

IPR2024-01091
U.S. Patent No. 10,936,114

Patent Owner's Hearing Demonstratives

October 16, 2025

Apple Inc. v. Smith Interface Techs., LLC
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 (“Pet’r’s CC Brief”)**

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U.S. Patent No. 10,936,114

(12) **United States Patent
Smith**

(10) **Patent No.: US 10,936,114 B1**
(45) **Date of Patent: *Mar. 2, 2021**

(54) **GESTURE-EQUIPPED TOUCH SCREEN
SYSTEM, METHOD, AND COMPUTER
PROGRAM PRODUCT**

(56) **References Cited**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 84 days.
This patent is subject to a terminal dis-
claimer.

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(21) Appl. No.: 16/558,026

(22) Filed: **Aug. 30, 2019**

(57)

ABSTRACT

In one embodiment, an apparatus is provided including: at least one non-transitory memory storing instructions and a plurality of applications; a touch screen; and one or more processors in communication with the at least one non-transitory memory and the touch screen, wherein the one or more processors execute the instructions to: display, via the touch screen, an object and at least a portion of an interface; detect a gesture on the touch screen on the object; when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation; when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, where the scaling includes a reduction in a size such that the size is inversely related to the magnitude of the duration of the gesture being detected on the touch screen on the object; and when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

65 Claims, 25 Drawing Sheets

Related U.S. Application Data

(63) Continuation of application No. 16/377,142, filed on
Apr. 5, 2019, now Pat. No. 10,656,753, which is a
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G06F 3/041
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0412;

3/045;



(12) **United States Patent
Smith**

(54) **GESTURE-EQUIPPED
TOUCH SCREEN SYSTEM,
METHOD, AND COMPUTER
PROGRAM PRODUCT**

(45) **Date of Patent: Mar. 2,
2021**

(22) **Filed: Aug. 30, 2019**

Overview

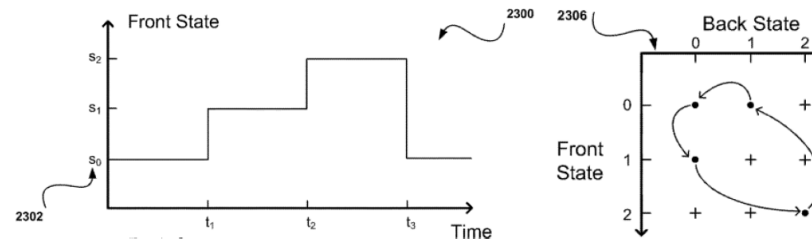
- **Technology Overview**
- **Claim Construction (Dispositive)**
- **Cited References**
- **Limitation [1.f]: Detection of a “Double Tap” Does Not Meet The Claimed Precondition**
- **Limitation [1.i]: “Perform Other Action” Does Not Meet The Claimed Precondition**
- **The Petition Inconsistently Maps the “First” and “Second” Threshold**
- **No Motivation to Add Haptic Feedback to Kim’s Double Tap Gesture**

Technology Overview

Multi-Part Pattern Based Gestures

Patent Owner Response

The '114 Patent describes these multi-part, multi-action gestures as “pattern-based gestures” that “may be recognized in the form of an ordered sequence” by, for example, “using a decision tree.” EX1001, 75:24-26; EX2010, [00581]. The “pattern-based gesture” may be defined as “a path through a phase space of one or more dimensions.” EX1001, 73:27-29; EX2010, [00564]. Exemplary pattern-based gesture, “pattern-based gesture 2302,” is “described by a phase space path which represents the time evolution of the touch state associated with a contact point” on the touch screen. EX1001, 73:41-44; EX2010, [00566].



EX1001, FIG. 23; EX2010, FIG. 28.

