “a pressure with which contact is initiated,” among other factors. (’806, 7:49-57.) This is precisely what occurs in Grant ’499 when the user initiates contact with the virtual playing card, as discussed. (Cooperstock, ¶¶95, 97.)

The ’806 patent further explains that the claimed “**first intermediate portion**” may include “motioning in a specific direction,” among other actions. (’806, 7:65-8:5.) And the claimed “**ending portion**” can also include, according to

the '806 patent, “motioning in a specific direction,” as well as “contacting the touch-sensitive surface at one or more additional locations.” ('806, 8:5-11.) This is precisely what occurs in Grant '499 when the user begins dragging the virtual playing card toward the edge of the screen (“**first intermediate portion**”) and then continues dragging the card until it reaches the edge of the screen (“**ending portion**”).³ (Cooperstock, ¶¶95, 97.)

Petitioner notes that the selection and dragging of a virtual playing card in Grant '499 can be used to perform another function other than discarding the card, such as rearranging the cards in the user's hand. (Grant '499, ¶0063.) But this does not preclude the discard gesture from qualifying as a “**control gesture**” under the '806 patent because nothing in the patent precludes a control gesture from having

³ Petitioner observes that the '806 patent does not require that the “**ending portion**” of a control gesture actually include ceasing contact with a touch-sensitive display. The '806 patent identifies “ending contact at one or more locations on the touch-sensitive surface” as a mere example of an ending portion, and as explained in the text, also identifies “motioning in a specific direction” as another example of an ending portion. ('806, 8:5-11.) The ending portion of the discard gesture in Grant '499 includes motioning until reaching the edge of the screen.

some portions that are similar to or overlap with portions used other control gestures. ('806, 7:41-45 (“The gesture module **24** is configured to receive one or more output signals generated by user interface **14** indicating control inputs received from user **12**. Based on the received one or more output signals, gesture module **24** monitors performance of *one or more control* gestures by user **12**.”).) The discard gesture and the rearrange gesture in Grant '499 are distinct control gestures notwithstanding that they share some similarities, because the discard gesture serves a different function and has distinct characteristics. (Grant '499, ¶¶0063-0064.) The discard gesture, for example, has distinct intermediate and ending portions that require the user to begin and continue dragging the playing card toward the edge of the screen, which are not part of the rearrange gesture. (*Id.*)

Finally, as noted in **Part V** above, the term “**control gesture**” is subject to a dispute in the pending litigation, but that dispute is immaterial here because Grant '499 satisfies all of the proposed constructions. Patent Owner contends that “**control gesture**” should be given its plain and ordinary meaning, or alternatively, construed as “*a user manipulation having separate portions that must be performed in a specific order and/or with a specific timing.*” (EX1006.) This construction is satisfied by Grant '499 for the reasons provided above; the discard gesture is a user manipulation having three separate portions that must be performed in at least a

specific order beginning with selection of the virtual playing card, and continuing through the user initiating and then continuing movement of the playing card to the edge of the screen, in order for the card to be discarded. (Grant '499, ¶0064.)

Petitioner has proposed a construction of “**control gesture**” in the pending litigation that comes directly from the written description in the '806 patent ('806, 5:7-16), *i.e.*, “*a gesture made by a user that is a single and discrete control input having separate portions. The separate portions must be performed in specific order and/or with a specific timing to effectively achieve the control input associated with the ‘control gesture.’ Performance of the separate portions, on their own, will not result in the control input associated with the ‘control gesture’ as a whole (e.g., a ‘control gesture’ is not merely a combination of other gestures, each associated with its own control input).*” Grant '499 satisfies this definition.

