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**UTILITY
PATENT APPLICATION
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(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	105804.00192
First Inventor	David BIRNBAUM et al.
Title	CONTEXT-DEPENDENT...SYSTEM
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17)
2. ☐ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 29]
Both the claims and abstract must start on a new page
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**Attorney Docket No.
105804.00192; IMM399**

UNITED STATES PATENT APPLICATION
FOR

CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

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CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

FIELD:

[0001] One embodiment is directed generally to a device, and more particularly, to a device that produces haptic effects.

BACKGROUND:

[0002] Haptics is a tactile and force feedback technology that takes advantage of a user's sense of touch by applying haptic feedback effects (i.e., "haptic effects"), such as forces, vibrations, and motions, to the user. A device, such as a mobile device, touchscreen device, and personal computer, can be configured to generate confirmation haptic effects in response to a user's interaction with the device, as a confirmation that the user has successfully interacted with the device. For example, when a user interacts with the device using, for example, a button, touchscreen, lever, joystick, wheel, or some other control, a haptic signal can be generated, where the haptic signal

causes the device to produce an appropriate confirmation haptic effect. The user can experience the confirmation haptic effect, and can be made aware of the successful interaction with the device.

SUMMARY:

[0003] One embodiment is a haptic confirmation system that produces a confirmation haptic effect. The system receives context metadata associated with a user interaction of a user interface element. The system further maps the received context metadata to one or more haptic parameters. The system further generates a haptic signal based at least in part on the one or more haptic parameters. The system further sends the haptic signal to an actuator to generate the confirmation haptic effect.

BRIEF DESCRIPTION OF THE DRAWINGS:

[0004] Further embodiments, details, advantages, and modifications will become apparent from the following detailed description of the preferred embodiments, which is to be taken in conjunction with the accompanying drawings.

[0005] Fig. 1 illustrates a block diagram of a haptic confirmation system in accordance with one embodiment of the invention.

[0006] Fig. 2 illustrates a mapping of context metadata to one or more haptic parameters, according to an embodiment of the invention.

[0007] Fig. 3 illustrates a haptic parameter slider user interface, according to an embodiment of the invention.

[0008] Fig. 4 illustrates a flow diagram of the functionality of a haptic confirmation

module, according to one embodiment of the invention.

DETAILED DESCRIPTION:

[0009] One embodiment is a haptic confirmation system that can produce a confirmation haptic effect in response to an interaction with a user interface element of a device, such as a button displayed within a touchscreen or a keyboard, where the confirmation haptic effect can be customized based on context metadata, or some other metadata, associated with the interaction of the user interface element. Such context metadata can include data indicating one or more physical properties of the user interface element, such as the size or shape of the user interface element. Context metadata can also include data indicating functionality of the user interface element.

[0010] For example, context metadata can include data indicating whether the user interface element initiates the creation of an email message or a text message. Context metadata can also include data indicating a history of interaction with the user interface element. For example, context metadata can include data indicating a speed at which a user either types on the user interface element (where the user interface element is a physical element, such as a keyboard), or touches the user interface element (where the user interface element is a virtual element that can be displayed within a touchscreen of the device, such as a button). Context metadata can also include sensor input data, such as a detected force produced by a touch applied to the user interface element by the user. The customization of the confirmation haptic effect can be a modification of one or more haptic parameters, such as, but not limited to, magnitude, duration, frequency, and waveform. Thus, the haptic confirmation system

can generate multiple possible confirmation haptic events for a single user interface element, where each confirmation haptic event is individually customized based on context metadata.

[0011] Fig. 1 illustrates a block diagram of a haptic confirmation system 10 in accordance with one embodiment of the invention. In one embodiment, system 10 is part of a device, and system 10 provides a haptic confirmation functionality for the device. Although shown as a single system, the functionality of system 10 can be implemented as a distributed system. System 10 includes a bus 12 or other communication mechanism for communicating information, and a processor 22 coupled to bus 12 for processing information. Processor 22 may be any type of general or specific purpose processor. System 10 further includes a memory 14 for storing information and instructions to be executed by processor 22. Memory 14 can be comprised of any combination of random access memory (“RAM”), read only memory (“ROM”), static storage such as a magnetic or optical disk, or any other type of computer-readable medium.

[0012] A computer-readable medium may be any available medium that can be accessed by processor 22 and may include both a volatile and nonvolatile medium, a removable and non-removable medium, a communication medium, and a storage medium. A communication medium may include computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism, and may include any other form of an information delivery medium known in the art. A storage medium may include RAM, flash memory, ROM, erasable programmable read-only memory (“EPROM”), electrically erasable

programmable read-only memory (“EEPROM”), registers, hard disk, a removable disk, a compact disk read-only memory (“CD-ROM”), or any other form of a storage medium known in the art.

[0013] In one embodiment, memory 14 stores software modules that provide functionality when executed by processor 22. The modules include an operating system 15 that provides operating system functionality for system 10, as well as the rest of a mobile device in one embodiment. The modules further include a haptic confirmation module 16 that produces a confirmation haptic effect, as disclosed in more detail below. In certain embodiments, haptic confirmation module 16 can comprise a plurality of modules, where each individual module provides specific individual functionality for producing a confirmation haptic effect. System 10 will typically include one or more additional application modules 18 to include additional functionality, such as the Integrator Haptic Development Platform by Immersion Corporation.

[0014] System 10, in embodiments that transmit and/or receive data from remote sources, further includes a communication device 20, such as a network interface card, to provide mobile wireless network communication, such as infrared, radio, Wi-Fi, or cellular network communication. In other embodiments, communication device 20 provides a wired network connection, such as an Ethernet connection or a modem.

[0015] Processor 22 is further coupled via bus 12 to a display 24, such as a Liquid Crystal Display (“LCD”), for displaying a graphical representation or user interface to a user. The display 24 may be a touch-sensitive input device, such as a touchscreen, configured to send and receive signals from processor 22, and may be a multi-touch touchscreen. Processor 22 may be further coupled to a keyboard or cursor control 28

that allows a user to interact with system 10, such as a mouse or a stylus.

[0016] System 10, in one embodiment, further includes an actuator 26. Processor 22 may transmit a haptic signal associated with a generated haptic effect to actuator 26, which in turn outputs haptic effects such as vibrotactile haptic effects. Actuator 26 includes an actuator drive circuit. Actuator 26 may be, for example, an electric motor, an electro-magnetic actuator, a voice coil, a shape memory alloy, an electro-active polymer, a solenoid, an eccentric rotating mass motor (“ERM”), a linear resonant actuator (“LRA”), a piezoelectric actuator, a high bandwidth actuator, an electroactive polymer (“EAP”) actuator, an electrostatic friction display, or an ultrasonic vibration generator. In alternate embodiments, system 10 can include one or more additional actuators, in addition to actuator 26 (not illustrated in Fig. 1). In other embodiments, a separate device from system 10 includes an actuator that generates the haptic effects, and system 10 sends generated haptic effect signals to that device through communication device 20.

[0017] System 10, in one embodiment, further includes a sensor 30. Sensor 30 can be configured to detect a form of energy, or other physical property, such as, but not limited to, acceleration, bio signals, distance, flow, force/pressure/strain/bend, humidity, linear position, orientation/inclination, radio frequency, rotary position, rotary velocity, manipulation of a switch, temperature, vibration, and visible light intensity. Sensor 30 can further be configured to convert the detected energy, or other physical property, into an electrical signal, or any signal that represents virtual sensor information. Sensor 30 can be any device, such as, but not limited to, an accelerometer, an electrocardiogram, an electroencephalogram, an electromyograph, an electrooculogram, an

electropalatograph, a galvanic skin response sensor, a capacitive sensor, a hall effect sensor, an infrared sensor, an ultrasonic sensor, a pressure sensor, a fiber optic sensor, a flexion sensor (or bend sensor), a force-sensitive resistor, a load cell, a LuSense CPS² 155, a miniature pressure transducer, a piezo sensor, a strain gage, a hygrometer, a linear position touch sensor, a linear potentiometer (or slider), a linear variable differential transformer, an accelerometer, a compass, an inclinometer, a magnetic tag (or radio frequency identification tag), a rotary encoder, a rotary potentiometer, a gyroscope, an on-off switch, a temperature sensor (such as a thermocouple, resistance temperature detector, thermistor, and temperature-transducing integrated circuit), microphone, photometer, altimeter, thermometer, bio monitor, or a light-dependent resistor.

[0018] Fig. 2 illustrates a mapping of context metadata to one or more haptic parameters, according to an embodiment of the invention. As previously described, a device can include a user interface element, where a user interface element can be a physical or virtual element of the device that the user can interact with. An example of a physical user interface element is a keyboard, or cursor control, such as a mouse. An example of a virtual user interface element is an icon displayed within a touchscreen, such as a button, slider, scroller, switch, check box, and radio box. As also previously described, a user can interact with the user interface element, where an interaction with the user interface element can include a physical manipulation of the user interface element. An example of a physical manipulation of the user interface element is touching the user interface element (such as touching a keyboard or touching a touchscreen where a button, or some other type of user interface element, is displayed).

[0019] The interaction with the user interface element can involve the creation of one or more types of context metadata (illustrated in Fig. 2 as context metadata 210), where context metadata can be any data associated with a context of the interaction with the user interface element. The context metadata can be used to generate a confirmation haptic effect in response to the interaction with the user interface element. As is described below in greater detail, a confirmation haptic effect can be a haptic feedback effect, such as a force, vibration, and motion, which can be generated in response to a user interaction with a user interface element, in order to confirm the interaction with the user interface element.

[0020] An example of context metadata is data indicating one or more physical properties of the user interface element (illustrated in Fig. 2 as physical properties 211). The one or more physical properties can include a size or shape of the user interface element, where the size of the user interface element can comprise one or more size parameters, and the shape of the user interface element can comprise one or more shape parameters. For example, the one or more physical properties can include the size of a button displayed within a touchscreen of a device (i.e., one or more size parameters of the button). In this example, a confirmation haptic effect can be generated based on the one or more size parameters of the button. Thus, a small button can feel different (e.g., “lighter”) to a user than a big button. In another example, the one or more physical properties can include the shape of the button (i.e., one or more shape parameters of the button). In another example, the one or more physical properties can include both the size and shape of the button (i.e., one or more size parameters of the button and one or more shape parameters of the button). Thus, both

a size and shape of a button (or other user interface element) that a user interfaces with can be used to determine a confirmation haptic effect that is generated.

[0021] Another example of context metadata is data indicating functionality of the user interface element (illustrated in Fig. 2 as functionality 212). The functionality can be functionality associated with either the user interface element or the interaction with the user interface element. For example, the functionality can be the inputting of a character, or a word, within the user interface element. As another example, the functionality can be the creation of a text message, or email message, that can be initiated by the user interface element upon interaction with the user interface element. Thus, the functionality of the user interface element can be used to determine a confirmation haptic effect that is generated. For example, the inputting of a character within a field displayed within a touchscreen can generate a confirmation haptic effect that is different from a confirmation haptic effect that is generated when a word is input within the field. As another example, the pressing of a button displayed within a touchscreen in order to create a text message can cause a confirmation haptic effect to be generated. However, the same pressing of the button displayed within the touchscreen to create an email message can cause a different confirmation haptic effect to be generated.