POR at 5

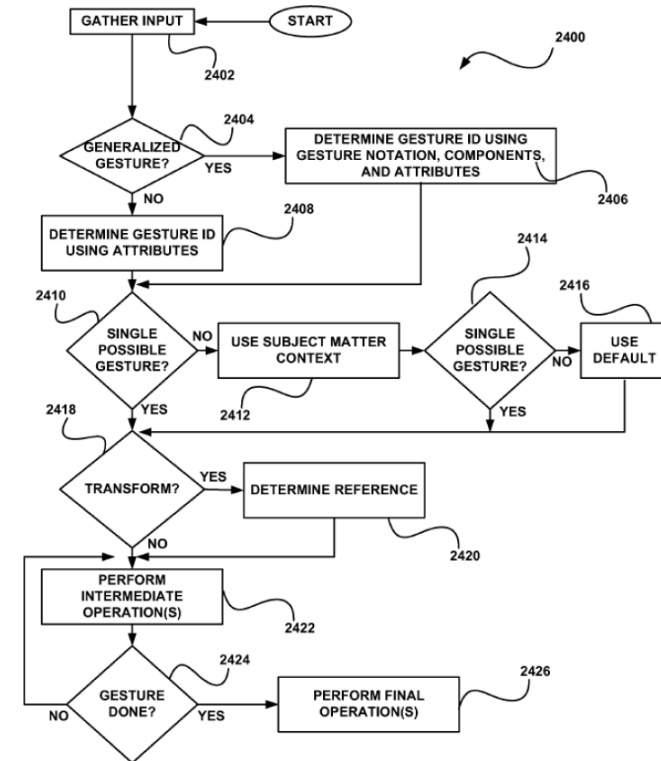
Multi-Part Pattern Based Gestures

Patent Owner Response

To detect pattern-based gestures, the '918 Provisional, which the '114 Patent incorporates by reference (EX1001, 1:22-24), discloses “gesture differentiation,” which is distinguished from simply detecting a “basic user interaction (*i.e.*, button press, basic application interaction, etc.),” techniques. EX2010, [00498], [00502]. The process begins by “determin[ing] whether there is any meaningful user input,” including applying a “threshold above which user interaction may rise before it may be deemed meaningful.” *Id.*, [00501]-[00502]. Detecting the gesture may involve “gesture subject matter context,” including “objects displayed at or near the location of the gesture.” *Id.*, [00512]. For example, the starting point may be the beginning of a touch contact at a particular location of a specific object on the touch screen. *Id.*; EX2008, ¶28.

POR at 6

Patent Owner Response



EX2010, FIG. 24.

POR at 7 (citing '918 Provisional at Fig.24)

'114 Patent

Patent Owner Response

Claims 1, 32, 34 and 64 recite logic to process user gestures on a touch screen to recognize a set of gesture components that begin from a common starting point and perform operations upon recognizing various aspects of a gesture. EX2008, ¶35. Claims 1, 32, 34 and 64 each recite “detect[ing] [at least one component of] a **gesture** on the touch screen on the [first] object.” Limitations [1.e], [32.e], [34.f], [64.f]. Each claim then recites three logic operations:

POR at 10

Patent Owner Response

- [1.f] • “[when]/[based on]/[in response to] a magnitude of a duration of the **gesture** being detected on the touch screen on the object is less than a first magnitude threshold, perform an [operation]/function],”
- [1.g] • “[when]/[based on]/[in response to] the magnitude of the duration of the **gesture** being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling ... , and”
- [1.i] • “[when]/[based on]/[in response to] the magnitude of the duration of the **gesture** being detected on the touch screen on the object is greater than a second magnitude threshold, perform another [operation]/[function].”

POR at 10

'114 Patent



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

[1.a] at least one non-transitory memory storing instructions and a plurality of applications;

[1.b] a touch screen; and

[1.c] one or more processors in communication with the at least one non-transitory memory and the touch screen, wherein the one or more processors execute the instructions to:

[1.d] display, via the touch screen, an object and at least a portion of an interface;

[1.e] detect **a gesture** on the touch screen on the object;

[1.f] when a magnitude of a duration of **the gesture** being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of **the gesture** being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, [1.h] where the scaling includes a reduction in a size such that the size is inversely related to the magnitude of the duration of the gesture being detected on the touch screen on the object; and

[1.i] when the magnitude of the duration of **the gesture** being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Claim Construction

“The gesture”

Smith Interface's Proposed Construction	Apple's Proposed Construction
Claims 1, 32, 34 and 64 recite logic to process user gestures on a touch screen to recognize a set of gesture components that <u>begin from a common starting point</u> and perform operations upon recognizing various aspects of a gesture.	The Challenged Claims must be interpreted to permit the conditional limitations to be met by <u>different gestures</u> in which each gesture has a different duration that satisfies different alternatives.

POR at 10

Reply at 2

“The Gesture”



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.e] detect a gesture on the touch screen on the object;

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Patent Owner Response

The claim language itself defines the recited “gesture” as a user touch initially detected “on the touch screen at the object.” Limitations [1.e], [32.e], [34.f], [64.f]; EX2008, ¶58. As explained in Section II.A, above, “gestures” include multi-action “pattern-based gestures” that “may be recognized in the form of an ordered sequence” by, for example, “using a decision tree.” EX1001, 75:24-26; EX2010, [00581]. Accordingly, “component of the gesture being detected,” consistent with the specification and plain meaning, refers to one component of a multi-part gesture. EX2008, ¶58. In sum, a gesture may have multiple components, but the gesture repeatedly referenced in the claims is a user input that begins with detection of a touch on an object on the touch screen. *Id.* A user input that begins at an intermediate component of a multi-component gesture is not the gesture. *Id.*

POR at 22

“The Gesture”



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.e] detect **a gesture** on the touch screen on the object;

[1.f] when a magnitude of a duration of **the gesture** being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of **the gesture** being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of **the gesture** being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.



Petitioner's Claim Construction Brief

conditional claims. *See* POR, 21-25. Petitioner's position is that each conditional limitation [1.f], [1.g], and [1.i] refers back to *the* gesture recited in limitation [1.e]

Pet. CC Brief at 2; see also id. at 1

“The Gesture”



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.e] detect a gesture on the touch screen on the object;

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Patent Owner Response

With this context, the antecedent bases “the duration of” and “the gesture” indicate that evaluating the preconditions recited in each Limitation requires evaluating instances of user input beginning at a common starting point. EX2008, ¶60. Here, the plain language of the claims defines that common starting point as the initial detection of a user touch “on the touch screen at the object.” Limitations [1.e], [32.e], [34.f], [64.f]; EX2008, ¶60. Accordingly, it is not sufficient, in collectively mapping the conditional Limitations, to point to logic in the prior art for detection of gestures that do not share the common starting point or that are determined based on “durations” starting at any point other than the common starting point. EX2008, ¶60.