The discard gesture is a “*single and discrete control input having discrete portions.*” With respect to “*control input,*” as explained for **Ground 1**, the '806 patent states that a touch sensitive surface is an example of a “control input device.” ('806, 5:29- 38.) The '806 patent further explains that a control input device enables the system to receive a control input from the user. ('806, 7:41-43 (“The gesture module **24** is configured to receive one or more output signals generated by user interface **14** indicating control inputs received from user **12**.”).) Thus, as applied to

Grant '499, touch screen **102** is a device that enables a user to enter a control input in the form of a gesture in order to control the system. (Grant '499, ¶0019, Fig. 2.) The discard gesture is thus a control input because it enables the user to control a virtual card game by discarding a card. (Grant '499, ¶¶0063-0064; Cooperstock, ¶103.) The discard gesture in Grant '499 is also “*a single and discrete control input*” that can only occur after completing each of its three discrete portions, *i.e.*, “**an initial portion**,” “**a first intermediate portion**,” and “**an ending portion**” as described. (Cooperstock, ¶¶95, 97, 104.) Next, each of these portions “*must be performed in specific order and/or with a specific timing to effectively achieve the control input associated with the ‘control gesture,’*” because as noted, they must be performed at least in a specific order.

Finally and for the same reasons, “[p]erformance of the separate portions, on their own, will not result in the control input associated with the ‘control gesture’ as a whole (e.g., a ‘control gesture’ is not merely a combination of other gestures, each associated with its own control input),” because discarding the virtual playing card only occurs in response to the user completing the discard gesture with all three of its portions, including an ending portion in which the card makes contact with the edge of the screen. (Grant '499, ¶0063.) For example, if the user simply selected a virtual playing card and then released it, or selected the playing card and dragged it

but not far enough to reach the edge of the screen, the discard gesture will not have been completed and the card will not be discarded. (Cooperstock, ¶105.) Thus, the discard gesture in Grant '499's is also "*not merely a combination of other gestures, each associated with its own control input.*" The discard gesture in Grant '499 is instead a single control gesture having three required portions, each of which must be completed in sequence for a card to be discarded.

Finally, Petitioner notes that the discard gesture in Grant '499 closely resembles exemplary gestures in the '806 patent. In one example, "user **12** may engage an area on user interface **14** that corresponds to ammunition and 'drag' the ammunition to section **34b** to reload piece of virtual equipment **32**." ('806, 13:44-47.) In another example, a user can touch a target on a screen and trace a path from the target on the screen in order to initiate an attack on the target:

The target at which a ranged attack is directed and/or the path of a projectile emitted as part of a ranged attack may be determined based on a control gesture. For example, if user interface includes a touch screen, the user performing a control gesture may contact a portion of the touch screen on which the target of the ranged attack is displayed (e.g., as part of the control gesture). Similarly, the user may trace on the touch screen a path of a projectile emitted during a ranged attack. The tracing of the path of the projectile may form at least part of the control gesture initiating the attack. The target and/or the path indicated by the control gesture may impact the determination of the corresponding

haptic stimulation determined by stimulation module **26**.

(’806, 12:4-16.) Although these examples involve combat-oriented games rather than games involving playing cards, they nevertheless disclose control gestures that are substantially similar to Grant ’499 in that they also involve selection and movement of items using a touch sensitive display. (Cooperstock, ¶107.)

Finally, Grant ’499 discloses and renders obvious “**monitoring, on the one or more processors,**” *e.g.*, processor **110**, the performance of this control gesture. This “**monitoring**” is evident in the fact that the system provides haptic feedback to the user as the user performs each portion of the discard gesture, including feedback that the motion was completed successfully. (Grant ’499, ¶0064.) As noted earlier, Grant ’499 teaches that processor **110** executes the associated game application and program code (Grant ’499, ¶¶0018, 0024, 0056-0057) – and thus, a person of ordinary skill in the art would have understood and found it obvious the “**monitoring**” would have been performed by processor **110**. (Cooperstock, ¶98; *see also* Grant ’499, ¶0005 (“processor configured to: ...receive an input signal from the touch-sensitive input device associated with the contact [from a user]; determine an interaction between the contact and the image...”).)