[0022] Another example of context metadata is data indicating history of the user interface element (illustrated in Fig. 2 as history 213). The history can be history associated with one or more previous interactions with the user interface element. For example, the history of a user interface element (such as a keyboard or a button displayed within a touchscreen) can be a typing speed (i.e., a speed at which a user

either types on a keyboard or touches a button displayed within the touchscreen). As an example, a confirmation haptic effect that feels desirable at a slow typing speed may feel undesirable at a fast typing speed. One reason for this may be because an actuator that generates the confirmation haptic effect may not be capable of generating cascading confirmation haptic effects at a certain speed because the duration of each confirmation haptic effect may be longer than the duration between each keystroke. Because of this, the confirmation haptic effects can blend into each other, and generate a “mushy” haptic experience. Another reason for this may be that a magnitude of the initial confirmation haptic effect may be so strong that it overpowers one or more weaker confirmation haptic effects that are subsequently generated. Thus, the typing speed can be used to automatically scale a magnitude, duration, or other parameter of a confirmation haptic effect to avoid having a plurality of confirmation haptic effects blend into each other or cause other undesirable results. The typing speed can be determined after a plurality of interactions with the user interface element. Thus, the modification of the confirmation haptic effect can occur as soon as soon as a change in typing speed is identified (i.e., after the plurality of interactions).

[0023] Another example of context metadata is sensor input data (illustrated in Fig. 2 as sensor input data 214). As previously described, a sensor can produce sensor input data associated with an interaction with the user interface element. For example, a sensor can generate sensor input data associated with a pressure produced by a user touching a user interface element (such as a keyboard or a button displayed within a touchscreen). Based on the pressure, a corresponding confirmation haptic effect can be generated. For example, as the pressure is increased (i.e., the user touches the

user interface element harder), the magnitude of the confirmation haptic effect can increase (or decrease). As another example, a sensor can generate input data associated with an acceleration of a device that can indicate that the user is engaging in a physical activity, such as walking or running. As yet another example, a sensor can generate input data associated with sound produced by a user's environment. Based on the sound, it can be determined that the user's environment is noisy, and that the magnitude (or amplitude or intensity) of the confirmation haptic effect should be increased. As another example, a sensor can generate input data which is represented by information or signals that are created from processing data such as still images, video, or sounds. For example, a user interface element that is a virtual racing car that is displayed within a user interface can cause the confirmation haptic effect to be modified based on the car's virtual velocity, how close the car is to the camera viewing angle, or the size of the car.

[0024] Context metadata can also be any other kind of context metadata (illustrated in Fig. 2 as other context metadata 215). This can be any kind of data that is associated with an interaction with a user interface element. In certain embodiments, software stored in memory or another computer-readable or tangible medium, and executed by a processor, can generate one or more of the aforementioned types of context metadata. Further, software stored in memory or another computer-readable or tangible medium, and executed by a processor, can receive and interpret the context metadata. Such software can map the context metadata (in addition, in certain embodiments, to other received input data) to one or more haptic parameters (where the mapping is illustrated in Fig. 2 as mapping 220). Such mapping is further described

below in greater detail.

[0025] According to the embodiment, in order to generate an appropriate confirmation haptic effect, where the confirmation haptic effect can confirm a user interaction with a user interface element, one or more haptic parameters can be produced (where the one or more haptic parameters are illustrated in Fig. 2 as haptic parameters 230). As previously described, a confirmation haptic effect is a haptic feedback effect, such as a force, vibration, and motion, which can be generated in response to a user interaction with a user interface element, in order to confirm the interaction with the user interface element. In certain embodiments, a confirmation haptic effect is a static haptic effect. Also, in certain embodiments, the confirmation haptic effect can be stored in, and selected from, a library of haptic effects. In certain embodiments, the library of haptic effects can be stored in a memory. A haptic parameter is a quantity of a haptic effect quality, such as magnitude, frequency, duration, amplitude (i.e., strength), waveform, or any other kind of quantifiable haptic parameter. According to the embodiment, a confirmation haptic effect can be defined, at least in part, by the one or more haptic parameters, where the one or more haptic parameters can define characteristics of the confirmation haptic effect. The one or more haptic parameters are further described below in greater detail.

[0026] In order to produce the one or more haptic parameters, as previously described, input data can be mapped to the one or more haptic parameters. More specifically, the one or more haptic parameters can be generated based on, at least in part, the input data. As part of the mapping, the context metadata can be mapped to the one or more haptic parameters (identified in Fig. 2 as context metadata mapping

221). More specifically, the one or more haptic parameters can each include a value that can be based, at least in part, on the context metadata. For example, if the context metadata (such as a size of a user interface element) is of a particular value, the one or more haptic parameters can be generated with a particular value as well. Thus, the context metadata can define, at least in part, the one or more haptic parameters.

[0027] In certain embodiments, context metadata mapping is the only mapping that is performed before a confirmation haptic effect is generated. However, in alternate embodiments, context metadata mapping can be combined with other mappings. For example, in certain embodiments, in addition to context metadata mapping, a user can perform a customized mapping (identified in Fig. 2 as user customization mapping 222). As part of the customized mapping, the one or more haptic parameters can be modified based on one or more multipliers defined by the user. More specifically, a value for the one or more haptic parameters can be modified based on the one or more multipliers defined by the user. The one or more multipliers defined by the user can be based on one or more sliders that are part of a slider user interface. A slider user interface is described below in greater detail, with respect to Fig. 3. By modifying the one or more haptic parameters, the confirmation haptic effect can be modified based on the one or more multipliers. In certain embodiments, the one or more multipliers can be globally defined for all user interface elements. In other embodiments, the one or more multipliers can be locally defined for a specific user interface element, or a specific plurality of user interface elements. In certain embodiments, the user customization mapping is performed after the context metadata mapping. In alternate embodiments, the user customization mapping is performed before the context metadata mapping. In

certain embodiments, the one or more multipliers are consistently applied to all user interface elements. In alternate embodiments, the one or more multipliers are applied to the user interface elements based on the context metadata associated with each user interface element. For example, if a multiplier is a low value, a difference in a haptic parameter (such as magnitude) between a small button and a large button can be reduced. However, if a multiplier is a high value, a difference in the haptic parameter between the small button and the large button can be increased.

[0028] In certain embodiments, in addition to context metadata mapping, and user customization mapping, one or more other mappings are performed (identified in Fig. 2 as other mapping 223). For example, theme mapping can be performed, where theme mapping includes modifying one or more haptic parameters based on a defined theme, where a theme is an installable package that includes one or more haptic effects, and a mapping of one or more haptic parameters to one or more user interface elements in order to generate the one or more haptic effects. As another example, dynamic mapping can be performed, where data (such as context metadata) from a plurality of user interface element interactions can be mapped to one or more haptic parameters. The one or more other mappings can also be any other type of mapping, where data is mapped to one or more haptic parameters.

[0029] As previously described, one or more haptic parameters can be produced (where the one or more haptic parameters are illustrated in Fig. 2 as haptic parameters 230), based on the one or more mappings. As also previously described, a haptic parameter is a quantity of a haptic effect quality. A haptic parameter can have a value associated with the haptic parameter. An example of a haptic parameter is a magnitude

haptic parameter (identified in Fig. 2 as magnitude 231), where a magnitude haptic parameter defines a magnitude value of a confirmation haptic effect. Another example of a haptic parameter is a frequency haptic parameter (identified in Fig. 2 as frequency 232), where a frequency haptic parameter defines a frequency value of the confirmation haptic effect. Yet another example of a haptic parameter is a duration haptic parameter (identified in Fig. 2 as duration 233), where a duration haptic parameter defines a duration value of the confirmation haptic effect. Yet another example of a haptic parameter is a waveform haptic parameter (identified in Fig. 2 as waveform 234), where a waveform duration haptic parameter defines a waveform value of the confirmation haptic effect. Other examples of haptic parameters include any other types of quantifiable haptic parameter that define quantifiable values of the confirmation haptic effect.

[0030] In certain embodiments, software stored in memory or another computer-readable or tangible medium, and executed by a processor, can interpret the one or more haptic parameters and generate one or more haptic signals based, at least in part, on the one or more haptic parameters. In certain embodiments, the one or more haptic parameters define one or more characteristics of the haptic signal. For example, a magnitude haptic parameter can define a magnitude of the haptic signal. As another example, a frequency haptic parameter can define a frequency of the haptic signal. As yet another example, a waveform haptic parameter can define a waveform of the haptic signal. As yet another example, a duration haptic parameter can define a duration of the haptic signal.

[0031] Further, software stored in memory or another computer-readable or tangible

medium, and executed by a processor, can send the one or more haptic signals to one or more actuators. At each actuator of the one or more actuators, the actuator can receive at least one haptic signal of the one or more haptic signals and output one or more confirmation haptic effects based on the at least one haptic signal. Thus, the at least one haptic signal can define one or more characteristics of the one or more confirmation haptic effects. In certain embodiments involving a plurality of actuators, the actuators can load share the one or more haptic signals. For example, some of the one or more haptic signals that are associated with a first set of user interface elements can be sent to a first actuator, and the other haptic signals of the one or more haptic signals that are associated with a second set of user interface elements can be sent to a second actuator. In certain embodiments involving a plurality of actuators, some actuators are mechanical actuators, and other actuators are non-mechanical actuators.

[0032] Fig. 3 illustrates a haptic parameter slider user interface, according to an embodiment of the invention. More specifically, Fig. 3 illustrates a device 300 that displays a haptic parameter slider user interface 310. In certain embodiments, device 300 includes a touchscreen, where haptic parameter slider user interface 310 is displayed within the touchscreen. As previously described, in addition to context metadata mapping, a user can perform a customized mapping. As part of the customized mapping, one or more haptic parameters can be modified based on one or more multipliers defined by the user. In certain embodiments, the one or more multipliers can be defined by one or more sliders of slider user interface 310. Thus, slider user interface 310 can control one or more multipliers used to modify one or more haptic parameters.

[0033] In the illustrated embodiment of Fig. 3, slider user interface 310 includes a single slider, slider 320. However, this is merely an example embodiment, and in other embodiments, slider user interface 310 can include a plurality of sliders. Slider 320 can be associated with a multiplier used to modify a haptic parameter. For example, slider 320 can be associated with a magnitude multiplier used to modify a magnitude haptic parameter. As another example, slider 320 can be associated with a frequency multiplier used to modify a frequency haptic parameter. As yet another example, slider 320 can be associated with a waveform multiplier used to modify a waveform haptic parameter. As yet another example, slider 320 can be associated with a duration multiplier used to modify a duration haptic parameter. In embodiments where slider user interface 310 includes a plurality of sliders, each slider can be associated with a specific multiplier used to modify a specific haptic parameter. Thus, slider 320 can control a multiplier used to modify a haptic parameter.

[0034] According to the illustrated embodiment, slider 320 includes slider control 330. Slider control 330 is an exposed user interface element that allows a user to control the multiplier associated with slider 320. By moving slider control 330 to the left or to the right of slider 320, the user can control the multiplier associated with slider 320, and thus, control the haptic parameter associated with slider 320. For example, in an embodiment where slider 320 is associated with a magnitude multiplier used to modify a magnitude haptic parameter, the user can increase or decrease the value of the magnitude haptic parameter, and thus, increase or decrease a confirmation haptic effect associated with a user interface element, by moving slider control 330.

[0035] In certain embodiments, slider 320 can globally control a multiplier used to

modify a haptic parameter all user interface elements. In other embodiments, slider 320 can locally control a multiplier used to modify a haptic parameter for a specific user interface element, or a specific plurality of user interface elements. In certain embodiments, slider 320 consistently applies the multiplier to all user interface elements. In alternate embodiments, slider 320 applies the multiplier to the user interface elements based on the context metadata associated with each user interface element. For example, if slider control 330 is set to a low value, a difference in a haptic parameter (such as magnitude) between a small user interface element and a large user interface element can be reduced. However, if slider control 330 is set to a high value, a difference in the haptic parameter between the small user interface element and the large user interface element can be increased. The functionality of slider 320 can be replicated in user interface elements other than sliders, including but not limited to, dials, wheels, spinners, buttons, radio buttons, scrollers, switches, or checkboxes. The functionality of slider 320 may also be replicated with hardware user interface elements including but not limited to physical buttons, rocker switches, physical sliders, and “softkeys” (regions on a hardware surface that, when touched, activate some software functionality).