POR at 24-25

“The Gesture”



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.e] detect a gesture on the touch screen on the object;

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.



Dr. Madisetti Declaration

61. At the same time, because the claims refer to the logic used to evaluate numerous instances of user input, it is not necessary that the prior art include logic where the preconditions for each Limitation would be met in response to a single user input. This is again consistent with “decision-tree” and detection logic for detecting multi-part pattern-based gestures as described in connection with Figure 23 of the '114 Patent and Figure 24 of the incorporated-by-reference '918 Provisional as further discussed in Section VI.A, above. It is also consistent with the fact that some, but not all, of the Limitations recite mutually-exclusive preconditions such that requiring all preconditions to be met in response to a single instance of user input is contrary to the plain claim language. For example, a single instance of user input that met Limitation [1.f] would not also meet [1.g] or [1.i] and, vice versa, and a single instance of user input that met Limitation [1.g] may also, but need not, meet Limitation [1.i].

EX2008 at ¶ 61; POR at 25

“The Gesture”



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.e] detect a gesture on the touch screen on the object;

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

[1.e]

detect a gesture on the touch screen on the object;

[1.f]

a magnitude of a duration of the gesture ... less than a first magnitude threshold?

Yes

perform an operation

No

[1.g]

the magnitude of the duration of the gesture ... greater than a first magnitude threshold?

Yes

perform a scaling ...

[1.i]

the magnitude of the duration of the gesture ... greater than a second magnitude threshold?

Yes

perform another operation

Recited logic for “evaluating instances of user input beginning at a common starting point.” POR at 10, 23-25; EX2008 (Madisetti Dec) at ¶¶ 35, 58-61

“The Gesture”



Petitioner's Reply

The Challenged Claims must be interpreted to permit the conditional limitations to be met by different gestures in which each gesture has a different duration that satisfies different alternatives.

Reply at 2



'114 Patent, Claim 1 (Rewritten as Petitioner Requests)

[1.pre] An apparatus, comprising:

...

[1.e.1] detect a first gesture on the touch screen on the object; or [1.e.2] detect a second (different) gesture on the touch screen on the object; or [1.e.3] detect a third (different) gesture on the touch screen on the object;

[1.f] when a magnitude of a duration of the first gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the second gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of the third gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

“The Gesture”

'114 Patent, Claim 1 (Rewritten as Petitioner Requests)

[1.pre] An apparatus, comprising:

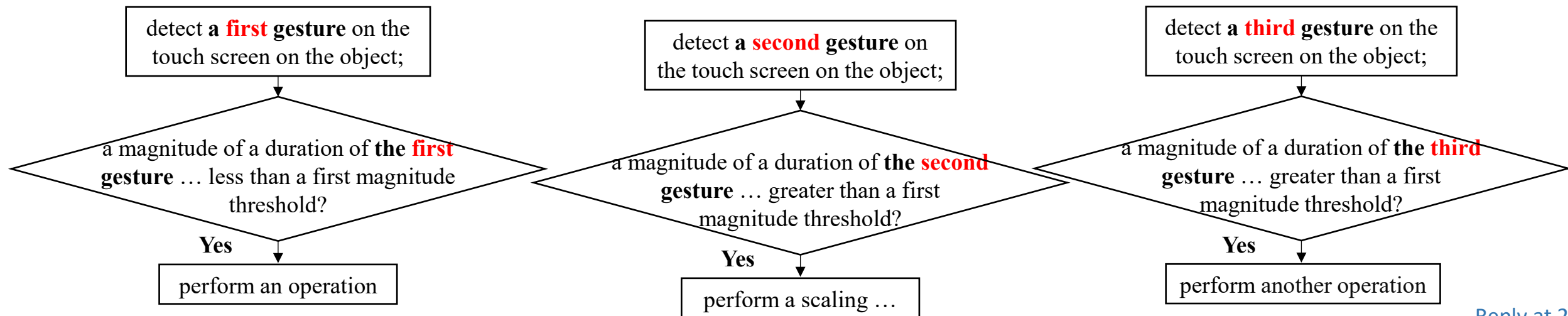
...

[1.e.1] detect a **first** gesture on the touch screen on the object; or [1.e.2] detect a second (different) gesture on the touch screen on the object; or [1.e.3] detect a third (different) gesture on the touch screen on the object;

[1.f] when a magnitude of a duration of the **first** gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the **second** gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object, . . . and

[1.i] when the magnitude of the duration of the **third** gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.



Reply at 2

Petitioner Does Not Map to Patent Owner's Construction

Petitioner's Reply

II. The Petition's mapping of "the gesture being detected" limitation to three different gestures is entirely proper (claims 1, 32, 34, 64)

A. The Petition's approach to claim construction is consistent and aligned with the '114 Patent

As discussed in Petitioner's Claim Construction Brief, the Petition's mappings and approach to claim construction are aligned with the '114 Patent and consistent with the claims' recitation of antecedent basis. Paper 22, §§II.A-D.

Reply at 3

Conditional Limitations

Smith Interface's Proposed Construction	Apple's Proposed Construction
Claims 1 and 32: All conditional limitations need to be met	
Claims 34 and 64: All conditional limitations need to be met	Claims 34 and 64: The prior art need only disclose one of the steps having a condition precedent

POR at 26-28

Pet. CC Br. at 11-14

Conditional Limitations—Claims 34 & 64



Dr. Madiseti Declaration

62. Nothing in the language of Claims 1, 32, 34 and 64 suggests any of the recited conditional Limitations are optional or may be ignored in mapping the prior art. As explained below, Limitation [1.f] will not be met during the same instance of a user touch as Limitations [1.g] or [1.i] (and vice versa).⁵ Additionally, Claims 34 and 64 include multiple conditional steps that specify different actions based on evaluation of the touch input against various criteria that must be performed when a precondition is met. Each condition leads to a different action, or set of actions, and understanding the claim fully requires evaluating all possible conditions and their corresponding actions. Further, claims 34 and 64 here recite the context of the method being performed “at an apparatus including a watch [with] / [having] ... a touch screen” (Limitation [84.a]), which, as discussed above, connotes a group of logic all expected to be met when a given precondition applies.



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.f] **when** a magnitude of a **duration of the gesture** being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] **when** the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,

[1.h] ... **and**

[1.i] **when** the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

EX2008 at ¶ 62; POR at 26-28

Conditional Limitations—Claims 34 & 64



The Board held limitations 1[c] and 1[d] are mutually exclusive. That is, they “cannot both occur in response to the same set of stimuli” ... Here, we reject the Board’s conclusion because **the plain and unambiguous language of claim 1 requires that a method, to come within the claim, must perform both limitations 1[c] and 1[d] where their preconditions apply.** '396 patent at 16:46-53 (“stopping the timer . . . **and** transmitting the status report after the timer expires” (emphasis added)).

Sierra Wireless, ULC v. Sisvel S.p.A., 130 F.4th 1019, 1022 (Fed. Cir. 2025)



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.f] **when** a magnitude of a **duration of the gesture** being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] **when** the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,

[1.h] . . . **and**

[1.i] **when** the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Conditional Limitations—Claims 34 & 64



[T]he “selecting” step in claim 7 is not met unless the TDMA system is configured to perform each claimed responsive action in response to each corresponding claimed prerequisite condition. Thus, the Board did not err by concluding that the prior art was required to teach both conditions of the “selecting” step. ... We make no comment on whether *Schulhauser* was correctly decided by the Board, but we find that claim 7 of the '991 patent is distinguishable from the claim at issue in *Schulhauser*. In *Schulhauser*, ... each alternative condition could reasonably be construed as a standalone method claim ...

Hytera Commc'ns Co. v. Motorola Sols. Inc., 841 F. App'x 210, 216-218 (Fed. Cir. 2021)



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,

[1.h] ... and

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Conditional Limitations—Claims 34 & 64



Regarding the “if” clauses found in limitations (b) and (c) of claims 10 and 31, we are not persuaded that these clauses are optional statements as noted by the Examiner (Ans. 8-9, 13). ... Conditional statements, on the other hand, leave open the situation where the condition is not satisfied; but **if the condition is satisfied, then a stated action occurs** (*Altiris, Inc. v. Symantec Corp*, 318 F.3d 1363 (Fed. Cir. 2003)). ... Here, **limitations (b) and (c) are not optional because if their condition is satisfied, these limitations require certain steps to be performed.**

Ex Parte Brosius, Appeal No. 2010-001734, 4-5 (BPAI January 19, 2012)



'114 Patent, Claim 1

[1.pre] An apparatus, comprising:

...

[1.f] **when** a magnitude of a **duration of the gesture** being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

[1.g] **when** the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,

[1.h] ... **and**

[1.i] **when** the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Cited References

Kim

[0048] Referring to FIGS. 2A and 2B, while performing a selected mode (step 201), the mobile device detects the occurrence of an interrupt (step 203). As discussed above, a selected mode refers to a particular mode that allows displaying some kind of display target data outputted while a specific application selected at a user's request runs in the mobile device. Also, a selected mode can include a web page display mode based on but not limited to any of a web browser function or environment, a photo data display mode based on a camera function or environment, and a text display mode based on a document viewer function or environment. Furthermore, display target data refers to at least one of any kind of contents and files displayed in a visual form on a touch screen. In addition, an interrupt refers to a signal or instructions, inputted through at least one of a touch screen and a special function key by a user, to stop the execution of a running application.

EX1004 at [0048]

Kim

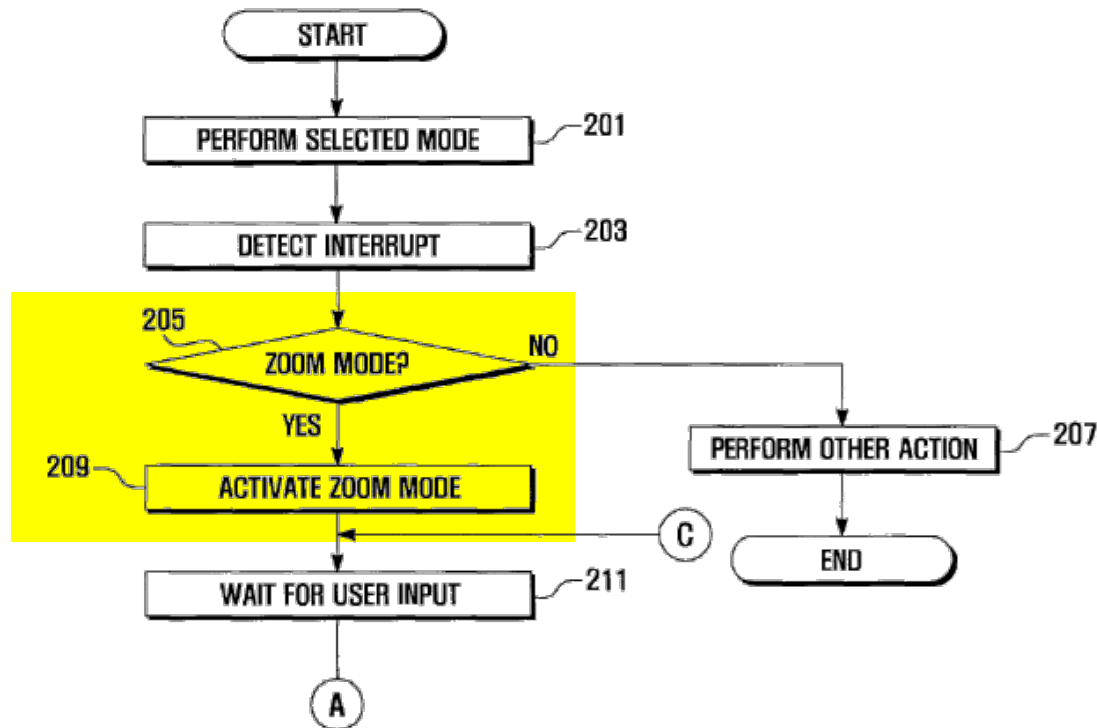
[0049] After detecting an interrupt, the mobile device determines whether an interrupt is a request for activating the zoom mode (step 205). For instance, the mobile device can determine whether an interrupt is a long press input which occurs at a specific point on display target data outputted in a current mode.

EX1004 at [0049]

Kim discloses activating “zoom mode” in response to a “long press” input

Kim

FIG. 2a



See POR at 13; EX1004, Fig.2a

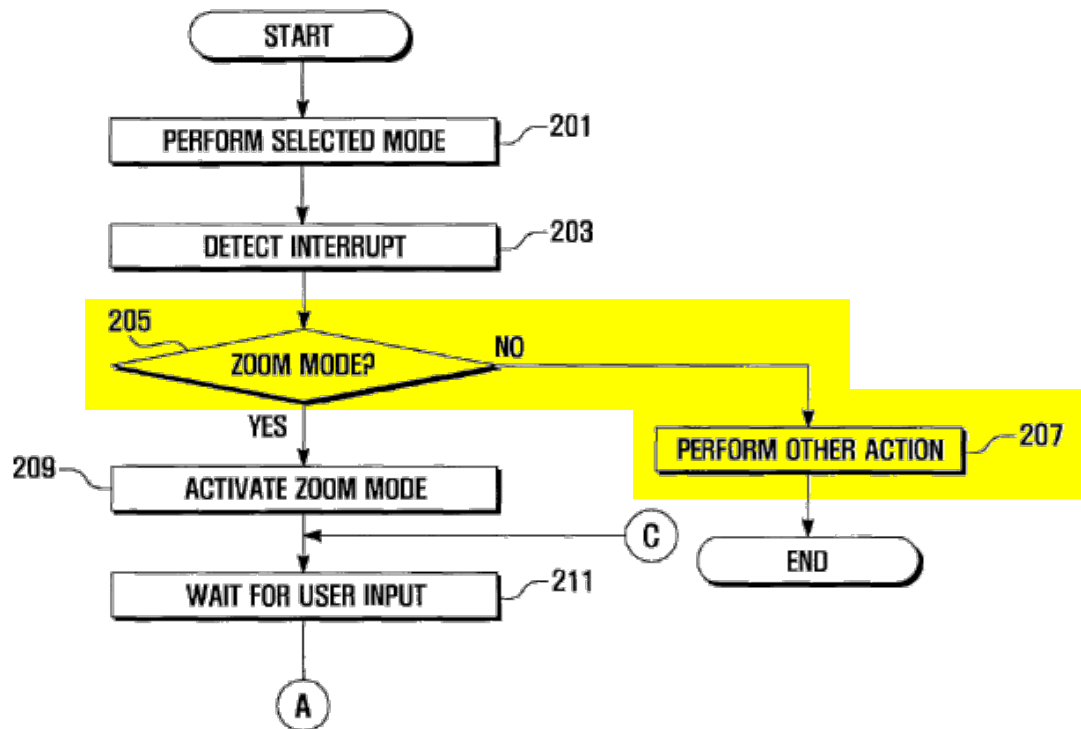
Kim

[0049] After detecting an interrupt, the mobile device determines whether an interrupt is a request for activating the zoom mode (step 205). For instance, the mobile device can determine whether an interrupt is a long press input which occurs at a specific point on display target data outputted in a current mode.

See POR at 12; EX1004 at [0049]

Kim

FIG. 2a



See POR at 13; EX1004, Fig.2a

Kim

[0050] If an interrupt is not a request for the activation of the zoom mode as the result of determination in the step 205, the mobile device can perform some action in connection with an interrupt (step 207). For instance, if an interrupt is a request for a specific menu, the mobile device displays the requested menu. Also, if an interrupt is a selection input for a specific icon, the mobile device one of launches and enables one of an application and a function which is assigned to the selected icon. Meanwhile, if an interrupt is a request for the toggle mode, the mobile device performs appropriate actions in the toggle mode as will be described with reference to FIG. 4.

See POR at 13; EX1004 at [0050]

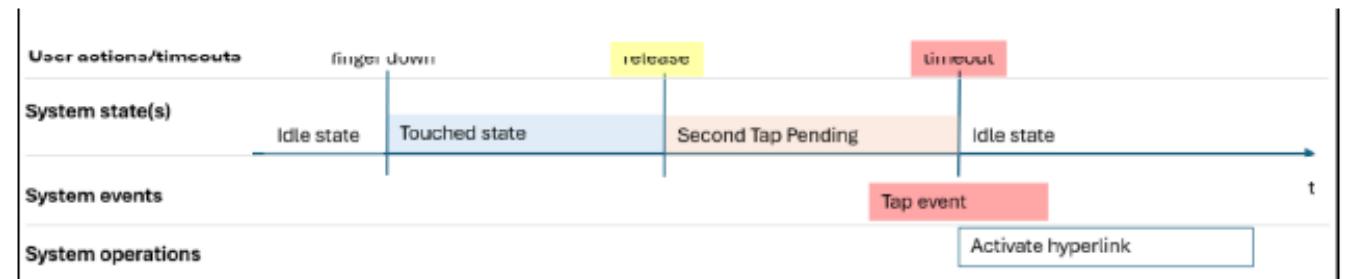
Bowens

Bowens

[0081] The Second Tap Pending state is now described. The Second Tap Pending state occurs after a user has tapped the touch surface. On entry a timeout is started. This is used to decide if the user has made a tap gesture. The initial touch location is stored. This is used to decide if the user is making a double tap gesture. The timeout expiry is checked. If the timeout expires, a tap event is generated and the state machine enters the Idle state. This means that the user had tapped the surface once, but not twice within the allowed time interval. If the user presses the touch surface with one finger, the distance of the second touch from the first is calculated. If it is less than a specified value, the state machine enters the Double Tap Pending state, as the user may be doing a double tap. If the distance between the first and second touches is more than the specified value, the state machine generates a tap event (for the previous tap gesture) and re-enters the Touched state as illustrated. The timeout parameter in the Second Tap Pending state determines how long after the user releases a touch a tap event is generated. If the user touches the surface again before the timeout expires, a double tap event could potentially be generated. The maximum time permitted from initial touch to generate an event in this state is the sum of the timeout periods for the Touch state and the Second Tap Pending state.

EX1005 at [0081]

Patent Owner Response



Pet., 68 (citing EX1003, ¶195).

POR at 55 (citing Pet. at 68)

Burrough

Burrough

[0080] Following block 1106, the zoom gesture method 1100 proceeds to block 1108 where the distance between at least the two fingers is compared. The distance may be from finger to finger or from each finger to some other reference point as for example the centroid. If the distance between the two fingers increases (spread apart) at 1110, a zoom-in signal is generated at 1112, otherwise a zoom out signal is generated at block 1114. The zoom-in signal, in turn, causes the haptic devices associated with the two fingers to provide a zoom-in haptic signal at 1116. Such a zoom in haptic signal can be, for example, faster (or slower) or more intense (or less intense) vibration as the distance between the two fingers increases. If the distance between two fingers decreases (close together), the zoom-out signal generated at block 1114 can cause the haptic devices associated with the two fingers to provide a zoom out haptic signal at 1118.

EX1007 at [0080]

Burrough

[0081] In most cases, the set down of the fingers will associate or lock the fingers to a particular GUI object being displayed. For example, the touch sensitive surface can be a touch screen, and the GUI object can be displayed on the touch screen. This typically occurs when at least one of the fingers is positioned over the GUI object. As a result, when the fingers are moved apart, the zoom-in signal can be used to increase the size of the embedded features in the GUI object and when the fingers are pinched together, the zoom-out signal can be used to decrease the size of embedded features in the object. The zooming typically occurs within a pre-defined boundary such as the periphery of the display, the periphery of a window, the edge of the GUI object, and/or the like. In some cases, a haptic effect can be provided giving the user a warning that the predefined boundary is being approached. The embedded features may be formed on a plurality of layers, each of which represents a different level of zoom. In most cases, the amount of zooming and the associated haptic effect varies according to the distance between the two objects. Furthermore, the zooming typically can occur substantially simultaneously with the motion of the objects. For instance, as the fingers spread apart or closes together, the object zooms in or zooms out at the same time and the corresponding haptic effect will change. Although this methodology is directed at zooming, it should be noted that it may also be used for enlarging or reducing. The zoom gesture method 1100 may be particularly useful in graphical programs such as publishing, photo, and drawing programs.

EX1007 at [0081]

Limitation [1.f]: Detection of a “Double Tap” Does Not Meet The Claimed Precondition

Double Tap Duration

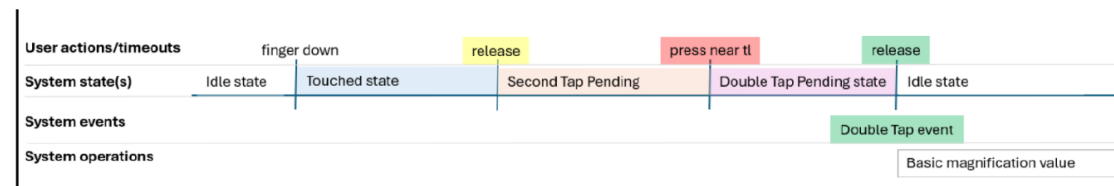


'114 Patent, Claim 1

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

Patent Owner Response

As explained above, Bowens discloses determining that a double-tap occurred by passing through a number of states, each associated with a different threshold and analysis. EX1007, [0080]–[0082]; *see also id.*, FIG. 1; EX2008, ¶97. Indeed, Petitioner’s own illustration confirms that recognizing a “double tap event” requires passing, in order, through three states:



Pet., 64 (citing EX1003, ¶190).

Double Tap Duration



'114 Patent, Claim 1

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

Patent Owner Response

Petitioner asserts that this sequence is sufficient to meet the claim language because “the release must occur before the ‘timeout/ tap, press’ transition from the Double Tap Pending state to the Pressed state.” *Id.*, 63. But, by its own words, **this is a measure of the time (duration) spent in the “Double Tap Pending state,” not the duration of the double-tap gesture**, which began on the “finger down” when exiting the “Idle state” several states earlier. EX2008, ¶98. Plainly, this mapping does not meet the claim language.

POR at 48

Limitation [1.i]: “Perform Other Action” Does Not Meet The Claimed Precondition

The Petition's Mapping – [1.i] (Ground 1)



'114 Patent, Claim 1

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation

Patent Owner Response

The Petition asserts: “a POSITA would have understood that, for the detected interrupt (step 203) to be sufficient to cause the mobile device to ‘perform other action’ (step 207), a magnitude greater than a minimum threshold value (e.g., the minimum threshold of an intentional user input) is relied upon, or rendered obvious, by Kim.” Pet., 25-26. Setting aside that “perform other action” does not identify any specific action or any specific user gesture and that Kim does not reference or suggest utilizing a “minimum threshold of an intentional user input,”¹¹ Petitioner’s mapping confirms it does not meet the claim.

POR at 52

Patent Owner Response

¹¹ Petitioner asserts that use of a “minimum threshold” “would have [been] understood” “[b]ased on Kim’s disclosure of ‘disregarding’ a received input.” Pet., 25-26. But, Kim discloses disregarding a received input event not because the gesture fails to meet a minimum threshold, but because: (a) the device is in “zoom mode” (not “selected mode” where “interrupts” occur) and (b) “the input event corresponds to none of” “a move event,” “a hold event,” or “a double tap event.” EX1004, [0053]; EX2008, ¶105 n.6. Thus, recognizing user gesture, but disregarding it because it has no assigned function, does not suggest adding a “minimum threshold” to Kim. EX2008, ¶105 n.6.

POR at 52-53, n.11

Petitioner's Mapping – [1.i] (Ground 2)

Patent Owner Response

Petitioner confirms that the “tap gesture” “*ceased* at the time labeled ‘release,’ highlighted yellow” in the figure above. Pet., 67-68. Yet, Petitioner then focuses on a period of time *beginning after the tap gesture has ceased* labeled “Second Tap Pending.” *Id.* Petitioner points to the duration *beginning* at “release” when *the* tap gesture has ceased and continuing until exceeding “a second magnitude (the “timeout/tap” transition from SecondTapPending to Idle).” *Id.* This period is, by Petitioner’s own admission, not *the* duration of *the* tap gesture as the claim language requires, but rather a duration of a period that begins after the tap gesture ends. EX2008, ¶112. This does not meet the plain language of the claims. *Id.* Rather, it uses hindsight bias is an attempt to rewrite “*the* duration of *the* gesture” to refer to any duration of any period used to identify a gesture. As discussed above, the plain language of the claims does not permit such a rewrite and Petitioner’s mapping fails.

POR at 55-56

“tap gesture” “*ceased* at the time labeled ‘release’” (POR at 55)

Patent Owner Response



Pet., 68 (citing EX1003, ¶195).

POR at 55

The Petition Inconsistently Maps the “First” and “Second” Threshold

The “second magnitude threshold” is necessarily higher than the “first magnitude threshold”



'114 Patent, Claim 1

[1.f] when a magnitude of a duration of the first threshold is less than a first magnitude threshold, perform an operation

...

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

No Motivation to Add Haptic Feedback to Kim's Double Tap Gesture

Petitioner's Mapping – [30.i]

'114 Patent, Claim 30

[30.pre] An apparatus, comprising:

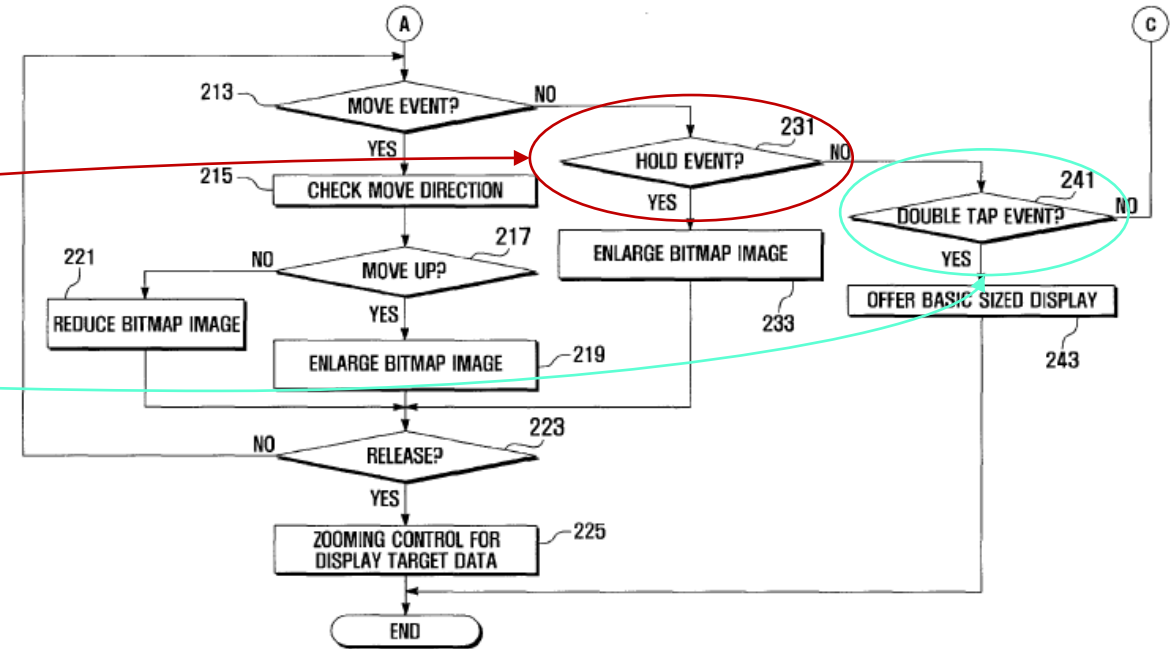
...

[30.g] during detection of at least a portion of the gesture before a completion thereof is detected, perform a scale operation ... ;

[30.i] after at least a portion of the scale operation, vibrate the apparatus and perform an action.

Add Burrough's
"haptic feedback."

Kim (Annotated)



POR at 15; EX1004, Fig.2b

Burrough

Burrough

[0080] Following block 1106, the zoom gesture method 1100 proceeds to block 1108 where the distance between at least the two fingers is compared. The distance may be from finger to finger or from each finger to some other reference point as for example the centroid. If the distance between the two fingers increases (spread apart) at 1110, a zoom-in signal is generated at 1112, otherwise a zoom out signal is generated at block 1114. The zoom-in signal, in turn, causes the haptic devices associated with the two fingers to provide a zoom-in haptic signal at 1116. Such a zoom in haptic signal can be, for example, faster (or slower) or more intense (or less intense) vibration as the distance between the two fingers increases. If the distance between two fingers decreases (close together), the zoom-out signal generated at block 1114 can cause the haptic devices associated with the two fingers to provide a zoom out haptic signal at 1118.

EX1007 at [0080]; POR at 60-61



Dr. Madisetti Declaration

121. Petitioner asserts that “Burrough teaches providing haptic feedback in response to user input, including zooming operations” (Pet., 46; EX1003, ¶136), but this is an overgeneralization of Burrough’s disclosure. In the section Petitioner cites, Burrough discloses detecting a “zoom gesture” and providing haptic feedback during an ongoing “zoom gesture,” EX1007, [0079]-[0081]. “If the distance between the two fingers increases (spread[s] apart),” “a zoom in signal is generated.” EX1007, [0080]. “The zoom-in signal, in turn, causes the haptic device associated with the two fingers to provide a zoom-in haptic signal,” which “can be, for example, faster (or slower) or more intense (or less intense) vibration as the distance between the two fingers increase[s].” EX1007, [0080]. Additionally, “the vibro-tactile response for the two fingers can be different due to the varying pressure applied by each finger.” EX1007, [0079].

EX2008 at ¶ 121; POR at 60-61

No Motivation for Proposed Modifications



Dr. Madisetti Declaration

122. Kim's double-tap user input gesture, however, does not involve an ongoing zoom operation, much less ongoing changing movement or ongoing changing pressure. EX1004, [0079]-[0081]. Rather, upon detection of the double-tap, Kim instantaneously returns to the "basic magnification" level (which itself provides visual feedback to the user). There is no ongoing zoom operation upon Kim's double tap. EX1004, [0106]. Thus, even if a POSITA were motivated to apply Burrough's disclosure to Kim, Burrough's teachings would at most suggest adding haptic feedback *during* a continuous zoom-in or continuous zoom-out operation, not upon recognition of a double-tap user input gesture.

EX2008 at ¶ 122; POR at 60-61