- (c) “determining, on the one or more processors, haptic stimulation associated with performance of the control gesture to be generated for the user; and” (Limitation 11[c])
- (d) “wherein the haptic stimulation includes a first stimulation determined responsive to performance of the initial portion of the control gesture, and a second stimulation that is different from the first stimulation and is determined responsive to performance of the first intermediate portion of the control gesture; and” (Limitation 11[d])

Because of the close relationship between limitation 11[c] and 11[d],
Petitioner will address them together.

The determined “**haptic stimulation**” in Grant ’499 corresponds to the haptic stimulation provided to the user in response to performance of the three portions of the discard gesture as described above. For the “**initial portion**,” according to Grant ’499, “a user may touch the nine of diamonds **210c**, and feel a light pop (e.g. a low magnitude, high frequency, short duration effect) to indicate that the card has been contacted.” (Grant ’499, ¶0064.) This corresponds to the “**first stimulation**,” as recited in limitation 11[d].

For the “**first intermediate portion**,” as explained in Grant ’499, “[w]hile the user is dragging the card, the system **100** may output a low magnitude, low frequency vibration to provide the tactile sensation of a card sliding across a felt surface.” (Grant ’499, ¶0064.) This corresponds to the claimed “**second stimulation**.” A

person of ordinary skill in the art would have understood and found it obvious that this second stimulation is “**different from the first stimulation**,” as claimed, because it differs in at least its frequency and duration and is intended to convey a different tactile sensation. (Cooperstock, ¶109.)

And although not required by claim 11, Grant ’499 discloses a third haptic stimulation. In particular, Grant ’499 explains that “[w]hen the card reaches the edge of the screen, the system **100** may generate a strong pop (e.g. a high magnitude, high frequency, short duration) effect to indicate the card has been discarded.” (Grant, ¶0064.) This is separately discussed for claim 12 below.

A person of ordinary skill in the art would have understood and found it obvious that, in order for the system of Grant ’499 to generate the haptic stimulation, the system would have first “**determine[d], on the one or more processors**” the haptic stimulation to generate. (Cooperstock, ¶111.) Grant ’499 explains, for example, that its “processor [is] configured to: ...determine an interaction between the contact [from a user] and the image [associated with a casino game]; and generate an actuator signal associated with the interaction, the actuator signal configured to cause the actuator to generate a haptic effect.” (Grant ’499, ¶0005; *see also id.*, ¶¶0026 (“generate an actuator signal associated with the interaction”), 0055 (processor “determines an interaction... [and] generates and transmits an actuator

signal associated with the interaction”).) Because the system in Grant ’499 is capable of generating various types of haptic feedback, in order for the system to generate the correct feedback for a particular situation, it would have been obvious that the system (using its processor) would have to determine the appropriate haptic feedback associated with particular user contact. (Cooperstock, ¶111.)

(e) **“generating, with the haptic device, the determined stimulation during performance of the control gesture.” (Limitation 11[e])**

Limitation 11[e] was largely covered by the discussion above. As explained in the discussion of the preamble, the **“haptic device”** in Grant ’499 corresponds to an actuator, such as actuator **103**. (Cooperstock, ¶92.) As noted, Grant ’499 explains that “actuator **103**...may be commanded by the computer **101** to output haptic effects.” (Grant ’499, ¶0020.) For example, “when the player touches a card **230a** to be discard, the actuator may generate a haptic effect, such as a short duration high frequency vibration (which may be referred to as a ‘pop’), to indicate that the card **230a** has been selected.” (Grant ’499, ¶0020; *see also id.*, ¶0026 (“Computer **310** is further configured to generate an actuator signal associated with the interaction, the actuator signal configured to cause the actuator **330** to generate a haptic effect.”).)

And as discussed previously, Grant ’499 explains that the haptic stimulation associated with the discard gesture is generated **“during performance of the**

control gesture.” (Grant ’499, ¶0064.) First, “a user may touch the nine of diamonds 210c, and feel a light pop (e.g. a low magnitude, high frequency, short duration effect).” (Grant ’499, ¶0064.) Next, “[w]hile the user is dragging the card, the system 100 may output a low magnitude, low frequency vibration to provide the tactile sensation of a card sliding across a felt surface.” (Grant ’499, ¶0064.) Then, “[w]hen the card reaches the edge of the screen, the system 100 may generate a strong pop (e.g. a high magnitude, high frequency, short duration) effect to indicate the card has been discarded.” (Grant ’499, ¶0064.)