[0036] Fig. 4 illustrates a flow diagram of the functionality of a haptic confirmation module (such as haptic confirmation module 16 of Fig. 1), according to one embodiment of the invention. In one embodiment, the functionality of Fig. 4 is implemented by software stored in memory or another computer-readable or tangible medium, and executed by a processor. In other embodiments, the functionality may be performed by hardware (e.g., through the use of an application specific integrated circuit (“ASIC”), a

programmable gate array ("PGA"), a field programmable gate array ("FPGA"), etc.), or any combination of hardware and software. Furthermore, in alternate embodiments, the functionality may be performed by hardware using analog components.

[0037] The flow begins and proceeds to 410. At 410, context metadata associated with a user interaction of a user interface element is received. As previously described, a user interface element can be a physical or virtual element of a device that the user can interact with. An example of a physical user interface element is a keyboard, or cursor control, such as a mouse. An example of a virtual user interface element is an icon displayed within a touchscreen, such as a button, slider, scroller, switch, check box, and radio box. An interaction with the user interface element can include a physical manipulation of the user interface element. An example of a physical manipulation of the user interface element is touching the user interface element (such as touching a keyboard or touching a touchscreen where a button, or some other type of user interface element, is displayed). Context metadata can be any data associated with a context of the interaction with the user interface element. Context metadata can include data indicating one or more physical properties of the user interface element. The one or more physical properties can include a size the user interface element, where the size of the user interface element can comprise one or more size parameters. The one or more physical properties can include a shape of the user interface element, where the shape of the user interface element can comprise one or more shape parameters. Context metadata can alternately include data indicating functionality of the user interface element. The functionality can include functionality associated with either the user interface element or the interaction with the user interface element.

Context metadata can alternately include data indicating history of the user interface element. The history can include history associated with one or more previous interactions with the user interface element. Context metadata can alternately include sensor input data. The sensor input data can include sensor input data associated with an interaction with the user interface element. Context metadata can alternatively include other types of context metadata. The flow proceeds to 420.

[0038] At 420, the received context data is mapped to one or more haptic parameters. A haptic parameter can be a quantity of a haptic effect quality. Examples of a haptic parameter can include a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude (i.e., strength) haptic parameter, and a waveform haptic parameter. The one or more haptic parameters can define, at least in part, a confirmation haptic effect. A confirmation haptic effect can be a haptic feedback effect, such as a force, vibration, and motion, which can be generated in response to a user interaction with a user interface element, in order to confirm the interaction with the user interface element. In certain embodiments, as a result of the mapping, the one or more haptic parameters can each include a value, based at least in part on the received context metadata. The flow proceeds to 430.

[0039] At 430, the one or more haptic parameters are modified based on user input. The user input can include one or more multipliers defined by the user. Each value included for each of the one or more haptic parameters can be based on the one or more multipliers defined by the user. By modifying the one or more haptic parameters, the confirmation haptic effect can be modified based on the one or more multipliers. In certain embodiments, the one or more multipliers can be globally defined for all user

interface elements. In other embodiments, the one or more multipliers can be locally defined for a specific user interface element, or a specific plurality of user interface elements. In certain embodiments, the user customization mapping is performed after the context metadata mapping. In alternate embodiments, the user customization mapping is performed before the context metadata mapping. The one or more multipliers defined by the user can be based on one or more sliders that are part of a slider user interface. In other embodiments, the one or more multipliers defined by the user can be based on user interface elements other than sliders, including but not limited to, dials, wheels, spinners, buttons, radio buttons, scrollers, switches, or checkboxes. In other embodiments, the one or more multipliers defined by the user can be based on hardware user interface elements including but not limited to physical buttons, rocker switches, physical sliders, and “softkeys.” In certain embodiments, the modification of the one or more haptic parameters performed at 430 is omitted. The flow proceeds to 440.

[0040] At 440, a haptic signal is generated based at least in part on the one or more haptic parameters. In certain embodiments, the one or more haptic parameters define one or more characteristics of the haptic signal. The flow proceeds to 450.

[0041] At 450, the haptic signal is sent to an actuator to generate a confirmation haptic effect. A confirmation haptic effect can be a haptic feedback effect which can be generated in response to a user interaction with a user interface element, in order to confirm the interaction with the user interface element. In certain embodiments, the actuator can receive the haptic signal and output the confirmation haptic effect based on the haptic signal. In certain embodiments, the haptic signal defines one or more

characteristics of the confirmation haptic effect. The flow then ends.

[0042] In certain embodiments involving a subsequent user interaction with the user interface element, additional (i.e., “other”) context metadata associated with the subsequent user interaction with the user interface element can be received. The other context metadata can be mapped to a new set of (i.e., “other”) one or more haptic parameters. Another haptic signal can be generated based, at least in part, on the other one or more haptic parameters. The another haptic signal can be sent to the actuator to generate another confirmation haptic effect, where the another confirmation haptic effect is different from the previously confirmation haptic effect generated by the actuator.

[0043] Thus, a haptic confirmation system is provided that generates one or more confirmation haptic effects based on context metadata associated with a user interaction with a user interface element. Thus, in contrast to known haptic systems, where confirmation haptic effects for user interface elements are generally one confirmation type per element, embodiments of the invention can provide for multiple possible confirmation haptic events for a single user interface element, based on context metadata.

[0044] The features, structures, or characteristics of the invention described throughout this specification may be combined in any suitable manner in one or more embodiments. For example, the usage of “one embodiment,” “some embodiments,” “certain embodiment,” “certain embodiments,” or other similar language, throughout this specification refers to the fact that a particular feature, structure, or characteristic described in connection with the embodiment may be included in at least one

embodiment of the present invention. Thus, appearances of the phrases “one embodiment,” “some embodiments,” “a certain embodiment,” “certain embodiments,” or other similar language, throughout this specification do not necessarily all refer to the same group of embodiments, and the described features, structures, or characteristics may be combined in any suitable manner in one or more embodiments.

[0045] One having ordinary skill in the art will readily understand that the invention as discussed above may be practiced with steps in a different order, and/or with elements in configurations which are different than those which are disclosed.

Therefore, although the invention has been described based upon these preferred embodiments, it would be apparent to those of skill in the art that certain modifications, variations, and alternative constructions would be apparent, while remaining within the spirit and scope of the invention. In order to determine the metes and bounds of the invention, therefore, reference should be made to the appended claims.

WE CLAIM:

1. A computer-readable medium having instructions stored thereon that, when executed by a processor, cause the processor to generate a confirmation haptic effect, the generating the confirmation haptic effect comprising:

receiving context metadata associated with a user interaction of a user interface element;

mapping the received context metadata to one or more haptic parameters;

generating a haptic signal based at least in part on the one or more haptic parameters; and

sending the haptic signal to an actuator to generate the confirmation haptic effect.

2. The computer-readable medium of claim 1, further comprising modifying the one or more haptic parameters based on user input.

3. The computer-readable medium of claim 2,
wherein the user input comprises one or more multipliers defined by the user;
and

wherein each value included for each of the one or more haptic parameters is based on the one or more multipliers.

4. The computer-readable medium of claim 3, wherein the one or more multipliers are globally defined for all user interface elements.

5. The computer-readable medium of claim 3, wherein the one or more multipliers are locally defined for a specific user interface element or a specific plurality of user interface elements.

6. The computer-readable medium of claim 1, wherein the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, data indicating functionality of the user interface element, data indicating history of the user interface element, or sensor input data.

7. The computer-readable medium of claim 1, wherein the one or more haptic parameters comprises at least one of: a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude haptic parameter, or a waveform haptic parameter.

8. The computer-readable medium of claim 1, wherein the user interface element comprises at least one of: a physical element of a device or a virtual element of a device.

9. The computer-readable medium of claim 8, wherein the user interface element comprises a button displayed on a touchscreen of the device.

10. The computer-readable medium of claim 1, further comprising:

receiving other context metadata associated with a subsequent user interface of the user interface element;

mapping the other context metadata to one or more other haptic parameters;

generating another haptic signal based at least in part on the one or more other haptic parameters; and

sending the another haptic signal to the actuator to generate another confirmation haptic effect, wherein the another confirmation haptic effect is different from the confirmation haptic effect.

11. A computer-implemented method for producing a confirmation haptic effect, the computer-implemented method comprising:

receiving context metadata associated with a user interaction of a user interface element;

mapping the received context metadata to one or more haptic parameters;

generating a haptic signal based at least in part on the one or more haptic parameters; and

sending the haptic signal to an actuator to generate the confirmation haptic effect.

12. The computer-implemented method of claim 11, further comprising modifying the one or more haptic parameters based on user input.

13. The computer-implemented method of claim 11, wherein the context metadata comprises at least one of: data indicating one or more physical properties of

the user interface element, data indicating functionality of the user interface element, data indicating history of the user interface element, or sensor input data.

14. The computer-implemented method of claim 11, wherein the one or more haptic parameters comprises at least one of: a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude haptic parameter, or a waveform haptic parameter.

15. The computer-implemented method of claim 11, wherein the user interface element comprises at least one of: a keyboard or a button displayed on a touchscreen of a device.

16. A haptic confirmation system comprising:
a memory configured to store a haptic confirmation module;
a processor configured to execute the haptic confirmation module stored on the memory; and
an actuator configured to output one or more confirmation haptic effects;
wherein the haptic confirmation module is configured to receive context metadata associated with a user interaction of a user interface element;
wherein the haptic confirmation module is further configured to map the received context metadata to one or more haptic parameters;
wherein the haptic confirmation module is further configured to generate a haptic signal based at least in part on the one or more haptic parameters; and

wherein the haptic confirmation module is further configured to send the haptic signal to an actuator to generate the confirmation haptic effect.

17. The haptic confirmation system of claim 16, wherein the haptic confirmation module is further configured to modify the one or more haptic parameters based on user input.

18. The haptic confirmation system of claim 16, wherein the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, data indicating functionality of the user interface element, data indicating history of the user interface element, or sensor input data.

19. The haptic confirmation system of claim 16, wherein the one or more haptic parameters comprises at least one of: a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude haptic parameter, or a waveform haptic parameter.

20. The haptic confirmation system of claim 16, wherein the user interface element comprises at least one of: a keyboard or a button displayed on a touchscreen of a device.

ABSTRACT OF THE DISCLOSURE:

A haptic confirmation system is provided that produces a confirmation haptic effect in response to a user interaction with a user interface element, where the confirmation haptic effect is based on context metadata. The context metadata is mapped to one or more haptic parameters. A haptic signal is generated based on the one or more haptic parameters. The haptic signal is sent to an actuator configured to receive the haptic signal. The actuator utilized the haptic signal to generate the confirmation haptic effect.

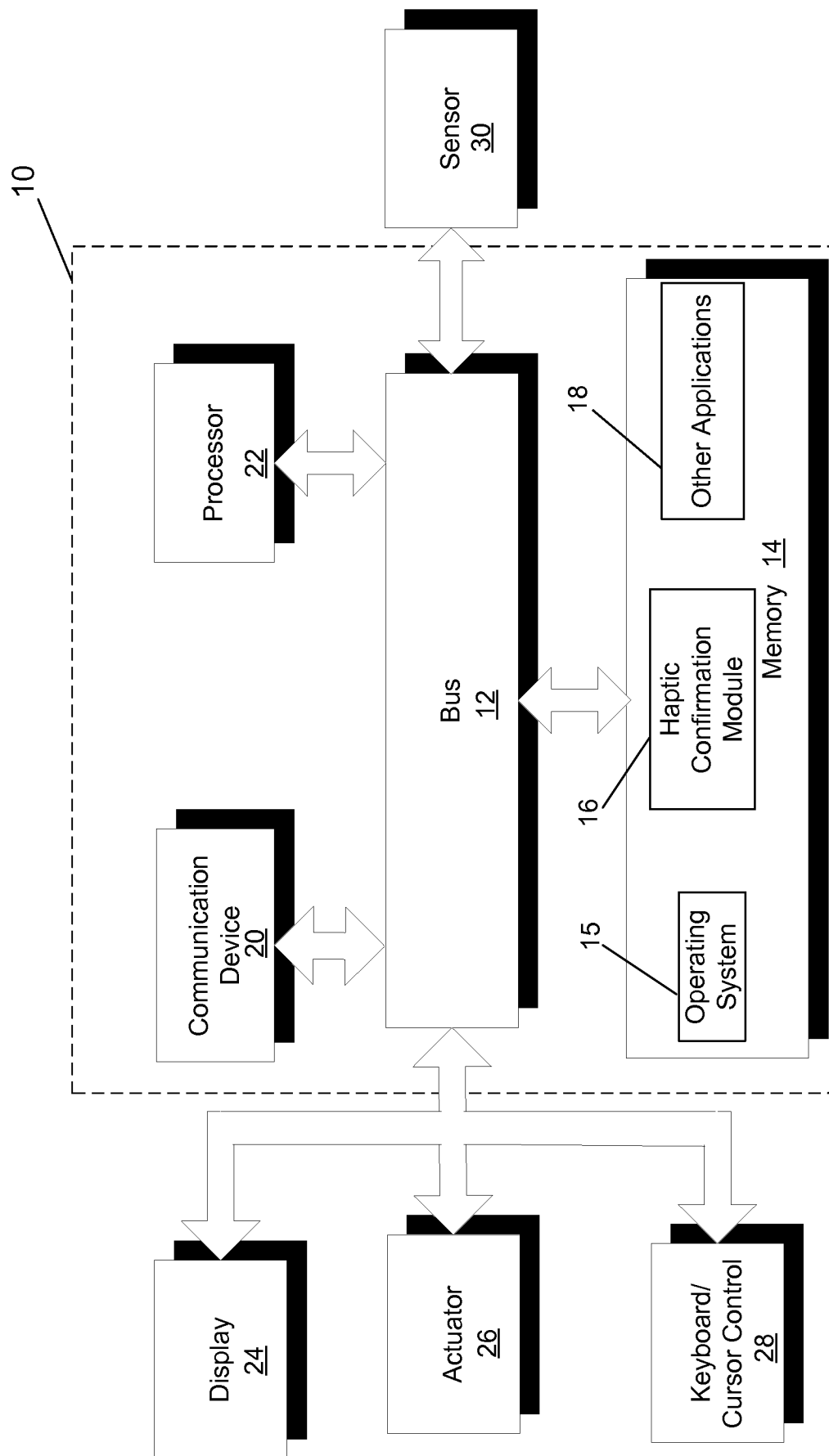


Fig. 1

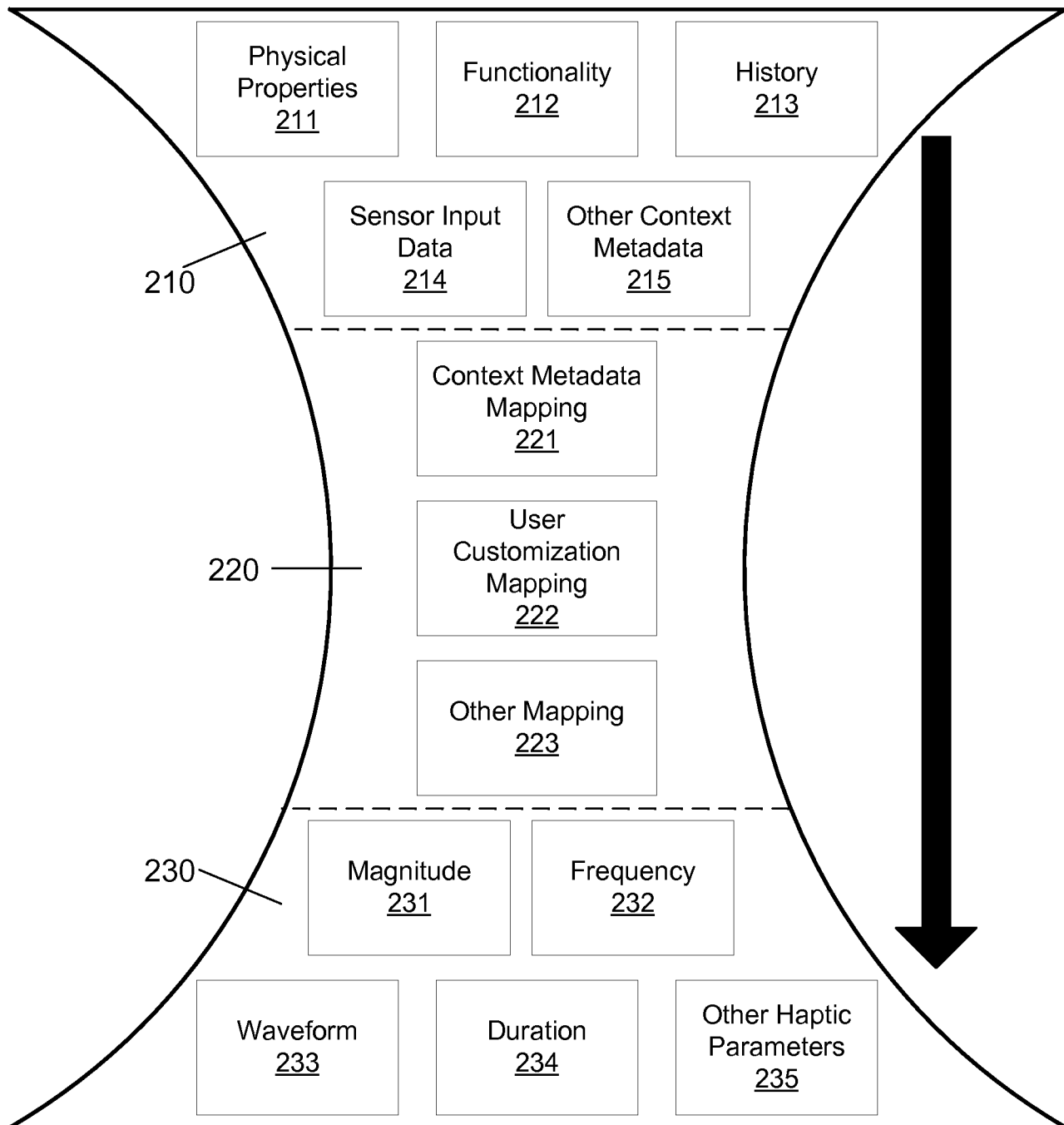


Fig. 2

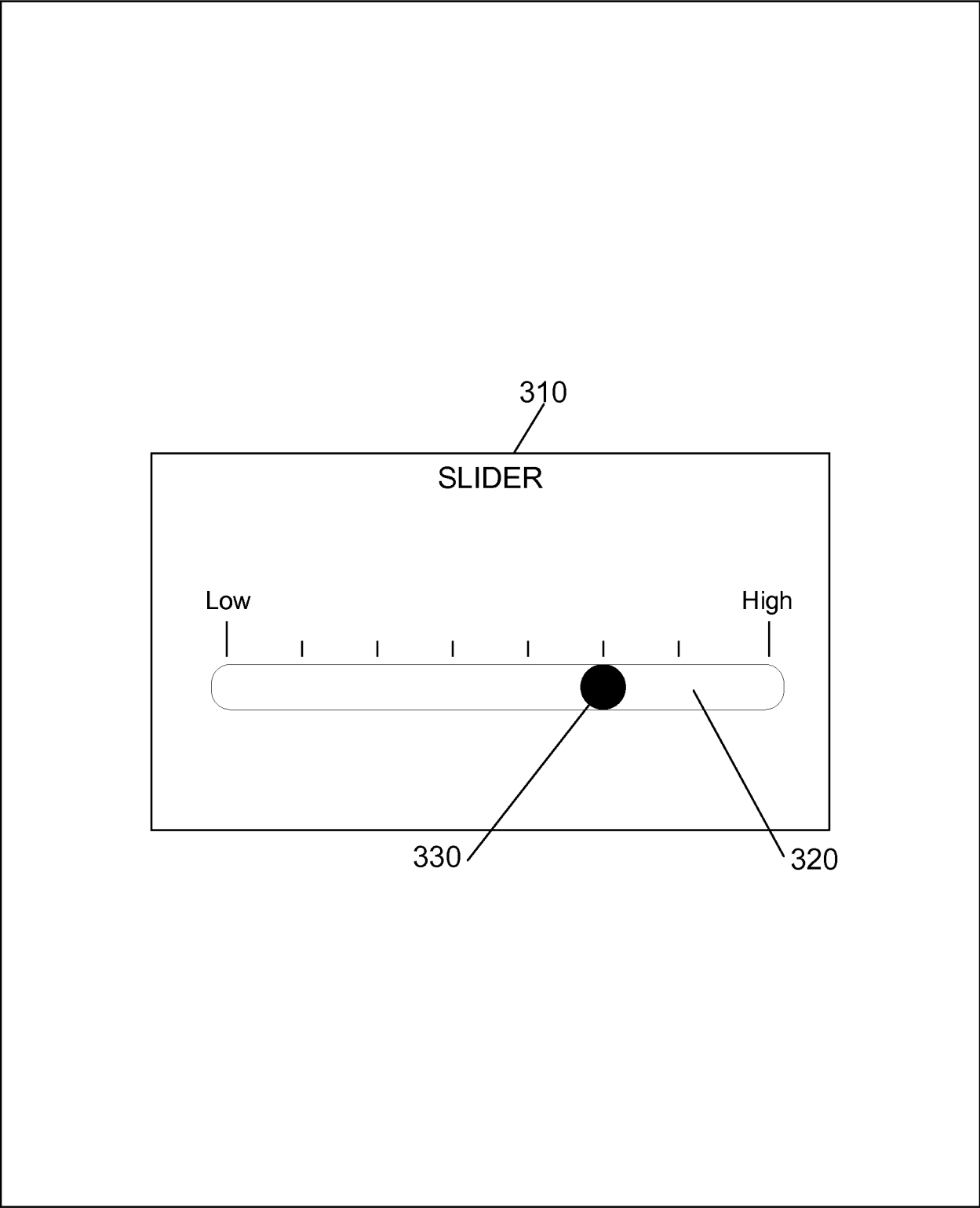


Fig. 3

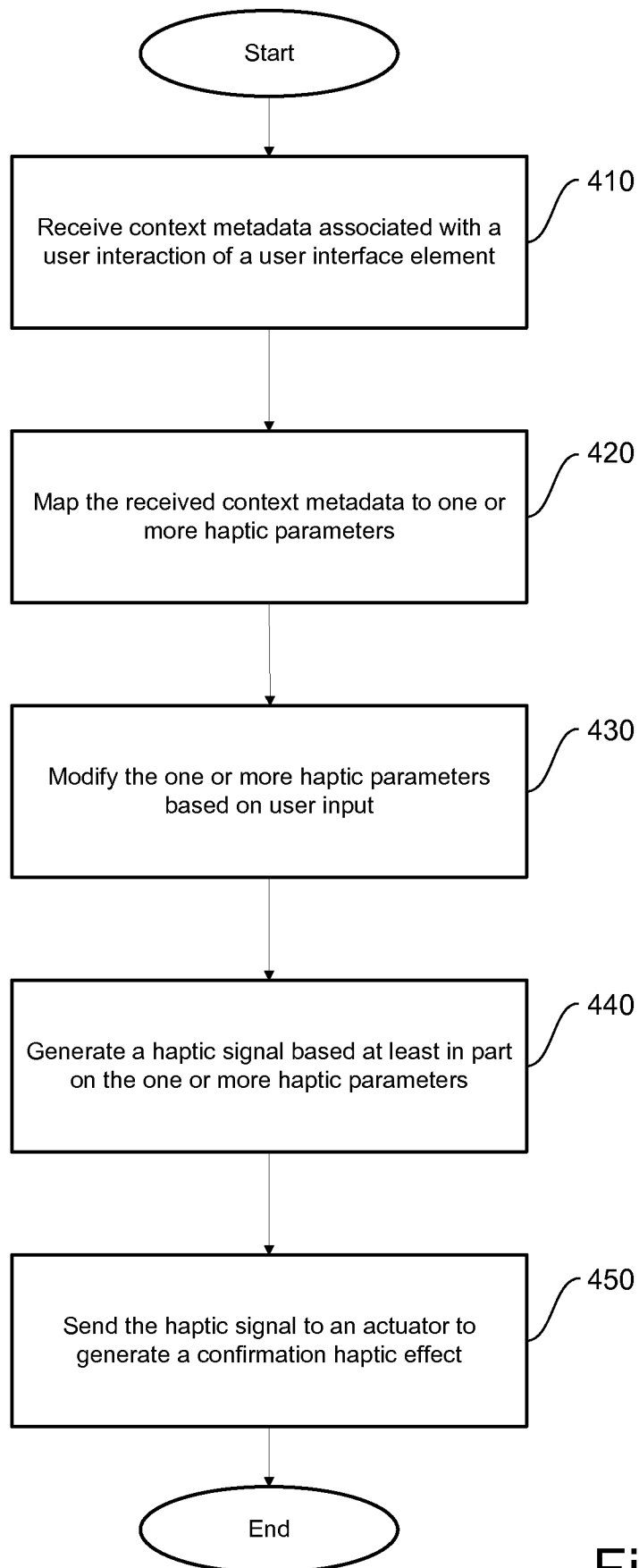


Fig. 4

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Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM
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As a below named inventor(s), I/we hereby declare that:

This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application or PCT international application number _____ filed on _____
- ☐ As amended on _____ (if applicable);

I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;

I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above. I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. Except as noted below, I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International Application which designated at least one other country than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT International Application, filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S)					
Number	Country	Filed	Date First Laid Open Or Published	Date Patented or Granted	Priority Claimed

Except as noted below, I hereby claim domestic priority benefit under 35 U.S.C. 119(e) or 120 and/or 365(c) of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)			
Application Number	Filed	Status	Priority Claimed
		pending, abandoned, patented	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I/we hereby appoint Squire Sanders (US) LLP, (to whom all communications are to be directed), and persons of that firm who are associated with USPTO Customer No.95000 individually and collectively my/our attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I/we hereby authorize them to delete from that Customer No. names of persons no longer with their firm, to add new persons of their Firm to that Customer No., and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I/we hereby declare that I/we have consented after full disclosure to be represented unless/until I/we instruct the above Firm and/or an attorney of that Firm in writing to the contrary.

Power of Attorney to Customer Number

95000

Attorney Docket No. 105804.00192; IMM399

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2012-08-24
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	Examiner Name		
	Attorney Docket Number	105804.00192	

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	4	20100073304	A1	2010-03-25	Grant et al.	
	5	20110102161	A1	2011-05-05	Heubel et al.	

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Application Number		
Filing Date		2012-08-24
First Named Inventor	David BIRNBAUM et al.	
Art Unit		
Examiner Name		
Attorney Docket Number	105804.00192	

6	20110175838	A1	2011-07-21	Higa	
7	20120019463	A1	2012-01-26	Ng et al.	
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Art Unit	
Examiner Name	
Attorney Docket Number	105804.00192

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(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2012-08-24
First Named Inventor	David BIRNBAUM et al.
Art Unit	
Examiner Name	
Attorney Docket Number	105804.00192

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Keith M. Mullervy/	Date (YYYY-MM-DD)	2012-08-24
Name/Print	Keith M. Mullervy	Registration Number	62382

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	105804.00192
		Application Number	
Title of Invention	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1					Remove
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117	☐ Party of Interest under 35 U.S.C. 118
Prefix	Given Name	Middle Name	Family Name		Suffix
	David		BIRNBAUM		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Oakland	State/Province	CA	Country of Residence i	US
Citizenship under 37 CFR 1.41(b) i		US			
Mailing Address of Applicant:					
Address 1		311 Oak Street, #327			
Address 2					
City	Oakland	State/Province	CA		
Postal Code	94607	Country i	US		
Applicant 2					Remove
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117	☐ Party of Interest under 35 U.S.C. 118
Prefix	Given Name	Middle Name	Family Name		Suffix
	Christopher	J.	ULLRICH		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Ventura	State/Province	CA	Country of Residence i	US
Citizenship under 37 CFR 1.41(b) i		CA			
Mailing Address of Applicant:					
Address 1		227 Palomares Ave.			
Address 2					
City	Ventura	State/Province	CA		
Postal Code	93003	Country i	US		
Applicant 3					Remove
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117	☐ Party of Interest under 35 U.S.C. 118
Prefix	Given Name	Middle Name	Family Name		Suffix
	Marcus	Aurelius	BOTHSA		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Santa Clara	State/Province	CA	Country of Residence i	US

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	105804.00192
		Application Number	
Title of Invention	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM		

Citizenship under 37 CFR 1.41(b) i	IN		
Mailing Address of Applicant:			
Address 1	3131 Homestead Road		
Address 2			
City	Santa Clara	State/Province	CA
Postal Code	95051	Country ⁱ	US
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.			Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	95000		
Email Address	ipgeneraltyc@squiresanders.com	Add Email	Remove Email

Application Information:

Title of the Invention	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM		
Attorney Docket Number	105804.00192	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	105804.00192
		Application Number	
Title of Invention	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM		
Customer Number	95000		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).			
			Remove
Application Number	Country ⁱ	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☐ Yes ☐ No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.			
Assignee 1			Remove
If the Assignee is an Organization check here. ☒			