2. Claim 12: “The method of claim 11, wherein the haptic stimulation associated with the control gesture includes a third stimulation different from the first stimulation and the second stimulation that is determined responsive to performance of the ending portion of the control gesture.”

As explained in the analysis of claim 11 above, Grant ’499’s discard gesture includes a **“third stimulation”** responsive to the **“ending portion”** – for example, “a strong pop (e.g. a high magnitude, high frequency, short duration) effect to indicate the card has been discarded.” (Grant ’499, ¶0064.) This **“third stimulation,”** as explained, is **“different from the first stimulation and the second stimulation.”** In the exemplary embodiment, it is a “strong pop,” whereas the first and second stimulations were a “light pop (e.g. a low magnitude, high frequency, short duration effect)” and a “low magnitude, low frequency vibration,”

respectively. (Grant '499, ¶0064.) And, as with the stimulations associated with the initial and first intermediate portions, Grant '499's "**third stimulation**" is "**determined responsive to performance of the ending portion of the control gesture**" – i.e., in response to the user contacting the edge of the screen with the playing card. (Grant '499, ¶0064 ("When the card reaches the edge of the screen, the system **100** may generate a strong pop (e.g. a high magnitude, high frequency, short duration) effect to indicate the card has been discarded.").)

3. Claim 15: "The method of claim 11, wherein the command input associated with the control gesture is a single, discrete command."

As explained in the discussion accompanying limitation 11[b], "**the command input associated with the control gesture**" in Grant '499 corresponds to an instruction to the system to discard a playing card.

Grant '499's instruction to discard a playing card associated with the discard gesture "**is a single, discrete command.**" Grant '499 makes clear that the instruction to discard a playing card is a distinct command, separate from other commands, and nothing in Grant '499 discloses or suggests that performing the discard gesture will result in another, or an additional, command. (Cooperstock, ¶117.) For example, Grant '499 explains that, once the discard gesture is completed, to input additional commands, other actions can be performed. (Grant '499, ¶0064

(“The user may then drag another card to be discarded, or select the draw cards button **233** to receive a card to replace the discarded card **210c**.”).)

Moreover, as explained for limitation 11**[b]** above, the discard gesture is a single discrete command having three portions. A playing card is discarded, as explained, only after the user completes the discard gesture with all three of its portions, including an ending portion in which the card makes contact with the edge of the screen. For example, if the user simply selected a virtual playing card and then released it, or selected the playing card and dragged it but not far enough to reach the edge of the screen, the discard gesture will not have been completed and the card will not be discarded. (Cooperstock, ¶105.)

VII. CONCLUSION

Petitioner respectfully requests institution of review on the challenged claims.

Dated: May 25, 2023

Respectfully submitted,

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Petition for *Inter Partes* Review of
U.S. Patent No. 8,469,806 B2

CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this petition complies with the type-volume limits of 37 C.F.R. § 42.24(a)(1)(i) because it contains 12,357 words, according to the word-processing system used to prepare this petition, excluding the parts of this petition that are exempted by 37 C.F.R. § 42.24(a) (including the table of contents, a table of authorities, mandatory notices, a certificate of service or this certificate word count, appendix of exhibits, and claim listings).

DATED: May 25, 2023

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Petition for *Inter Partes* Review of
U.S. Patent No. 8,469,806 B2

CERTIFICATE OF SERVICE

I hereby certify, pursuant to 37 C.F.R. Sections 42.6 and 42.105, that a complete copy of the attached **PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 8,469,806 B2**, including all exhibits (**Nos. 1001-1011**) and related documents, are being served via Federal Express on the 25th day of May, 2023, the same day as the filing of the above-identified document in the United States Patent and Trademark Office/Patent Trial and Appeal Board, upon Patent Owner by serving the correspondence address of record with the USPTO as follows:

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