Organization Name	Immersion Corporation		
Mailing Address Information:			
Address 1	30 Rio Robles		
Address 2			
City	San Jose	State/Province	CA
Country ⁱ	US	Postal Code	95134
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the Add button.			Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.
--

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		105804.00192	
		Application Number			
Title of Invention		CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM			
Signature		/Keith M. Mullervy/		Date (YYYY-MM-DD)	2012-08-24
First Name	Keith	Last Name	Mullervy	Registration Number	62382

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM			
First Named Inventor/Applicant Name:	David BIRNBAUM			
Filer:	Keith M. Mullervy/hilary shannon			
Attorney Docket Number:	105804.00192			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	380	380
Utility Search Fee	1111	1	620	620
Utility Examination Fee	1311	1	250	250
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1250

Electronic Acknowledgement Receipt

EFS ID:	13578674
Application Number:	13593626
International Application Number:	
Confirmation Number:	3179
Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM
First Named Inventor/Applicant Name:	David BIRNBAUM
Customer Number:	95000
Filer:	Keith M. Mullervy/hilary shannon
Filer Authorized By:	Keith M. Mullervy
Attorney Docket Number:	105804.00192
Receipt Date:	24-AUG-2012
Filing Date:	
Time Stamp:	10:51:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 1250
RAM confirmation Number	8580
Deposit Account	502222
Authorized User	MULLERVY,KEITH M.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	105804-00192PTO-Form-SB0005-New_Application_Transmittal.pdf	273578	no	2
			02946b154f1c2748490f9609e2c9baaf898bb8f3		
Warnings:					
Information:					
2		105804_00192_-_Specification.pdf	164654	yes	30
			ed946456552b05a3810cfae65a2181f0f186c3df		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	24	
	Claims		25	29	
	Abstract		30	30	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	105804_00192_Drawings.pdf	55653	no	4
			4760141c65b7b64de733309f50141b2cd5767523		
Warnings:					
Information:					
4	Oath or Declaration filed	105804-00192-Declaration.PDF	234246	no	4
			ece7b0a897e0ed4ffe7f706a2f7175122a3559880		
Warnings:					
Information:					
5	Information Disclosure Statement (IDS) Form (SB08)	105804-00192PTO-Form-SB0008-IDS.pdf	612604	no	5
			ff8f2cc27b4734d1e3ca140c1299e33608dc83e3		
Warnings:					
Information:					
6	Application Data Sheet	105804-00192PTO-Form-SB0014-ADS.pdf	1421181	no	5
			df6fa7b566769c05587133a10049c131ee3ff7c42		
Warnings:					
Information:					
7	Fee Worksheet (SB06)	fee-info.pdf	33206	no	2
			0cd8c5d0bed1efbf339b1700616085707c0cf795		

Meta Platforms Exhibit 1009

Warnings:	
Information:	
Total Files Size (in bytes):	2795122
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 13/593,626				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	380			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	620			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	250			
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *			OR	x 60 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *				x 250 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1250			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
13/593,626	08/24/2012	2629	1250	105804.00192	20	3

CONFIRMATION NO. 3179

95000

Squire Sanders (US) LLP
8000 Towers Crescent Drive
14th Floor
Vienna, VA 22182

FILING RECEIPT



OC000000056357683

Date Mailed: 09/10/2012

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

David BIRNBAUM, Oakland, CA;
Christopher J. Ullrich, Ventura, CA;
Marcus Aurelius Bothsa, Santa Clara, CA;

Assignment For Published Patent Application

IMMERSION CORPORATION, San Jose, CA

Power of Attorney: The patent practitioners associated with Customer Number 95000

Domestic Priority data as claimed by applicant

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

If Required, Foreign Filing License Granted: 09/05/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/593,626**

Projected Publication Date: 02/27/2014

Non-Publication Request: No

Early Publication Request: No

Title

CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

Preliminary Class

345

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01

CONFIRMATION NO. 3179

PUBLICATION NOTICE



OC00000066849517

95000
MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
Suite 500
Tysons Corner, VA 22102-3833

Title:CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

Publication No.US-2014-0055358-A1

Publication Date:02/27/2014

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01	3179

95000 7590 04/10/2014

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EXAMINER

LIANG, REGINA

ART UNIT

PAPER NUMBER

2625

NOTIFICATION DATE

DELIVERY MODE

04/10/2014

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Ipocketing@MilesStockbridge.com

bgoldsmith@milesstockbridge.com

smcvean@milesstockbridge.com

Office Action Summary	Application No. 13/593,626	Applicant(s) BIRNBAUM ET AL.	
	Examiner REGINA LIANG	Art Unit 2625	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/24/12.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 8/24/2012 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 101

1. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. As per claim 1, the claim limitation recites “a computer readable medium”. However, the usage of the phrase “computer readable medium” is broad enough to include both “non-transitory” and “transitory” (moving electrons, etc.) media. The specification does not clearly limit the utilization of a non-transitory computer readable medium and, thus does not constitute functional descriptive material. Therefore, when the broadest reasonable interpretation of a claim covers a signal per se, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter).

The United States Patent and Trademark Office (USPTO) is obliged to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. See *In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989) (during patent examination the pending claims must be interpreted as broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals per se in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. See MPEP 2111.01.

When the broadest reasonable interpretation of a claim covers a signal per se, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101, Aug. 24, 2009; p. 2.

The USPTO recognizes that applicants may have claims directed to computer readable media that cover signals per se, which the USPTO must reject under 35 U.S.C. § 101 as covering both non-statutory subject matter and statutory subject matter. In an effort to assist the patent community in overcoming a rejection or potential rejection under 35 U.S.C. § 101 in this situation, the USPTO suggests the following approach. *A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by adding the limitation “non-transitory” to the claim.* Cf. *Animals - Patentability*, 1077 Off. Gaz. Pat. Office 24 (April 21, 1987) (suggesting that applicants add the limitation “non-human” to a claim covering a multi-cellular organism to avoid a rejection under 35 U.S.C. § 101). Such an amendment would typically not raise the issue of new matter, even when the specification is silent because the broadest reasonable interpretation relies on the ordinary and customary meaning that includes signals per se. The limited situations in which such an amendment could raise issues of new matter occur, for example, when the specification does not support a non-transitory embodiment because a signal per se is the only viable embodiment such that the amended claim is

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impermissibly broadened beyond the supporting disclosure. See, e.g., *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473 (Fed. Cir. 1998).

Therefore, claim 1 is non-statutory. Dependent claims 2-10 fail to cure this deficiency and are rejected for the same reason.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-8, 10, 11, 13, 14, 16, 18, 19 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Tierling et al (US 2005/0134561 hereinafter Tierling).

As to claim 1, Tierling discloses a computer-readable medium (memory in user interface device 120 – [0039], or memory 114) having instructions stored thereon that, when executed by a processor (122), cause the processor to generate a confirmation haptic effect (abstract), the generating the confirmation haptic effect comprising: receiving context metadata associated with a user interaction of a user interface element (various data from sensor 126 such as pressure, speed, etc. read on context metadata [0043, 0066, 0068]); mapping the received context metadata to one or more haptic parameters (note effects mapper 306, for example[0060]); generating a haptic signal based at least in part on the one or more haptic parameters (note

synthesizer/linearizer 304, [0050]; and sending the haptic signal to an actuator to generate the confirmation haptic effect [0050].

As to claim 6, Tierling discloses the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, data indicating functionality of the user interface element, data indicating history of the user interface element, or sensor input data (see [0006, 0007, 0043] physical characteristics [properties] of the interface device, sensor 126 data of the interface device).

As to claim 7, see [0031] for example where Tierling teaches the haptic parameters comprises at least one of amplitude, frequency, duration, waveform parameter.

As to claim 8, Tierling teaches the user interface element comprises a physical or virtual element of a device (see [0003, 0041] physical keyboards, mouse, GUI (virtual)).

As to claim 10, Tierling discloses that there are multiple types of data provided by the sensor such as pressure, speed, acceleration, torque, rotation, etc. all of which would read on context metadata associated with subsequent user interfaces in which case the mapping, generating, sending steps would all be repeated for each subsequent detected user interaction.

As to claim 11, it is a corresponding method claim to claim 1 therefore it is rejected in the same manner as discussed above with respect to claim 1.

As to claim 13, Tierling discloses the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, data indicating functionality of the user interface element, data indicating history of the user

interface element, or sensor input data (see [0006, 0007, 0043] physical characteristics [properties] of the interface device, sensor 126 data of the interface device).

As to claim 14, see [0031] for example where Tierling teaches the haptic parameters comprises at least one of amplitude, frequency, duration, waveform parameter.

As to claim 16, it is a corresponding system claim to claim 1 therefore it is rejected in the same manner as discussed above with respect to claim 1, in addition note memory (memory in interface device 120 – [0039]) and processor 120.

As to claim 18, Tierling discloses the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, data indicating functionality of the user interface element, data indicating history of the user interface element, or sensor input data (see [0006, 0007, 0043] physical characteristics [properties] of the interface device, sensor 126 data of the interface device).

As to claim 19, see [0031] for example where Tierling teaches the haptic parameters comprises at least one of amplitude, frequency, duration, waveform parameter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under pre-AIA 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of pre-AIA 35 U.S.C. 103(c) and potential pre-AIA 35 U.S.C. 102(e), (f) or (g) prior art under pre-AIA 35 U.S.C. 103(a).

4. Claims 2-5, 12, 17 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Tierling in view of Keyson (US PAT. 6,046,726).

As to claims 2, 4, 5, 12, 17, Tierling does not disclose modifying the one or more haptic parameters based on user input. However, it is old and well known in the art for a user to modify one or more haptic parameters based on user input, for example see Keyson Fig. 3 slider 306, col. 4 lines 11-22. Thus, it would have been obvious to one of ordinary skill in the art to modify Tierling to comprise modifying the one or more haptic parameters based to allow the user to customize, adjust and individually the tactile feedback (Keyson col. 2 lines 29-33).

As to claim 3, Keyson's slider 306 comprises one or more multipliers defined by the user and the value of the haptic feedback is based on the multipliers.

5. Claims 9, 15, 20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Tierling in view of Makinen et al (US 212/0113008)).

As to claims 9, 15, 20 Tierling although discloses the user interface device can include GUI ([0003]) Tierling does not explicitly disclose the user interface element comprises at least one of: a keyboard or a button displayed on a touchscreen of a device. However, it is old and well known in the art that GUI include a keyboard or button displayed on a touchscreen of a device, for example see Makinen. Thus, it would have been obvious to one of ordinary skill in the art to modify Tierling to comprise at least one of: a keyboard or a button displayed on a touchscreen of a device such that the haptic feedback is effectively applied to all types of user interface device to improve feedback to the user.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to REGINA LIANG whose telephone number is (571)272-7693. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Boddie can be reached on (571) 272-0666. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/REGINA LIANG/
Primary Examiner, Art Unit 2625

Notice of References Cited	Application/Control No. 13/593,626		Applicant(s)/Patent Under Reexamination BIRNBAUM ET AL.	
	Examiner REGINA LIANG		Art Unit 2625	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0134561	06-2005	Tierling et al.	345/156
*	B	US-6,046,726	04-2000	Keyson, David V.	345/156
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 13593626	Applicant(s)/Patent Under Reexamination BIRNBAUM ET AL.
	Examiner REGINA LIANG	Art Unit 2625

CPC- SEARCHED		
Symbol	Date	Examiner
G06F3/016, 2203/014, 2203/015	4/3/2014	RL
G10H 2220/31	4/3/2014	RL

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
345	156-158, 173	4/3/2014	RL
715	701, 702	4/3/2014	RL

SEARCH NOTES		
Search Notes	Date	Examiner
East and inventor name searched	4/2/2014	RL

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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<i>Index of Claims</i> 	Application/Control No. 13593626	Applicant(s)/Patent Under Reexamination BIRNBAUM ET AL.
	Examiner REGINA LIANG	Art Unit 2625

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant		☐ CPA		☐ T.D.		☐ R.1.47			
CLAIM		DATE							
Final	Original	04/02/2014							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
	5	✓							
	6	✓							
	7	✓							
	8	✓							
	9	✓							
	10	✓							
	11	✓							
	12	✓							
	13	✓							
	14	✓							
	15	✓							
	16	✓							
	17	✓							
	18	✓							
	19	✓							
	20	✓							

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	112056	(haptic tactile)	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:02
L2	21	map\$4 with L1 with parameter!	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:02
L3	2031	(haptic tactile force adj feedback) same parameter	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:10
L4	351	3 AND ((G06F3/016 OR G06F2203/015 OR G06F2203/014 OR G10H2220/311).CPC.)	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:11
L5	1009509	4 amd map\$4	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:12
L6	219	4 and map\$4	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:12
L7	200	6 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:13
L8	70	3 AND 715/701,702.ccls.	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:27
L9	67	8 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/04/03 12:28
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S2	2195	context near2 metadata	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:49
S3	111824	(haptic tactile)	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:50
S4	2	S2 same S3	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:50
S5	2245	context near2 attribute!	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:55
S6	0	S5 same S3	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:56
S7	222	S5 and S3	US-PGPUB;	OR	OFF	2014/04/01 16:56

			USPAT			
S8	7	S7 and "345"/\$.cls.	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:56
S9	7	S8 not S4	US-PGPUB; USPAT	OR	OFF	2014/04/01 16:56
S10	2177	((user adj interface) or ui) near3 metadata	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:31
S11	138	S10 and S3	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:31
S12	2	S10 same S3	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:31
S13	136	S11 not S12	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:32
S14	9	S13 and "345"/\$.cls.	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:32
S15	9	S14 not S8	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:32
S16	20	map\$4 with S3 with parameter!	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:43
S17	20	S16 not!3	US-PGPUB; USPAT	OR	OFF	2014/04/01 17:43
S18	10	("20090002140" "20090231271" "20100033426" "20100073304" "20110102161" "20110175838" "20120019463" "20120038582" "20120113008" "7952498").PN.	US-PGPUB; USPAT	OR	OFF	2014/04/01 18:53
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S20	0	S19 and metadata	US-PGPUB; USPAT	OR	OFF	2014/04/02 13:49
S21	5	S19 and context	US-PGPUB; USPAT	OR	OFF	2014/04/02 13:49
S22	1	"20050134561".pn.	US-PGPUB; USPAT	OR	OFF	2014/04/02 14:29
S23	1	S22 and frequency	US-PGPUB; USPAT	OR	OFF	2014/04/02 14:30
S24	1	S22 and physical	US-PGPUB; USPAT	OR	OFF	2014/04/02 14:31
S25	1	S22 and virtual	US-	OR	OFF	2014/04/02

				PGPUB; USPAT			14:32
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CONFIRMATION NO. 3179

SERIAL NUMBER 13/593,626	FILING or 371(c) DATE 08/24/2012 RULE	CLASS 345	GROUP ART UNIT 2625	ATTORNEY DOCKET NO. T9047-19319US01		
APPLICANTS INVENTORS David BIRNBAUM, Oakland, CA; Christopher J. Ullrich, Ventura, CA; Marcus Aurelius Bothsa, Santa Clara, CA; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 09/05/2012						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged <u>/REGINA LIANG/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 4	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 3
ADDRESS MILES & STOCKBRIDGE P.C. Immersion Corporation 1751 Pinnacle Drive Suite 500 Tysons Corner, VA 22102-3833 UNITED STATES						
TITLE CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM						
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Receipt date: 08/24/2012

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13/593626	
	Filing Date		2012-08-24	
	First Named Inventor	David BIRNBAUM et al.		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		105804.00192	

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	4	20100073304	A1	2010-03-25	Grant et al.	
	5	20110102161	A1	2011-05-05	Heubel et al.	

Receipt date: 08/24/2012 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13/593626	
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6	20110175838	A1	2011-07-21	Higa	
7	20120019463	A1	2012-01-26	Ng et al.	
8	20120038582	A1	2012-02-16	Grant	
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Receipt date: 08/24/2012 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13/593626
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	Art Unit		
	Examiner Name		
	Attorney Docket Number	105804.00192	

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IN THE U.S. PATENT AND TRADEMARK OFFICE

Application No.: 13/593,626	Confirmation No.: 3179
Application of: David BIRNBAUM et al.	Group Art Unit: 2625
Filing Date: August 24, 2012	Examiner: Regina LIANG
Title: CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM	Docket No.: T9047-19319US01; IMM399 Customer No.: 95000

AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the Office Action dated April 10, 2014, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of the claims which begin on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A non-transitory computer-readable medium having instructions stored thereon that, when executed by a processor, cause the processor to generate a confirmation haptic effect, the generating the confirmation haptic effect comprising:

receiving context metadata associated with a user interaction of a user interface element, wherein the context metadata comprises at least one of: data indicating a functionality of the user interface element, or data indicating a history of the user interface element;

mapping the received context metadata to one or more haptic parameters;
generating a haptic signal based at least in part on the one or more haptic parameters; and

sending the haptic signal to an actuator to generate the confirmation haptic effect.

2. (Currently Amended) The non-transitory computer-readable medium of claim 1, further comprising modifying the one or more haptic parameters based on user input.

3. (Currently Amended) The non-transitory computer-readable medium of claim 2,
wherein the user input comprises one or more multipliers defined by the user;
and

wherein each value included for each of the one or more haptic parameters is based on the one or more multipliers.

4. (Currently Amended) The non-transitory computer-readable medium of claim 3, wherein the one or more multipliers are globally defined for all user interface elements.

5. (Currently Amended) The non-transitory computer-readable medium of claim 3, wherein the one or more multipliers are locally defined for a specific user interface element or a specific plurality of user interface elements.

6. (Currently Amended) The non-transitory computer-readable medium of claim 1, wherein the context metadata further comprises at least one of: data indicating one or more physical properties of the user interface element, ~~data indicating functionality of the user interface element, data indicating history of the user interface element, or~~ sensor input data.

7. (Currently Amended) The non-transitory computer-readable medium of claim 1, wherein the one or more haptic parameters comprises at least one of: a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude haptic parameter, or a waveform haptic parameter.

8. (Currently Amended) The non-transitory computer-readable medium of claim 1, wherein the user interface element comprises at least one of: a physical element of a device or a virtual element of a device.

9. (Currently Amended) The non-transitory computer-readable medium of claim 8, wherein the user interface element comprises a button displayed on a touchscreen of the device.

10. (Currently Amended) The non-transitory computer-readable medium of claim 1, further comprising:

receiving other context metadata associated with a subsequent user interface of the user interface element;

mapping the other context metadata to one or more other haptic parameters;

generating another haptic signal based at least in part on the one or more other haptic parameters; and

sending the another haptic signal to the actuator to generate another confirmation haptic effect, wherein the another confirmation haptic effect is different from the confirmation haptic effect.

11. (Currently Amended) A computer-implemented method for producing a confirmation haptic effect, the computer-implemented method comprising:

receiving context metadata associated with a user interaction of a user interface element, wherein the context metadata comprises at least one of: data indicating a functionality of the user interface element, or data indicating a history of the user interface element;

mapping the received context metadata to one or more haptic parameters;

generating a haptic signal based at least in part on the one or more haptic parameters; and

sending the haptic signal to an actuator to generate the confirmation haptic effect.

12. (Original) The computer-implemented method of claim 11, further comprising modifying the one or more haptic parameters based on user input.

13. (Currently Amended) The computer-implemented method of claim 11, wherein the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, ~~data indicating functionality of the user interface element, data indicating history of the user interface element, or~~ sensor input data.

14. (Original) The computer-implemented method of claim 11, wherein the one or more haptic parameters comprises at least one of: a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude haptic parameter, or a waveform haptic parameter.

15. (Original) The computer-implemented method of claim 11, wherein the user interface element comprises at least one of: a keyboard or a button displayed on a touchscreen of a device.

16. (Currently Amended) A haptic confirmation system comprising:
a memory configured to store a haptic confirmation module;
a processor configured to execute the haptic confirmation module stored on the memory; and
an actuator configured to output one or more confirmation haptic effects;
wherein the haptic confirmation module is configured to receive context metadata associated with a user interaction of a user interface element, wherein the context metadata comprises at least one of: data indicating a functionality of the user interface element, or data indicating a history of the user interface element;

wherein the haptic confirmation module is further configured to map the received context metadata to one or more haptic parameters;

wherein the haptic confirmation module is further configured to generate a haptic signal based at least in part on the one or more haptic parameters; and

wherein the haptic confirmation module is further configured to send the haptic signal to an actuator to generate the confirmation haptic effect.

17. (Original) The haptic confirmation system of claim 16, wherein the haptic confirmation module is further configured to modify the one or more haptic parameters based on user input.

18. (Currently Amended) The haptic confirmation system of claim 16, wherein the context metadata comprises at least one of: data indicating one or more physical properties of the user interface element, ~~data indicating functionality of the user interface element, data indicating history of the user interface element,~~ or sensor input data.

19. (Original) The haptic confirmation system of claim 16, wherein the one or more haptic parameters comprises at least one of: a magnitude haptic parameter, a frequency haptic parameter, a duration haptic parameter, an amplitude haptic parameter, or a waveform haptic parameter.

20. (Original) The haptic confirmation system of claim 16, wherein the user interface element comprises at least one of: a keyboard or a button displayed on a touchscreen of a device.

REMARKS

Introduction

Claims 1-11, 13, 16, and 18 have been amended. The application continues to include claims 1-20. Reconsideration of the rejection of the application is respectfully requested in view of the claim amendments and the following remarks.

The Claims are Directed to Statutory Subject Matter

Claims 1-10 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter such as software per se. In response, claims 1-10 have been amended to recite a “non-transitory computer-readable medium.” Applicants respectfully request that the rejection be withdrawn.

The Claims are Allowable because the Prior Art Fails to Disclose a System that Receives Context Metadata Associated with a User Interaction of a User Interface Element Including Data Indicating a Functionality of the User Interface Element or Data Including a History of the User Interface Element, Mapping the Received Context Metadata to Haptic Parameters, Generating a Haptic Signal Based at Least in Part on the Haptic Parameters, and Sending the Haptic Signal to an Actuator to Generate Confirmation Haptic Effects

Claims 1, 6-8, 10, 11, 13, 14, 16, 18, and 19 are rejected under pre-AIA 35 U.S.C. §102(b) as being anticipated by Tierling et al., U.S. Pat. Pub. No. 2005/0134561 (“Tierling”). Claims 2-5, 12, and 17 are rejected under pre-AIA 35 U.S.C. §103(a) as being unpatentable over Tierling in view of Keyson, U.S. Pat. No. 6,046,726. Claims 19, 15, and 20 are rejected under pre-AIA 35 U.S.C. §103(a) as being unpatentable

over Tierling in view of Makinen et al., U.S. Pat. Pub. No. 2012/0113008 (“Makinen”).

Reconsideration of these rejections is respectfully requested because the prior art fails to disclose a system that receives context metadata associated with a user interaction of a user interface element including data indicating a functionality of the user interface element or data including a history of the user interface element, mapping the received context metadata to haptic parameters, generating a haptic signal based at least in part on the haptic parameters, and sending the haptic signal to an actuator to generate confirmation haptic effects.

One embodiment of the invention is a haptic confirmation system that can produce a confirmation haptic effect in response to an interaction with a user interface element of a device, where the confirmation haptic effect can be customized based on context metadata associated with the interaction of the user interface element (e.g., context metadata 210 of Fig. 2). See Specification at paragraphs [0009] and [0019]; Fig. 2. An example of context metadata is data indicating a functionality of the user interface element (e.g., functionality 212 of Fig. 2), such as the inputting of a character or word within the user interface element or the creation of a text message or e-mail message that is initiated upon interaction with the user interface element. See Specification at paragraph [0021]. Another example of context metadata is data indicating a history of the user interface element (e.g., history 213 of Fig. 2), such as history associated with one or more previous interactions with the user interface element. See Specification at paragraph [0022]. The system can map (e.g., context

metadata mapping 221 of Fig. 2) the context metadata to one or more haptic parameters (e.g., haptic parameters 230 of Fig. 2). See Specification at paragraphs [0024]-[0026]; Fig. 2. The system can generate one or more haptic signals based, at least in part, on the one or more haptic parameters. See Specification at paragraph [0030]. The system can further send the one or more haptic signals to one or more actuators, where each actuator can output one or more confirmation haptic effects based on at least one haptic signal. See Specification at paragraph [0031].

Tierling describes a haptic device 124 that includes an application 302 that communicates effect instructions to a controller 130. See Tierling at paragraph [0050]. Tierling further describes that an effect mapper 306 of the controller 130 receives effect instructions from the application 302 and changes the form of the received effect instructions to provide transformed effect instructions to the effect combiner/sequencer 308, where the transformed effect instructions cause the controller 130 to output haptic instructions that ultimately cause the haptic device 124 to output a desired haptic sensation. See Tierling at paragraphs [0059]-[0060]. Tierling further describes that the effect mapper 306 can improve or tailor haptic instructions based on received physical characteristics of the haptic device 124. See Tierling at paragraph [0066].

While Tierling describes that the effect mapper 306 can modify haptic instructions based on received physical characteristics of the haptic device 124, Tierling fails to disclose or suggest that the effect mapper 306 can modify haptic instructions based on received data that either indicates a functionality of a user interface element of the

haptic device 124, or indicates a history of a user interface element of the haptic device 124. Thus, Tierling fails to disclose or suggest that the haptic device 124 receives context metadata associated with a user interaction of a user interface element including data indicating a functionality of the user interface element or data including a history of the user interface element, mapping the received context metadata to haptic parameters, generating a haptic signal based at least in part on the haptic parameters, and sending the haptic signal to an actuator to generate confirmation haptic effects. Further, Keyson and Makinen, whether considered individually or in combination, do not cure the deficiencies of Tierling.

In contrast to the cited prior art, amended independent claim 1 recites "receiving context metadata associated with a user interaction of a user interface element, wherein the context metadata comprises at least one of: data indicating a functionality of the user interface element, or data indicating a history of the user interface element." For at least these reasons, amended independent claim 1, and amended independent claims 11 and 16, which recite similar limitations, should now be allowable over the cited prior art. The remaining claims depend from one of the above independent claims and should also be allowable for at least the above reasons.

Conclusion

Applicants respectfully request favorable action in connection with this application.

The Examiner is invited and urged to contact the undersigned to discuss any matter concerning this application.

No fee should be required for this submission. However, should any fee be required, the Commissioner is authorized to charge any such fee to Counsel's Deposit Account 50-1165.

Respectfully submitted,

Date: July 8, 2014

/Keith M. Mullervy/
Keith M. Mullervy
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Customer No. 95000

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Electronic Acknowledgement Receipt

EFS ID:	19514556
Application Number:	13593626
International Application Number:	
Confirmation Number:	3179
Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM
First Named Inventor/Applicant Name:	David BIRNBAUM
Customer Number:	95000
Filer:	Keith M. Mullervy/Hilary Shannon
Filer Authorized By:	Keith M. Mullervy
Attorney Docket Number:	T9047-19319US01
Receipt Date:	08-JUL-2014
Filing Date:	24-AUG-2012
Time Stamp:	11:48:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		T9047-19319US01-RESPONSE. pdf	105605 bf21815af40a5c691d966c2b99eac20f98a47014	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	11
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 13/593,626		Filing Date 08/24/2012		☐ To be Mailed				
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO													
APPLICATION AS FILED – PART I													
(Column 1)			(Column 2)										
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)					
☒ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A		380					
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A							
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A							
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =							
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =							
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☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))													
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL		380					
APPLICATION AS AMENDED – PART II													
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AMENDMENT	07/08/2014		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
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	Independent (37 CFR 1.16(h))		* 3		Minus	*** 3		= 0		X \$420 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
										TOTAL ADD'L FEE		0	
(Column 1)			(Column 2)			(Column 3)							
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*		Minus	**		=		X \$ =			
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MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
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Tysons Corner, VA 22102-3833

EXAMINER

LIANG, REGINA

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 08/05/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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13/593,626

08/24/2012

David BIRNBAUM

T9047-19319US01

3179

TITLE OF INVENTION: CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	11/05/2014

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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

95000 7590 08/05/2014
MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
Suite 1500
Tysons Corner, VA 22102-3833

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01	3179

TITLE OF INVENTION: CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	11/05/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
LIANG, REGINA	2625	345-156000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

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NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01	3179

95000 7590 08/05/2014
MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
Suite 1500
Tysons Corner, VA 22102-3833

EXAMINER

LIANG, REGINA

ART UNIT	PAPER NUMBER
----------	--------------

2625

DATE MAILED: 08/05/2014

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/593,626	Applicant(s) BIRNBAUM ET AL.	
	Examiner REGINA LIANG	Art Unit 2625	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 7/8/2014.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-20. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	7. ☐ Other _____
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____	

/REGINA LIANG/ Primary Examiner, Art Unit 2625	
---	--

Search Notes 	Application/Control No. 13593626	Applicant(s)/Patent Under Reexamination BIRNBAUM ET AL.
	Examiner REGINA LIANG	Art Unit 2625

CPC- SEARCHED		
Symbol	Date	Examiner
G06F3/016, 2203/014, 2203/015	4/3/2014	RL
G10H 2220/31	4/3/2014	RL
Updated above	7/28/2014	RL

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
345	156-158, 173	4/3/2014	RL
715	701, 702	4/3/2014	RL
	updated above	7/28/2014	RL

SEARCH NOTES		
Search Notes	Date	Examiner
East and inventor name searched	4/2/2014	RL
East, inentor name and interference searched	7/28/2014	RL

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	see East search history printout	7/28/2014	RL

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	112	birnbaum-d\$.in.	US-PGPUB; USPAT	OR	ON	2014/07/28 11:45
L2	388	birnbaum-d\$.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/28 11:46
L3	168	2 and haptic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/28 11:46
L4	86	3 and parameter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/28 11:47
L5	140	2 and haptic adj effect	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/28 11:47
L6	56	5 and mapping	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/28 11:47
L7	1139	map\$4 with (haptic tactile)	US-PGPUB; USPAT	OR	ON	2014/07/28 11:53
L8	14	7 same function\$5 with interface	US-PGPUB; USPAT	OR	ON	2014/07/28 11:54
L9	369	7 and "345"/\$.ccls.	US-PGPUB; USPAT	OR	ON	2014/07/28 11:56
L10	325	9 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/07/28 11:56
L11	268	7 and "345"/156-158,173.ccls.	US-PGPUB; USPAT	OR	ON	2014/07/28 11:57
L12	234	11 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/07/28 11:57
L13	206	7 same function\$5	US-PGPUB; USPAT	OR	ON	2014/07/28 11:57
L14	54	13 and "345"/156-158,173.ccls.	US-PGPUB; USPAT	OR	ON	2014/07/28 11:57
L15	67	13 and "345"/\$.ccls.	US-PGPUB; USPAT	OR	ON	2014/07/28 11:58
L16	58	15 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/07/28 11:58
L17	9	13 and 715/401,702.ccls.	US-PGPUB; USPAT	OR	ON	2014/07/28 12:13
L18	52	7 and 715/401,702.ccls.	US-PGPUB; USPAT	OR	ON	2014/07/28 12:14

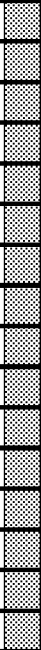
L19	49	18 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/07/28 12:14
L20	55	13 AND ((G06F3/016 OR G06F2203/015 OR G06F2203/014 OR G10H2220/311).CPC.)	US-PGPUB; USPAT	OR	OFF	2014/07/28 12:15
L21	46	20 and @ad<="20120824"	US-PGPUB; USPAT	OR	OFF	2014/07/28 12:15

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L22	1	(metadata with (functionality history) and (haptic tactile) with parameter).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/07/28 12:17
L23	1	((functionality history) with user adj interface and (haptic tactile) with parameter).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/07/28 12:17
L24	1	((functionality history) with interface and (haptic tactile) with parameter).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/07/28 12:18
L25	3	((functionality history) with interface and (haptic tactile) with map\$4).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/07/28 12:18

7/ 28/ 2014 12:19:21 PM
C:\ Users\ rliang\ Documents\ EAST\ Workspaces\ 13593626.wsp

Issue Classification 	Application/Control No. 13593626	Applicant(s)/Patent Under Reexamination BIRNBAUM ET AL.	
	Examiner REGINA LIANG	Art Unit 2625	

CPC			
Symbol		Type	Version
			

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
				

NONE		Total Claims Allowed:	
(Assistant Examiner) (Date)		20	
/REGINA LIANG/ Primary Examiner.Art Unit 2625		O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner) (Date)		1	1

Issue Classification 	Application/Control No. 13593626	Applicant(s)/Patent Under Reexamination BIRNBAUM ET AL.
	Examiner REGINA LIANG	Art Unit 2625

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
SAME	1		17												
	2		18												
	3		19												
	4		20												
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														

NONE	Total Claims Allowed: 20	
(Assistant Examiner)	(Date)	
/REGINA LIANG/ Primary Examiner.Art Unit 2625	07/28/2014	O.G. Print Claim(s) 1
(Primary Examiner)	(Date)	O.G. Print Figure 1

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

95000 7590 08/05/2014
MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
Suite 1500
Tysons Corner, VA 22102-3833

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01	3179

TITLE OF INVENTION: CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	11/05/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
LIANG, REGINA	2625	345-156000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☒ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

Miles & Stockbridge P.C.

2. _____

3. _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Immersion Corporation

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

San Jose, CA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☒ The Director is hereby authorized to charge the required fees, any deficiency, or credits any overpayment, to Deposit Account Number 501165 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Keith M. Mullervy/

Date October 24, 2014

Typed or printed name Keith M. Mullervy

Registration No. 62382

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

"FEE ADDRESS" INDICATION FORM**Address to:**
Mail Stop M Correspondence
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**Fax to:**
571-273-6500**- OR -**

INSTRUCTIONS: The issue fee must have been paid for application(s) listed on this form. In addition, only an address represented by a Customer Number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application.

When to check the first box below: If you have a Customer Number to represent the fee address. **When to check the second box below:** If you have no Customer Number representing the desired fee address, in which case a completed Request for Customer Number (PTO/SB/125) must be attached to this form. For more information on Customer Numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

For the following listed application(s), please recognize as the "Fee Address" under the provisions of 37 CFR 1.363 the address associated with:



Customer Number:

00204**OR**

The attached Request for Customer Number (PTO/SB/125) form.

PATENT NUMBER (if known)	APPLICATION NUMBER
	13/593,626

Completed by (check one):



Applicant/Inventor

/Keith M. Mullervy/

Signature

Attorney or Agent of record 62382
(Reg. No.)

Keith M. Mullervy

Typed or printed name

Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)703-610-8646

Requester's telephone number



Assignee recorded at Reel _____ Frame _____

October 24, 2014

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.



* Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.363. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 5 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND COMPLETE D FORMS TO THIS ADDRESS.

SEND TO: Mail Stop M Correspondence, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	13593626			
Filing Date:	24-Aug-2012			
Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM			
First Named Inventor/Applicant Name:	David BIRNBAUM			
Filer:	Keith M. Mullervy/Hilary Shannon			
Attorney Docket Number:	T9047-19319US01			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	960	960
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt

EFS ID:	20497354
Application Number:	13593626
International Application Number:	
Confirmation Number:	3179
Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM
First Named Inventor/Applicant Name:	David BIRNBAUM
Customer Number:	95000
Filer:	Keith M. Mullervy/Hilary Shannon
Filer Authorized By:	Keith M. Mullervy
Attorney Docket Number:	T9047-19319US01
Receipt Date:	24-OCT-2014
Filing Date:	24-AUG-2012
Time Stamp:	07:44:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$960
RAM confirmation Number	6692
Deposit Account	501165
Authorized User	GOLDSMITH, BARRY S.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	T9047-19319US01ISSUEFEETRA NSMITTAL.pdf	1610161 e2b6bffa9ac499581cb9da028ac85b67e7f67a8	no	1
Warnings:					
Information:					
2	Maintenance Fee Address Change	t9047-19319us01- FEEADDRESSINDICATIONFORM .pdf	203288 f8cb69e9c2f61e04a9463eb8b090699ec7ac6103	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30251 0b40a0b68175aced4bdd85dfb1330fd1c06bc61b	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			1843700		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/593,626	11/25/2014	8896524	T9047-19319US01	3179

95000 7590 11/05/2014
MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
Suite 1500
Tysons Corner, VA 22102-3833

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 168 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

David BIRNBAUM, Oakland, CA;
Christopher J. Ullrich, Ventura, CA;
Marcus Aurelius Bothsa, Santa Clara, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

99292

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

99292

OR

☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Immersion Corporation
50 Rio Robles
San Jose, CA 95134

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	12/17/15
Name	Catherine C. Maresh	Telephone	408.350.8755
Title	Senior IP Counsel		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	31884614
Application Number:	13593626
International Application Number:	
Confirmation Number:	3179
Title of Invention:	CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM
First Named Inventor/Applicant Name:	David BIRNBAUM
Customer Number:	95000
Filer:	Teresa U. Medler
Filer Authorized By:	
Attorney Docket Number:	T9047-19319US01
Receipt Date:	26-FEB-2018
Filing Date:	24-AUG-2012
Time Stamp:	16:31:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	IMM399_373b.pdf	422568	no	2
			4199594d2bd4bc1decc0ed8a0db67c1f9b3078e3		

Warnings:

Information:					
2	Power of Attorney	Immersion_POA.PDF	155580	no	1
			5414154a624907f7abb27a49fee51d70eae7d12e		
Warnings:					
Information:					
Total Files Size (in bytes):			578148		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: David BIRNBAUM, et al.

Application No./Patent No.: 8,896,524 Filed/Issue Date: 25 November 2014

Titled: CONTEXT-DEPENDENT HAPTIC CONFIRMATION SYSTEM

Immersion _____, a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 028842, Frame 0751, or for which a copy therefore is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Teresa U. Medler/

Signature

2018-02-26

Date

Teresa U. Medler

Printed or Typed Name

49,333

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Meta Platforms Exhibit 1009

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01

CONFIRMATION NO. 3179

POWER OF ATTORNEY NOTICE



95000
MILES & STOCKBRIDGE P.C.
Immersion Corporation
1751 Pinnacle Drive
Suite 1500
Tysons Corner, VA 22102-3833

Date Mailed: 03/08/2018

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/26/2018.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/tlulu/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/593,626	08/24/2012	David BIRNBAUM	T9047-19319US01

99292
Medler Ferro Woodhouse & Mills PLLC
8201 Greensboro Drive, Suite 1060
McLean, VA 22102

CONFIRMATION NO. 3179
POA ACCEPTANCE LETTER



Date Mailed: 03/08/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/26/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/tlulu/

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court Western District of Texas on the following
☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-541	DATE FILED 5/26/2022	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF IMMERSION CORPORATION		DEFENDANT META PLATFORMS, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,469,806	6/25/2013	Immersion Corporation
2 8,896,524	11/25/2014	Immersion Corporation
3 9,727,217	8/8/2017	Immersion Corporation
4 10,248,298	4/2/2019	Immersion Corporation
5 10,269,222	4/23/2019	Immersion Corporation

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Meta Platforms Exhibit 1009

Page 00121

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-541	DATE FILED 5/26/2022	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF IMMERSION CORPORATION		DEFENDANT META PLATFORMS, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 10,664,143	5/26/2020	Immersion Corporation
2		
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy