

Apple Inc. (Petitioner)
v.
Smith Interface Technologies, LLC (Patent
Owner)
Petitioner Demonstratives

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

Before Hon. Jameson Lee, Miriam L. Quinn, Jeffrey S. Smith
Administrative Patent Judges

APPLE 1027
Apple v. Smith Interface
IPR2024-01091

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Overview of the Instituted Grounds

Overview of the Instituted Grounds

Ground	'114 Patent Claims	Basis for Rejection
Ground 1A	1, ~~27~~ , 32	§§102/103: Kim
Ground 1B	34, ~~59~~ , 64	§103: Kim, Lang
Ground 1C	30	§103: Kim, Burrough
Ground 1D	62	§103: Kim, Lang, Burrough
Ground 2A	1, ~~27~~ , 32	§103: Kim, Bowens
Ground 2B	34, ~~59~~ , 64	§103: Kim, Bowens, Lang
Ground 2C	30	§103: Kim, Bowens, Burrough
Ground 2D	62	§103: Kim, Bowens, Lang, Burrough

Pet., 2; see Inst. Dec., 7, 42 ; POR, 4

state.” DI, 16-18. Without agreeing with the Board’s legal findings, and accepting the Board’s explicit rejection of Patent Owner’s argument as negating any disavowal, Patent Owner intends to file a statutory disclaimer of Claims 27 and 59.

Background Info

The '114 Patent and Prior Art

Exemplary Claim of the '114 Patent

[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.

The '114 Patent: Claim 1 – The “when” limitations

[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.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.

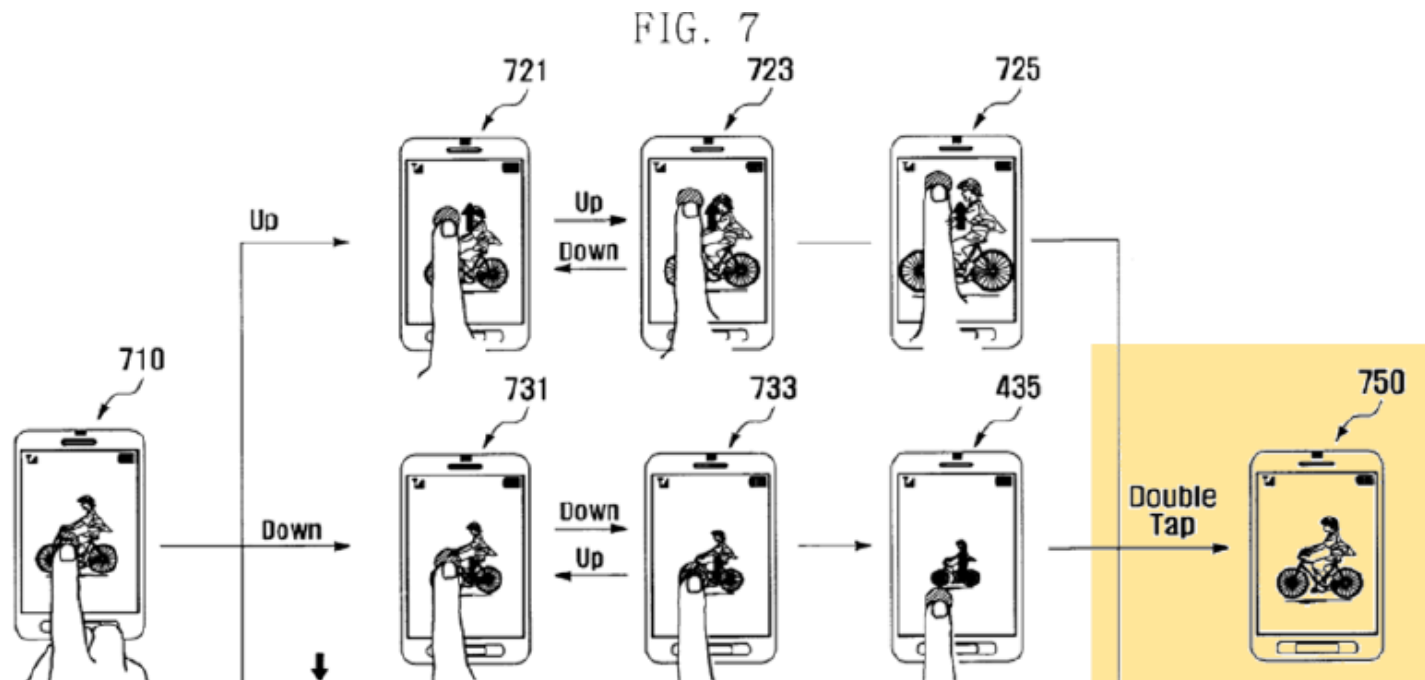
The “when” limitations

As they are alternatives, fewer than three “when” conditions need to be met in any scenario meeting the claim language.

On this preliminary record, we agree with Patent Owner to the extent that antecedent basis of “the gesture being detected on the touch screen on the object” recited in Limitations [1.f, 1.g, and 1.i] refers to “a gesture on the touch screen on the object” which is “detect[ed]” in Limitation [1.e]. The three “when” limitations, however, appear to be written in the alternative such that not all of three recited “when” conditions would be met in any scenario meeting the claim language.

Because the “when” limitations present alternative scenarios, on this preliminary record, we do not agree with Patent Owner that the Petition should be denied because Petitioner has not identified the same gesture having three different durations. Prelim. Resp. 18–25. Rather, we view as appropriate for trial the issue as to whether the “when” limitations are presented in the alternative such that not all of the limitations need to be satisfied in order to meet the claim. *See Brown v. 3M*, 265 F.3d 1349, 1352–

[1.f]: Kim performs an operation “when a magnitude of a duration ... is less than a first magnitude threshold”

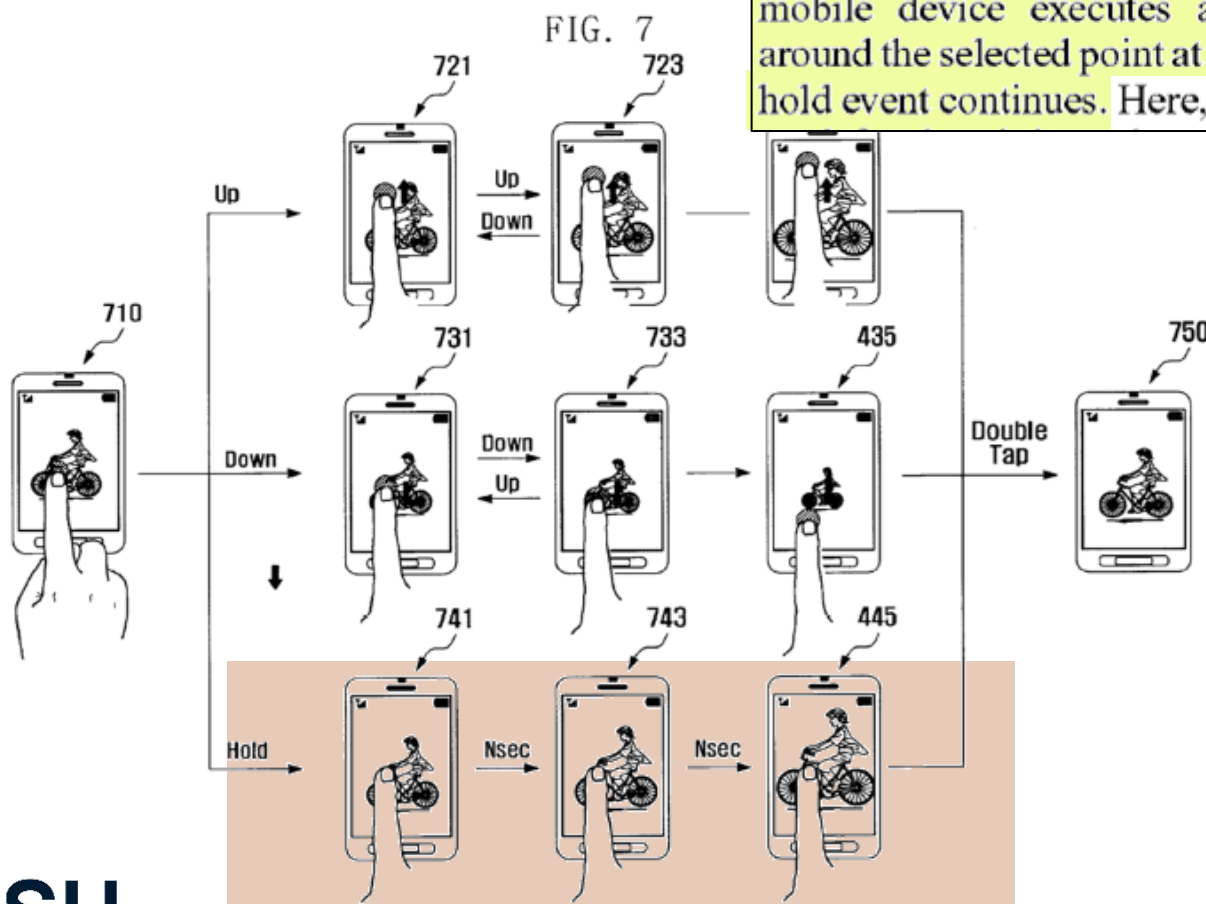


[0106] That is, a user can release a hold event from the screen in the above zoom-in process based on the hold event. Then, in response to such a touch release, the mobile device displays an enlarged display target data around the selected point on the touch screen. Thereafter, a user can invoke a double tap event on the screen. Then, in response to the double tap event, the mobile device displays target data with a given basic magnification value, as indicated by the reference number 750.

APPLE-1004, [0106], FIG. 7

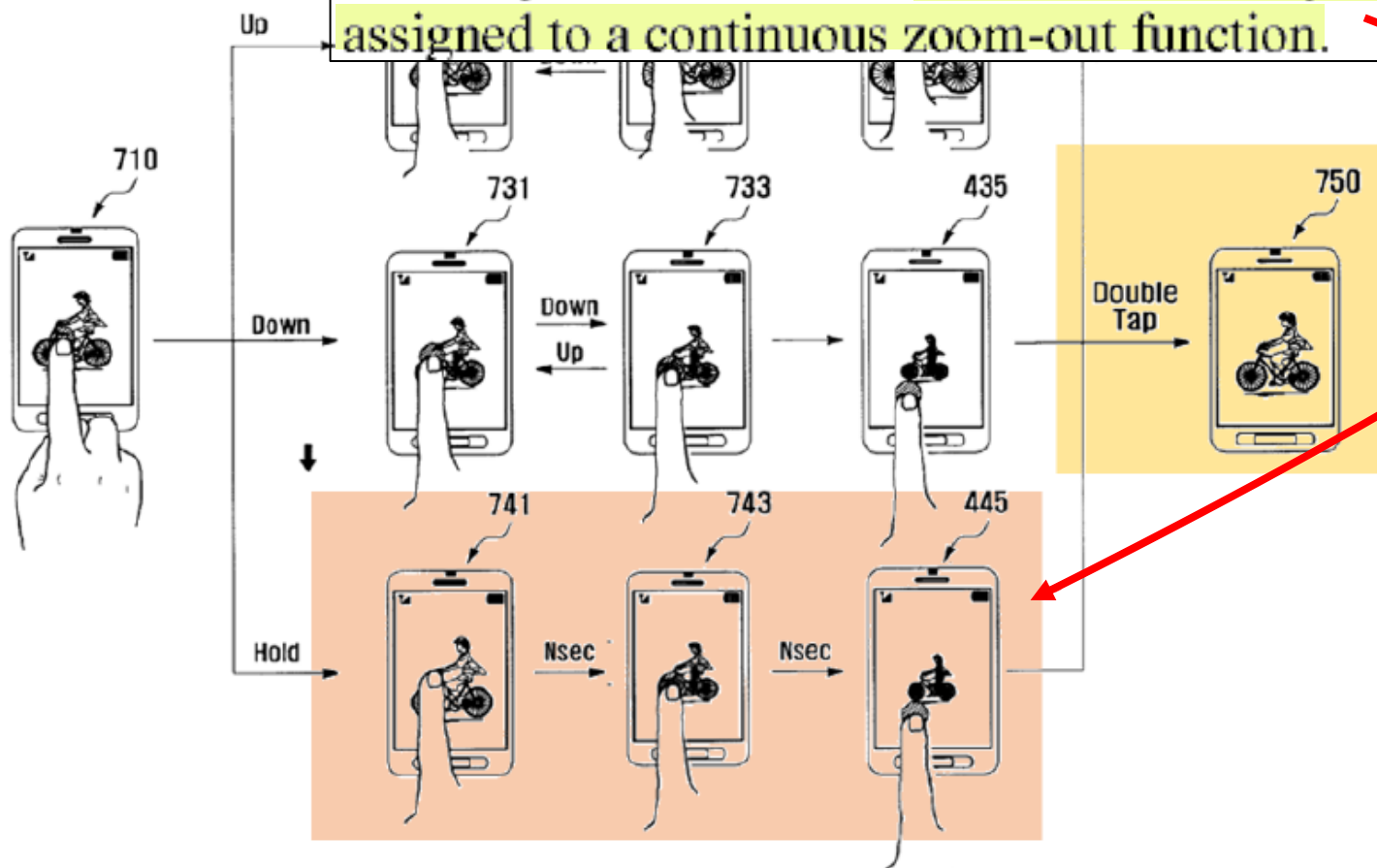
[1.g]: Kim performs scaling “when the magnitude of the duration ... is greater than the first magnitude threshold”

[0104] In the third place, reference numbers 741, 743 and 745 show a continuous zoom-in action depending on a hold event. As shown, a user can invoke the hold event at a selected point through a touch input such as tap and hold. Then the mobile device executes a continuous zoom-in function around the selected point at given periodic intervals while the hold event continues. Here, a periodic interval can be one of

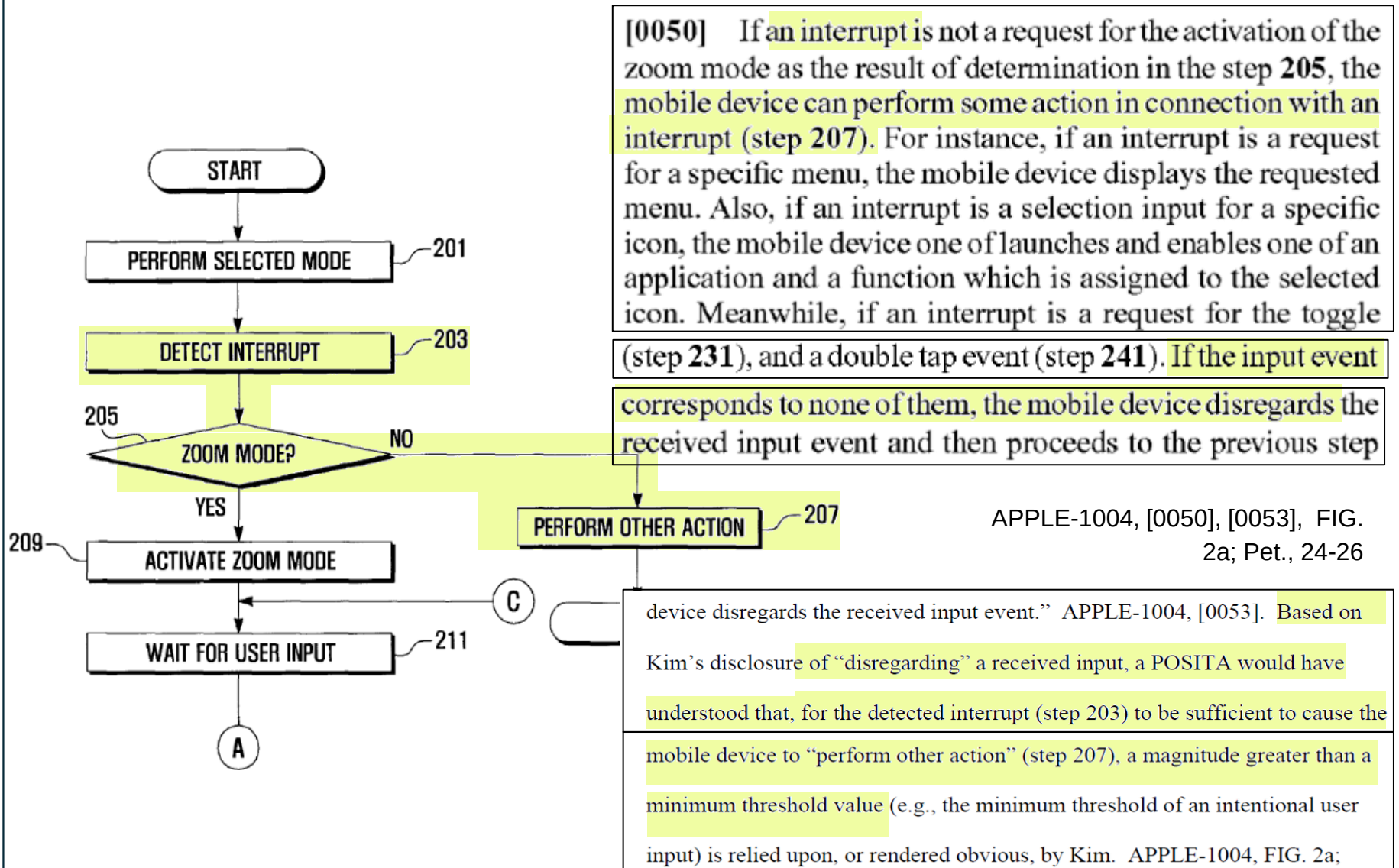


[1.g]: Kim performs scaling “when the magnitude of the duration ... is greater than the first magnitude threshold”

[0107] Meanwhile, the above-discussed case the hold event is assigned to a continuous zoom-in function is an exemplary case only. In another case, the hold event may be alternatively assigned to a continuous zoom-out function.



[1.i]: Kim performs another operation “when the magnitude of the duration ... is greater than a second magnitude threshold”



Issue 1

Claim Construction / The Board's Questions

The Board authorized briefing on claim construction

Order re claim construction briefing

In its authorized briefing, each party may wish to address the following as well as the legal basis for its position:

express claim construction of the claim term “gesture”;

express claim construction of the claim term “a magnitude of a duration of the gesture”;

whether conditional limitations [1.f, 1.g. and 1.i] could be met by a single detected gesture;

whether conditional limitations [1.f, 1.g, and 1.i] present alternatives such that no magnitude of the duration of a single detected gesture could meet all three limitations;

whether conditional limitations [1.f, 1.g, and 1.i] could be met by different gestures in which each gesture has a different duration that satisfies different alternatives; and

whether or not all of conditional limitations [1.f, 1.g, and 1.i] need to be met in order to satisfy the claim and, if not all, which ones need to be met.⁴

Issue 1A

“Gesture”

No express construction of a “gesture” is required

Dr. Cockburn’s Supplemental Declaration

18. For purposes of the IPR, the plain and ordinary meaning of “gesture” suffices. Notably, both Kim and Bowens explicitly teach a “gesture.” APPLE-1004, Abstract; APPLE-1005, [0056], [0065]; Moreover, the ’114 Patent broadly treats the term “gesture” as including a “user input defined by inputs, flags, and signals,” consistent with a POSITA’s understanding. APPLE-1001, 58:13-15 (“gesture input refers to the collection of inputs, flags, and signals by which a gesture is identified and parameterized”); *see id.*, 58:23-49, 62:4-16; *but see id.*,

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]

but that the conditional limitations are not required to be read as co-mingled. As further discussed in Petitioner’s Reply, Smith’s interpretations are inconsistent and flawed for numerous reasons. Reply, §II.B-F.

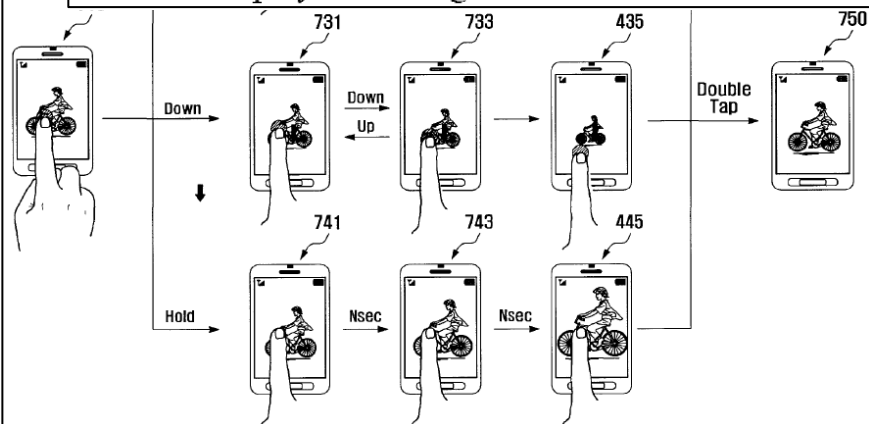
Kim and Bowens expressly teach a “gesture”

Kim

(57)

ABSTRACT

A mobile device has a touch sensitive surface such as a touch screen. In a touch-based zooming control method, the mobile device displays target data of a selected content on a screen. While the target data is displayed, the mobile device activates a zoom mode in response to a given gesture or input event. Then, the mobile device receives a touch-based **gesture** input which starts from a specific point on the target data, and executes a zooming function such as a zoom-in and a zoom-out in response to the received gesture input. Particularly, a continuous zooming control in various zooming rates is possible based on a single touch **gesture**. A toggling-based zooming control is also possible. A bitmap image is used for a rapid real-time display of the target data.



Bowens

[0056] Tap: A tap happens when the user quickly touches and releases the touch surface. No significant movement takes place while the user's finger is on the touch surface. It is characterized by a short touch duration. This could be used, for example, to activate a hyperlink on a displayed web page.

[0057] Double Tap: A double tap happens when the user quickly touches and releases the touch surface twice in quick succession. No significant movement takes place while the user's finger is on the touch surface, or between successive touches. It is characterized by short touch durations, and a short gap between the first release and the second press. This could be used, for example, to select a word in a displayed document.

[0065] Tap: A tap event is generated when the user makes a tap gesture.

[0066] Double Tap: A double tap event is generated when the user makes a double tap gesture.

Issue 1B

“a magnitude of a duration of the gesture being detected”

Petitioner offers a consistent interpretation of “a magnitude of a duration of the gesture being detected”

Claim Construction Brief

First, as discussed in more detail below, “a magnitude of a duration of the gesture being detected”² would not have been foreclosed from including the magnitude³ of the duration of any gesture being detected, which includes the duration magnitude of any part of the inputs, flags, and signals that constitute the gesture being detected. APPLE-1022, ¶20. This interpretation is proper at least

because it is not possible for any single duration magnitude of a single gesture to be both less than (per limitation [1.f]) and greater than (per limitation [1.g]) a first magnitude threshold—a point on which Smith agrees as reflected by its offering of different constructions for a “magnitude”—one that includes a period of time “ending at the conclusion of the gesture” for limitation [1.f] and one that includes a period of time “ending at the time of the execution of the logic or at the conclusion of the gesture” for limitations [1.g] and [1.i] (POR, 23-24), though dependent claims contemplate more than one of the conditions of limitations [1.f], [1.g], and [1.i] being met. *E.g.*, APPLE-1001, 98:10-32 (cl. 10), 108:4-13 (cl. 33), 109:14-30 (cl. 43), 119:6-14 (cl. 65); APPLE-1022, ¶¶21-22. Thus, the “magnitude of the duration of the gesture being detected” for each of limitations [1.f], [1.g], and [1.i] should be based on the gesture from limitation [1.e], without being co-mingled with one another. APPLE-1022, ¶23.

Petitioner offers a consistent interpretation of “a magnitude of a duration of the gesture being detected”

“a magnitude of a duration of the gesture being detected”
contemplates *timing of evaluation*

While the Board invited discussion of the term “a magnitude of a duration of the gesture,” this term is best understood when also including “being detected.” That is, each independent claim refers to a gesture that is “underway of being detected,” as Dr. Cockburn testified. EX2013, 117:11-17. The full term is recited in each conditional limitation, so gesture detection is ongoing as it relates to the particular time threshold (e.g., first magnitude threshold). Thus, “a magnitude of a duration of the gesture being detected” should be considered *at the time of evaluation of the respective threshold condition* (1f, 1g, 1i). APPLE-1022, ¶24.

Smith's interpretation is inconsistent

- “[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]” refers to logic determining that the length of a period of time beginning at the start of the gesture and ending at the conclusion of the gesture is less than a first magnitude threshold.

[1.f]

- “[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 ...” refers to logic determining that the length of a period of time beginning at the start of the gesture and ending at the time of the execution of the logic or at the conclusion of the gesture is greater than a first magnitude threshold. EX2008, ¶59.

[1.g]

[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]” refers to logic determining that the length of a period of time beginning at the start of the gesture and ending at the time of the execution of the logic or at the conclusion of the gesture is greater than a second magnitude threshold. EX2008, ¶59.

Dependent claim 2 would be rendered superfluous in view of Smith's flawed requirement of cessation of the gesture

POR

- “[when]/[based on]/[in response to] a magnitude of a duration of the [1.f] gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an [operation]/function]” refers to logic determining that **the length of a period of time beginning at the start of the gesture and ending at the conclusion of the gesture is less than a first magnitude threshold.** EX2008, ¶59.⁸

2. The apparatus of claim 1, wherein the apparatus is configured such that, when the magnitude of the duration of the gesture being detected on the touch screen on the object is less than the first magnitude threshold, the operation is performed **after a cessation of the gesture is detected.**

Dependent claim 26 highlight flaws with Smith's requirement of cessation of the gesture

POR

- “[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]” refers to logic determining that **the length of a period of time beginning at the start of the gesture and ending at the conclusion of the gesture** is less than a first magnitude threshold. EX2008, ¶59.⁸

[1.f]

'114 Patent, claim 26 (excerpted)

when the magnitude of the duration of the gesture being detected on the touch interface on the object is less than the first magnitude threshold **includes upon a cessation of the magnitude of the duration of the gesture being detected** on the touch interface on the object when the magnitude of the duration of the gesture being detected on the touch interface on the object is less than the first magnitude threshold;

POR, 21-22; APPLE-1001, 103:13-21

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Dependent claim 26 highlight flaws with Smith's requirement of cessation of the gesture

POR

- “[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]” refers to logic determining that the length of a period of time beginning at the start of the gesture and ending at the conclusion of the gesture is less than a first magnitude threshold. EX2008, ¶59.⁸

[1.f]

'114 Patent, claim 26 (excerpted)

when the magnitude of the duration of the gesture being detected on the touch interface on the object is less than the first magnitude threshold includes at least one point in time after the magnitude of the duration of the gesture being detected on the touch interface on the object is less than the first magnitude threshold;

POR, 21-22; APPLE-1001, 103:28-33; Reply, 9-12

Smith's expert neither addressed nor familiarized himself with the dependent claims

Dr. Madisetti's Deposition

2 Q. So, did your review of dependent
3 claims of the '114 patent help you to gain an
4 understanding of the independent claims?

5 A. To the extent that I referenced them
6 in my declaration.

7 Q. If they are not referenced in your
8 declaration, did they not inform your
9 understanding?

10 A. As I said, I did not offer opinions
11 on certain -- on all of the dependent claims, on
12 all the claims in that respect to the extent that
13 I have an opinion.

14 I provide the opinion on the basis
15 in my declaration.

7 Q. So, sitting here right now, is there
8 any other opinion that you omitted from your
9 declaration?

10 A. I don't believe so.

Dr. Madisetti's Declaration

1. [A] / [The] Gesture and Magnitude Of [A] / [The] Duration of
The Gesture

58. 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],

**No mention of dependent claims in
Dr. Madisetti's discussion of "[A] /
[The] Gesture and Magnitude Of [A] /
[The] Duration of The Gesture"**

gesture the gesture. Specifically, the plain duration of the
requires gesture" is the magnitude of a period that begins when the gesture begins—which is
Here, the upon detection of the touch on the touch screen. 2004 ("duration" means "the
initial de time during which something exists or lasts"); EX2005 ("duration" means "the time
[32.e], [3 during which something continues"). A period that starts after the gesture is not a
condition duration of the gesture. Applying this plain language to each of the three logical
do not sh 4 A PO instances:

23 of starting a refers
Provid 61 becau 3 A POSITA would understand that "magnitude of a duration" includes the length of
fact th numerous concl the duration.
such t where th which
input user input

31

32

33

Limitation [1.i].

APPLE-1023, 60:2-15, 61:7-10; EX2008, ¶¶ 58-61

Issue 1C

Whether conditional limitations [1.f], [1.g], and [1.i] could be met by a single detected gesture; or whether the conditional limitations present alternatives such that no magnitude of the duration of a single gesture could meet all three limitations

Claim recites conditions in the alternative

'114 Patent, Claim 1, elements [1.f] and [1.g]

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

Dependent claim 9 informs the scope of claim 1, which must be broad enough to include the dependent claims

'114 Patent, Claim 9

9. The apparatus of claim 1, wherein the apparatus is configured such that at least a portion of the scaling involves a continuous scaling function that is a continuous function of the magnitude of the duration of the gesture being detected on the touch screen on the object, only 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 and is less than the second magnitude threshold.

Dependent claim 10 informs the scope of claim 1, which must be broad enough to include the dependent claims

'114 Patent, claim 10

10. The apparatus of claim 1, wherein the apparatus is configured such that

the magnitude of the duration of the gesture being detected on the touch screen on the object remains less than the first magnitude threshold for a **first gesture** to cause only the operation to be performed upon a cessation of the magnitude of the duration of the gesture being detected on the touch screen on the object;

the magnitude of the duration of the gesture being detected on the touch screen on the object surpasses the first magnitude threshold and remains less than the second magnitude threshold for a **second gesture** to cause the scaling without the operation nor the another operation being performed; and

the magnitude of the duration of the gesture being detected on the touch screen on the object surpasses both the first and second magnitude thresholds for a **third gesture** to cause the scaling and the another operation to be performed without the operation being performed.

Dr. Madisetti did not consider the dependent claims in his analysis of this question

Dr. Madisetti's Deposition

2 Q. So, did your review of dependent
3 claims of the '114 patent help you to gain an
4 understanding of the independent claims?

5 A. To the extent that I referenced them
6 in my declaration.

7 Q. If they are not referenced in your
8 declaration, did they not inform your
9 understanding?

10 A. As I said, I did not offer opinions
11 on certain -- on all of the dependent claims, on
12 all the claims in that respect to the extent that
13 I have an opinion.

14 I provide the opinion on the basis
15 in my declaration.

7 Q. So, sitting here right now, is there
8 any other opinion that you omitted from your
9 declaration?

10 A. I don't believe so.

Dr. Madisetti's Declaration

118. Moreover, dependent claims of the '114 Patent confirm the understanding that in Claim 1 the second magnitude threshold is greater than the first magnitude threshold. Claim 8, which depends from claim 1, supports that the most logical reading of the claim is that the "second magnitude threshold" of Limitation [1.i] is greater than the "first magnitude threshold" of Limitations [1.f and 1.g]:

Only mention of
dependent claims in Dr.
Madisetti's Declaration
relates to claim 8 and
the relationship between
the first magnitude
threshold and the
second magnitude
threshold

Smith's and Dr. Madisetti's positions on this Board question are evasive

The Board's Question

whether conditional limitations [1.f, 1.g. and 1.i] could be met by a single detected gesture;

Patent Owner's Response

"[W]hether conditional limitations [1.f, 1.g. and 1.i] could be met by a single detected gesture." A single instance of user input that met Limitation [1.f] would not also meet [1.g] or [1.i] and, vice versa. EX2008, ¶64. A single instance of user input that met Limitation [1.g] may also, but need not, meet Limitation [1.i]. *Id.* This is fully consistent with the Claims' recitation of logic used to evaluate numerous instances of user input all meeting the requirements of "the duration." *Id.*

Dr. Madisetti's Declaration

64. "[W]hether conditional limitations [1.f, 1.g. and 1.i] could be met by a single detected gesture." A single instance of user input that met Limitation [1.f] would not also meet [1.g] or [1.i] and, vice versa. A single instance of user input that met Limitation [1.g] may also, but need not, meet Limitation [1.i]. This is fully consistent with the Claims' recitation of logic used to evaluate numerous instances of user input all meeting the requirements of "the duration."

Smith's Sur-reply remains evasive

Institution Decision

On this preliminary record, we agree with Patent Owner to the extent that antecedent basis of “the gesture being detected on the touch screen on the object” recited in Limitations [1.f, 1.g, and 1.i] refers to “a gesture on the touch screen on the object” which is “detect[ed]” in Limitation [1.e]. The three “when” limitations, however, appear to be written in the alternative such that not all of three recited “when” conditions would be met in any scenario meeting the claim language.

Patent Owner's Sur-reply

instances of user input.” POR, 24–25. Thus, the fact that no “single detected gesture,” to the extent the Board used that term to refer to a single instance of user input,¹ could meet all of the conditional Limitations is not a flaw in the claim language, but rather reflects the fact that the claims recite logic operating on numerous “detected gestures” (i.e., instances of user input).

¹ Petitioner criticizes Patent Owner for using the term “single instance of user input” rather than “single detected gesture.” Paper 22, 7. The POR directly answers the Board’s questions, confirming Patent Owner does not dispute that “single detected gesture,” to the extent the Board used that term to refer to a specific instance of user input “will not meet all three Limitations.” POR, 29.

Petitioner does not assert that the plain language of the claims is internally inconsistent, nor does Petitioner rewrite the claims

**Rebuttal
to:**

“Petitioner asserts that the plain language is internally inconsistent as an excuse to rewrite it. Id., 6-11” Sur-reply, 3

Petitioner’s Claim Construction Brief only argues that Smith’s positions are inconsistent

No express claim construction for this term is required. However, the following discussion provides insight as to the manner in which this term would have been understood by a POSITA when read within the context of the specification and independent claims—and, in particular, the conditional limitations. In contrast, Smith’s approach does not consistently apply the antecedent basis of the claims and is inconsistent with dependent claims. APPLE-1022, ¶19.

CC Brief, 3

Nonetheless, Smith seemingly indicates that no single gesture⁵ would meet all of limitations [1.f], [1.g], and [1.i] (POR, 29, 35), while in contradictory fashion, claiming that it directed the Board to “written description that describes a single gesture having three different durations that result in three different actions”⁶ (POR, 21 n.6). Similarly inconsistent, despite its response that no single gesture would meet all limitations, Smith concludes that “[a]ll [limitations] must be met.” POR, 2.

CC Brief, 8

As discussed in Petitioner’s Reply, Smith’s and Dr. Madisetti’s position regarding the Board’s inquiry is evasive, inconsistent, and unclear. Reply, §II.B.

CC Brief, 7

Sur-reply, 3; CC Brief, 3, 6-11

The Board correctly observed that Smith has not identified “a single gesture having three different durations that result in three different actions”

Institution Decision

As noted earlier, Patent Owner argues that “the Petition maps to three *different* gestures associated with three *different* durations beginning at *different* points in time” and so does not “meet the plain language of the claims.” Prelim. Resp. 1 (emphasis in original); Prelim. Resp. 22 (asserting

duration). Patent Owner, however, has not directed us to any portion of the specification of the challenged patent that describes the subject matter of claim 1, much less a portion of the written description that describes a single gesture having three different durations that result in three different actions.

Smith “has not done so”

Patent Owner’s Response

⁶ The Institution Decision states: “Patent Owner, however, has not directed us to any portion of the specification of the challenged patent that describes the subject matter of claim 1, much less a portion of the written description that describes a single gesture having three different durations that result in three different actions.” Paper

8 (“D.I.”), 24. While Patent Owner has done so in this Paper, respectfully, it is not

Claim Construction Brief

Nonetheless, Smith seemingly indicates that no single gesture⁵ would meet all of limitations [1.f], [1.g], and [1.i] (POR, 29, 35), while in contradictory fashion, claiming that it directed the Board to “written description that describes a single gesture having three different durations that result in three different actions”⁶ (POR, 21 n.6). Similarly inconsistent, despite its response that no single gesture would meet all limitations, Smith concludes that “[a]ll [limitations] must be met.” POR, 2.

Dr. Madisetti admitted he has not identified “a single gesture having three different durations that result in three different actions”

Institution Decision

As noted earlier, Patent Owner argues that “the Petition maps to three *different* gestures associated with three *different* durations beginning at *different* points in time” and so does not “meet the plain language of the claims.” Prelim. Resp. 1 (emphasis in original); Prelim. Resp. 22 (asserting

duration). Patent Owner, however, has not directed us to any portion of the specification of the challenged patent that describes the subject matter of claim 1, much less a portion of the written description that describes a single gesture having three different durations that result in three different actions.

Dr. Madisetti’s Deposition

ID, 24, APPLE-1023,
122:17-21, 127:19-128:7

17 **Q.** So, sitting here right now, can you
18 think of any use case that would meet the claims?

19 MR. LICYGIEWICZ: Objection to form.

20 THE WITNESS: As I explained,
21 counsel, that is not what I was asked to do.

19 **Q.** Does the '114 patent provide an
20 example of a single gesture having three
21 different durations that result in three
22 different actions?

1 A. I don't think I offered an opinion
2 with respect to that issue, counsel, in my
3 declaration.

4 If asked and allowed to do so in the
5 future, I may do so.

6 But, I don't think I have offered
7 such an opinion in my declaration.

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner’s Sur-reply

rewriting the claims at Petitioner urges. Reply, 7–8. Petitioner appears to criticize Patent Owner and Dr. Madisetti for not identifying an example in the specification “of a single gesture having three different durations that result in three different actions.” *Id.* Again, the POR identifies substantial disclosures of “multi-part, multi-action gestures” and use of a “decision tree” and a “phase space path” to detect multiple aspects of a gesture. POR, 4–9. And the POR explained how this disclosure

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner's Response

II. OVERVIEW OF THE '114 PATENT

A. Multi-Part Pattern-Based Gestures

As of the priority date for the '114 Patent, touch screen mobile devices were becoming increasingly capable of performing complex tasks that required more control than was possible with the existing basic input methods. EX2008, ¶24. Further, limited screen real estate meant that input and output techniques used for more complex tasks on desktop computers could not be used on touch screen mobile devices. *Id.*, ¶26. The '114 Patent addresses this shortcoming by enabling users to

operate new powerful mobile devices and their feature-rich applications through implementation of multi-part gestures where users can take successive actions and can receive feedback at each stage. *Id.*

Dr. Madisetti's Declaration

VI. OVERVIEW OF THE '114 PATENT

A. Multi-Part Pattern-Based Gestures

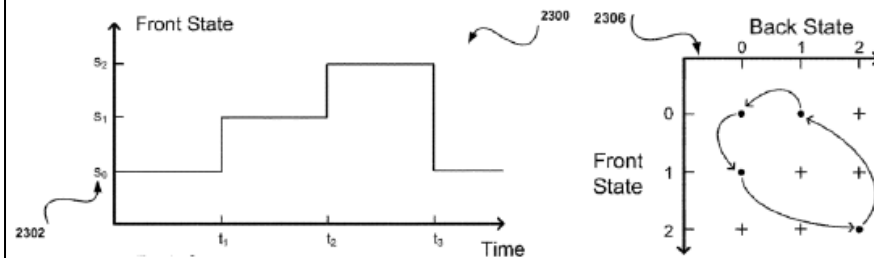
24. At the time of the '114 Patent's priority date, touch screen mobile devices were becoming increasingly capable of more complex tasks that required more control than possible with traditional, basic input methods. As more capable and precise sensors were being placed in mobile devices, the corresponding options for designers were increasing.

26. Further, limited screen real estate meant that input and output techniques used for more complex tasks on desktop computers could not be used. The '114 Patent addresses this shortcoming by enabling users to operate these new powerful mobile devices, which had less real estate, and their feature-rich applications through implementation of multi-part gestures where users can take successive actions and receive feedback at each stage.

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner’s 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].

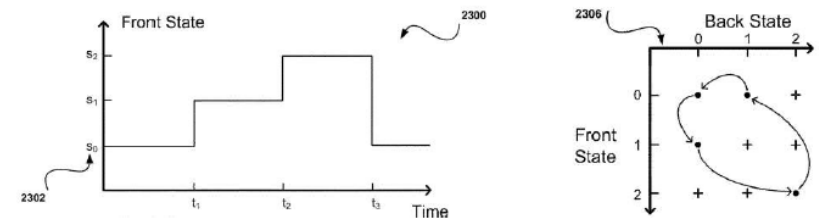


EX1001, FIG. 23; EX2010, FIG. 28.

Each state, and transition between states, may be defined by factors including “contact point changes” and “the time spent on each leg of the path through phase

Dr. Madisetti’s Declaration

27. 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[s] 2302” are “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. Each state, and transitions between states, may be defined by factors including “contact point changes” and “the time spent on each leg of the path through phase space.” EX1001, 73:47-74:7; EX2010, [00567]-

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner's Response

space.” EX1001, 73:47-74:7; EX2010, [00567]-[00570]. Consistent with the “decision tree” aspect of these pattern-based gestures, multiple patterns may share the same starting (and intermediate) points. EX1001, 75:24-26; EX2010, [00581]; EX2008, ¶27.

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.

Dr. Madisetti's Declaration

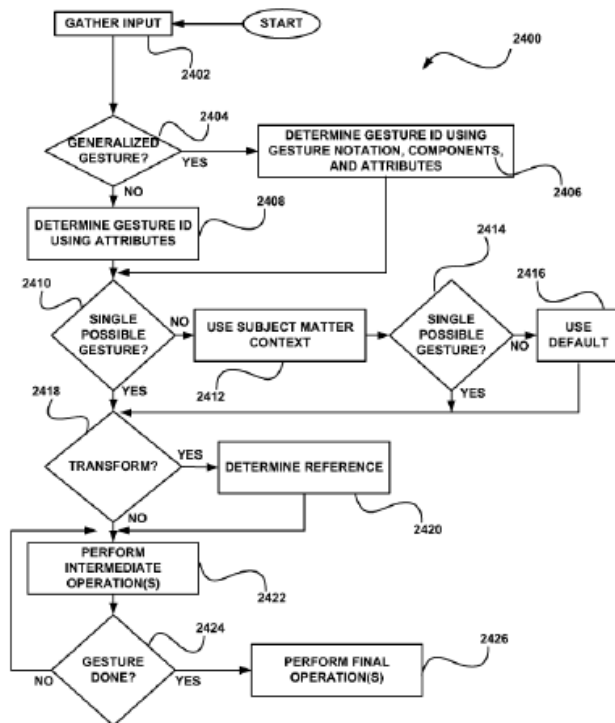
[00570]. Consistent with the “decision tree” aspect of these pattern-based gestures, multiple patterns may share the same starting (and intermediate) points. EX1001, 75:24-26; EX2010, [00581]. Consistent internal device logic is important to keep a user engaged and appropriately aware of the response for a desired task. A user wishing to execute a final action contingent on a previous device state would be unsuccessful if the device did not predictably follow a decision tree. Predictability in starting and intermediate points is enabled by decision tree logic.

28. To detect these pattern-based gestures, the '918 Provisional, which the '114 Patent incorporates by reference (EX1001, 1:22-24), discloses techniques for “gesture differentiation,” which is distinguished from simply detecting a “basic user interaction (*i.e.*, button press, basic application interaction, etc.).” EX2010, [00498], [00502]. The process begins by “determine[ing] whether there is any meaningful

user input,” including applying a “threshold above which user interaction may rise before it may be deemed meaningful.” EX2010, [00501]-[00502]. Detecting the gesture may involve “gesture subject matter context,” including “objects displayed at or near the location of the gesture.” EX2010, [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. EX2010, [00512]. A touch-capable device offers a user the ability to input at a desired location on the touch screen. The ability for a user to

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

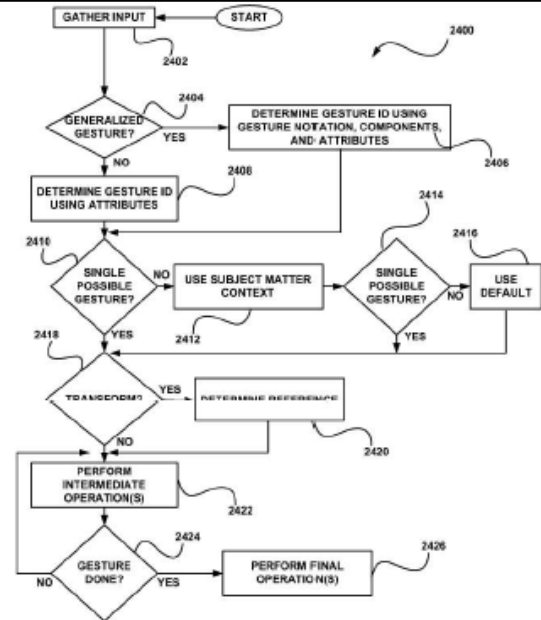
Patent Owner's Response



EX2010, FIG. 24.

As the flow chart shows, multiple complete patterns may share the same starting (and intermediate) points. EX2008, ¶29. Consistent with the multi-part

Dr. Madisetti's Declaration



EX2010, FIG. 24.

29. Again, as indicated by the flow chart, multiple complete full patterns may share the same starting (and intermediate) points. From the flow chart, the start of a pattern begins with gathering input at block 2402. Further blocks, for example block 2406, describe gesture notation, components, and attributes. This reveals that the input gathering at one location could be at the same location based on later

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner’s Response

starting (and intermediate) points. EX2008, ¶29. Consistent with the multi-part nature, the device may perform “intermediate operations associated with the identified gesture.” EX2010, [00521]. “[E]ach execution of intermediate gesture operations may trigger a display update (*i.e.* rendering, etc.).” *Id.*, [00524]. One purpose of these intermediate gestures is so “a user may receive feedback on their gesture before terminating the interaction.” *Id.*, [00522].

A “gesture may be ended by ending one or more user inputs” or “by performing a different gesture” at which time “the final operations associated with the identified gesture are performed.” *Id.*, [00526]-[00528]; EX2008, ¶30. “For example, in one embodiment, a gesture which triggers the display of a pop-up menu and allows a user to cycle through menu items may have as a final operation the selection of the current menu item and removal of the pop-up menu.” EX2010, [00529].

Dr. Madisetti’s Declaration

defined features of that input. Furthermore, the steps of the flow chart illustrate that a gesture pattern involves multiple steps that may share the same starting point as well as intermediate points. For example, a different gestures or input type at the

same location would thus share the same starting point. Other examples consistent with the ’114 patent could include a common starting point in a pressure level. In both instances, the logic of the device analyzes a parameter associated with user contact. The same pressure level again could be the same starting point. Consistent with the multi-part nature, the device may perform “intermediate operations associated with the identified gesture.” EX2010, [00521]. “[E]ach execution of intermediate gesture operations may trigger a display update (*i.e.* rendering, etc.).” EX2010, [00512]. [00524]. One purpose of these intermediate gestures is so “a user may receive feedback on their gesture before terminating the interaction.” EX2010, [00522].

30. A “gesture may be ended by ending one or more user inputs” or “by performing a different gesture” at which time “the final operations associated with the identified gesture are performed.” EX2010, [00526]-[00528]. “For example, in one embodiment, a gesture which triggers the display of a pop-up menu and allows a user to cycle through menu items may have as a final operation the selection of the current menu item and removal of the pop-up menu.” EX2010, [00529].

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner's Response

Consistent with the '918 Provisional's disclosure of detecting multi-part pattern-based gestures through gesture differentiation, the '114 Patent describes a process by which a “gesture is identified from gesture input.” EX1001, 58:11; EX2010, [00385]; EX2008, ¶31. The process begins by “determin[ing] if a touch event has occurred.” EX1001, 58:6; EX2010, [00383]. “If it is determined that a touch event has occurred, then the initial touch event attributes are determined.” EX1001, 58:8-9; EX2010, [00384]. Touch event attributes may include “one or more measurable aspects of the user interaction which resulted in a touch event,” EX1001, 55:1-3; EX2010, [00359], including *e.g.*, “gesture input” from which “a gesture may be identified.” EX1001, 58:26-27; EX2010, [00388]; EX2008, ¶31. Such gesture inputs may include “touch event attributes” evaluated “both initial[ly] and over time.” EX1001, 58:20; EX2010, [00386]; EX2008, ¶31. Another example may include the “time to complete [a] gesture.” EX2010, [00403]; EX2008, ¶31.

The '114 Patent distinguishes between gestures that may be identified solely from initial touch event attributes and “gestures [that] may only be identified after the gesture has been performed for some period of time.” EX1001, 58:28-30; EX2010, [00388]; EX2008, ¶31.

Dr. Madisetti's Declaration

31. Consistent with the '918 Provisional's disclosure of detecting multi-part pattern-based gestures through gesture differentiation, the '114 Patent describes a process by which a “gesture is identified from gesture input.” EX1001, 58:11; EX2010, [00385]. The process begins by “determin[ing] if a touch event has

occurred.” EX1001, 58:6; EX2010, [00383]. “If it is determined that a touch event has occurred, then the initial touch event attributes are determined.” EX1001, 58:8-9; EX2010, [00384]. Touch event attributes may include “one or more measurable aspects of the user interaction which resulted in a touch event,” EX1001, 55:1-3; EX2010, [00359], including *e.g.*, “gesture input” from which “a gesture may be identified.” EX1001, 58:26-27; EX2010, [00388]. Such gesture inputs may include “touch event attributes” evaluated “both initial[ly] and over time.” EX1001, 58:20; EX2010, [00386]. Another example may include the “time to complete [a] gesture.” EX2010, [00403]. The '114 Patent distinguishes between gestures that may be identified solely from initial touch event attributes and “gestures [that] may only be identified after the gesture has been performed for some period of time.” EX1001, 58:28-30; EX2010, [00388].

Smith later claimed to having “done so” via disclosures of “multi-part, multi-action gestures” etc.

Patent Owner's Response

The '114 Patent explains that, “[o]nce the gesture has been identified, the corresponding operation is performed.” EX1001, 58:50-51; EX2010, [00390]; EX2008, ¶32. Identification of a gesture may include “determin[ing] whether the gesture is meant to trigger some sort of transformation,” such as a “scale” operation. EX2010, [00518]; EX2008, ¶32. Such transformations may be a result of a gesture “associated with operations that are carried out as functions of the gesture input.” EX1001, 60:58-60; EX2010, [00402]; EX2008, ¶32. The identification may also perform “intermediate operations associated with the identified gesture.” EX2010, [00521]; EX2008, ¶32.

A corresponding operation may include “a gesture ... associated with the modification of one or more device attributes.” EX1001, 59:26-27; EX2010, [00393]; EX2008, ¶33. For example, “a device may have a status bar along one side of a display which indicates the status of device hardware, including ... Wi-Fi signal strength, cellular network type and signal strength, Bluetooth status (i.e., on, off, etc.), system volume, battery remaining, etc.” EX1001, 59:28-33; EX2010, [00393]; EX2008, ¶33.

Dr. Madisetti's Declaration

32. The '114 Patent explains that, “[o]nce the gesture has been identified, the corresponding operation is performed.” EX1001, 58:50-51; EX2010, [00390]. Identification of a gesture may include “determin[ing] whether the gesture is meant to trigger some sort of transformation,” such as a “scale” operation. EX2010, [00518]. Such transformations may be a result of a gesture “associated with operations that are carried out as functions of the gesture input.” EX1001, 60:58-60; EX2010, [00402]. The identification may also perform “intermediate operations associated with the identified gesture.” EX2010, [00521].

33. A corresponding operation may include “a gesture ... associated with the modification of one or more device attributes.” EX1001, 59:26-27; EX2010, [00393]. For example, “a device may have a status bar along one side of a display which indicates the status of device hardware, including ... Wi-Fi signal strength, cellular network type and signal strength, Bluetooth status (i.e., on, off, etc.), system volume, battery remaining, etc.” EX1001, 59:28-33; EX2010, [00393].

Issue 1D

Whether conditional limitations [1.f], [1.g], and [1.i] could be met by different gestures in which each gesture has a different duration that satisfies different alternatives

The dependent claims make clear that the independent claims permit multiple detected gestures to meet the conditions

'114 Patent, claim 10

10. The apparatus of claim 1, wherein the apparatus is configured such that

the magnitude of the duration of the gesture being detected on the touch screen on the object remains less than the first magnitude threshold for a first gesture to cause only the operation to be performed upon a cessation of the magnitude of the duration of the gesture being detected on the touch screen on the object;

the magnitude of the duration of the gesture being detected on the touch screen on the object surpasses the first magnitude threshold and remains less than the second magnitude threshold for a second gesture to cause the scaling without the operation nor the another operation being performed; and

the magnitude of the duration of the gesture being detected on the touch screen on the object surpasses both the first and second magnitude thresholds for a third gesture to cause the scaling and the another operation to be performed without the operation being performed.

The dependent claims make clear that the independent claims permit multiple detected gestures to meet the conditions

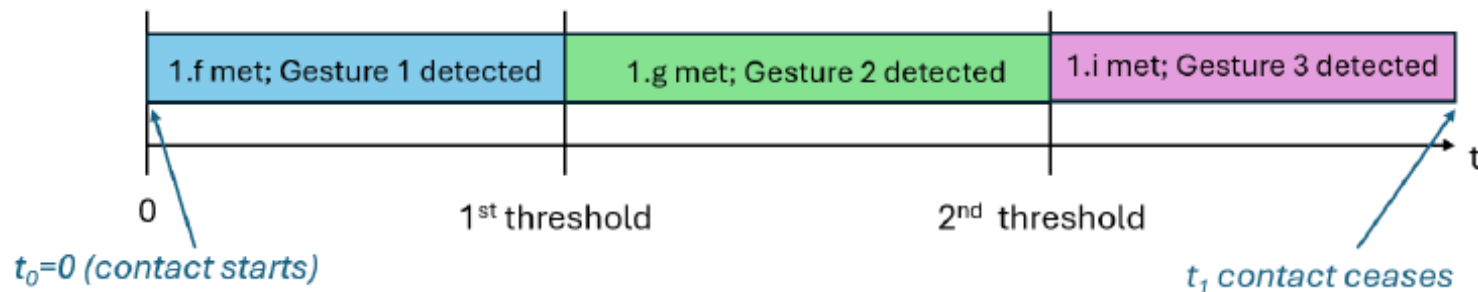
'114 Patent, claim 11

11. The apparatus of claim 1,
wherein the apparatus is configured to detect:
a first gesture with a first duration magnitude on the touch screen on the object remaining less than the first magnitude threshold to cause only the operation to be performed upon a cessation of the first gesture;
a second gesture with a second duration magnitude on the touch screen on the object surpassing the first magnitude threshold and remaining less than the second magnitude threshold to cause the scaling without the operation nor the another operation being performed; and
a third gesture with a third duration magnitude on the touch screen on the object surpassing both the first and second magnitude thresholds to cause the scaling and the another operation to be performed without the operation being performed.

The dependent claims make clear that the independent claims permit multiple detected gestures to meet the conditions

'114 Patent, claim 33

33. The apparatus of claim 32,
wherein the apparatus is configured such that:
only the first component of the gesture is detected in a first use case scenario;
the first and second components of the gesture are detected in a second use case scenario;
the first, second, and third components of the gesture are detected in a third use case scenario;
the scale operation is a cue regarding the magnitude of the duration of the gesture;
the first object is a subject of the scale operation simultaneously with the at least one other object; and
the apparatus includes a watch.



Petitioner's position gives full effect to the antecedent basis of the claims

Claim Construction Brief

Notably, Petitioner's position is consistent with the claims' recitation of antecedent basis. The Petition gives full effect to that basis, clarifying that each of limitations [1.f], [1.g], and [1.i] refers back to the gesture detected in limitation [1.e]—specifically, to the magnitude of the gesture's duration as detected in limitation [1.e]. Pet., 18-26.

Issue 1E

Whether all conditional limitations [1.f], [1.g], and [1.i] need to be met to satisfy the claim

For claim 1, all conditional limitations need to be met

Claim Construction Brief

All of conditional limitations [1.f], [1.g], and [1.i] need to be met in order to satisfy claim 1. That is, for apparatus claim 1, the prior art system must include the “structure for performing the [respective] function” to the extent that each of the conditional limitations [1.f], [1.g], and [1.i] occur. *See Ex Parte Schulhauser*, Appeal No. 2013-007847, 2016 WL 6277792, 14-15 (PTAB Apr. 28, 2016) (precedential) (indicating that a system claim “is limited to the structure capable of performing all the recited functions”). However, because no single magnitude of a single duration of a single gesture can meet all conditional limitations, as discussed in §II.C, Petitioner has mapped each of [1.f], [1.g], and [1.i] to different gestures detected in limitation [1.e], each having its own duration magnitude. APPLE-1022, ¶37.

The Petition mapped the prior art to all limitations of the method claims 34 and 64, just as it did with apparatus claims

Ground 1B

3. Claim 34

[34.pre]

To the extent the preamble is limiting, the KLD renders [34.pre] obvious. APPLE-1003, ¶112. Specifically, as discussed for claim 1, Kim's device performs various functions. §IV.A. For at least the same reasons, the KLD performs a similar functions including functions recited in [34.e]-[34.j], which were discussed in other referenced/incorporated sections of this Petition. APPLE-1003, ¶112; *see* [1.pre] (Ground 1A).

[34.a]

The KLD renders [34.a] obvious. APPLE-1003, ¶113. Kim explains that its mobile device can be "any other kinds of portable and handheld devices." APPLE-1004, [0118]. As discussed in §IV.B.2, a POSITA would have found it obvious to implement the KLD as a smart watch, per Lang. APPLE-1003, ¶113.

[34.b]-[34.j]

See [1.a]-[1.i] (Ground 1A).

5. Claim 64

[64.pre]-[64.d]

See [34.pre]-[34.d] (Ground 1B).

[64.e]-[64.j]

See [32.d]-[32.i] (Ground 1A).

Ground 2B

2. Claim 34

[34.pre]

To the extent the preamble is limiting, the KBLD renders [34.pre] obvious. APPLE-1003, ¶222. Specifically, as discussed with respect to claim 1, the KBD (apparatus) performs a method. §IV.E.2. For at least the same reasons, the KBLD performs a method, as discussed in more detail with respect to [34.e]-[34.j]. APPLE-1003, ¶222; *see* [1.pre] (Ground 2A).

[34.a]

The KBLD renders [34.a] obvious. APPLE-1003, ¶223. Kim explains that its mobile device can be "any other kinds of portable and handheld devices." APPLE-1004, [0118]. As discussed in §IV.B.2, a POSITA would have found it obvious to implement the KBLD as a smart watch, per Lang. APPLE-1003, ¶223;

APPLE-1005, [0015].

[34.b]-[34.j]

See [1.a]-[1.i] (Ground 2A).

4. Claim 64

[64.pre]-[64.d]

See [34.pre]-[34.d] (Ground 2B).

[64.e]-[64.j]

See [32.d]-[32.i] (Ground 2A).

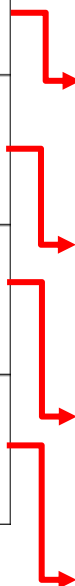
Issue 1F

Claim 32 / “component of the gesture”

The response to the Board's questions equally apply to claim 32

[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.

[32.pre]	An apparatus, comprising:
[32.a]	at least one non-transitory memory storing instructions and a plurality of applications;
[32.b]	a touch screen; and
[32.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:
[32.d]	display, via the touch screen, a first object and at least one other object;
[32.e]	detect at least one component of a gesture on the touch screen on the first object;
[32.f]	when a first component of the gesture is detected where a magnitude of a duration of the gesture being detected on the touch screen on the first object is less than a first magnitude threshold, perform a function upon a cessation of the gesture being detected;
[32.g]	when a second component of the gesture is detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is greater than the first magnitude threshold, perform a scale operation for the at least one other object,
[32.h]	where the scale operation includes a reduction in a size so as to be inversely related to the magnitude of the duration of the gesture being detected on the touch screen on the first object; and
[32.i]	when a third component of the gesture is detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is greater than a second magnitude threshold, perform another function.



Smith unjustifiably relies on an overly narrow interpretation of “a component of the gesture”

Patent Owner's Response

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.

Section II.A includes no mention of a component nor any requirement that a “gesture” must be a multi-action “pattern-based gesture”

POR, 22, Section II.A (4-9); Reply, 12-13

The '114 Patent distinguishes between gestures that may be identified solely from

A “gesture may be ended by ending one or more user inputs” or “by the performing a different gesture” at which time “the final operations associated with

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II. OVERVIEW OF THE '114 PATENT

A. Multi-Part Pattern-Based Gestures

As of the priority date for the '114 Patent, touch screen mobile devices were

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control than was possible with the existing basic input methods. EX2008, ¶24. The

Further, limited screen real estate meant that input and output techniques used for

more complex tasks on desktop computers could not be used on touch screen mobile

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the Board’s explicit rejection of Patent Owner’s argument as negating any

disavowal, Patent Owner intends to file a statutory disclaimer of Claims 27 and 59.

See *Vertical Tank, Inc. v. Bakercorp*, No. 1:18-cv-145, 2019 WL 2207668, *11-12

(E.D. Cal. May 22, 2009) (“Courts have refused to find a disavowal was made where

the purported disavowal was rejected by the patent office.”) (citing *Abbott Labs. &*

Surmodics, Inc. v. Church & Dwight Co., 2008 WL 5387848, at *8 (N.D. Ill. Dec.

22, 2008); *Southern Research Inst. v. Abon Pharm. LLC*, 2013 WL 4509925, at *7

(D.N.J. Aug. 22, 2013); *Bausch & Lomb Inc. v. Vitamin Health, Inc.*, 2015 WL

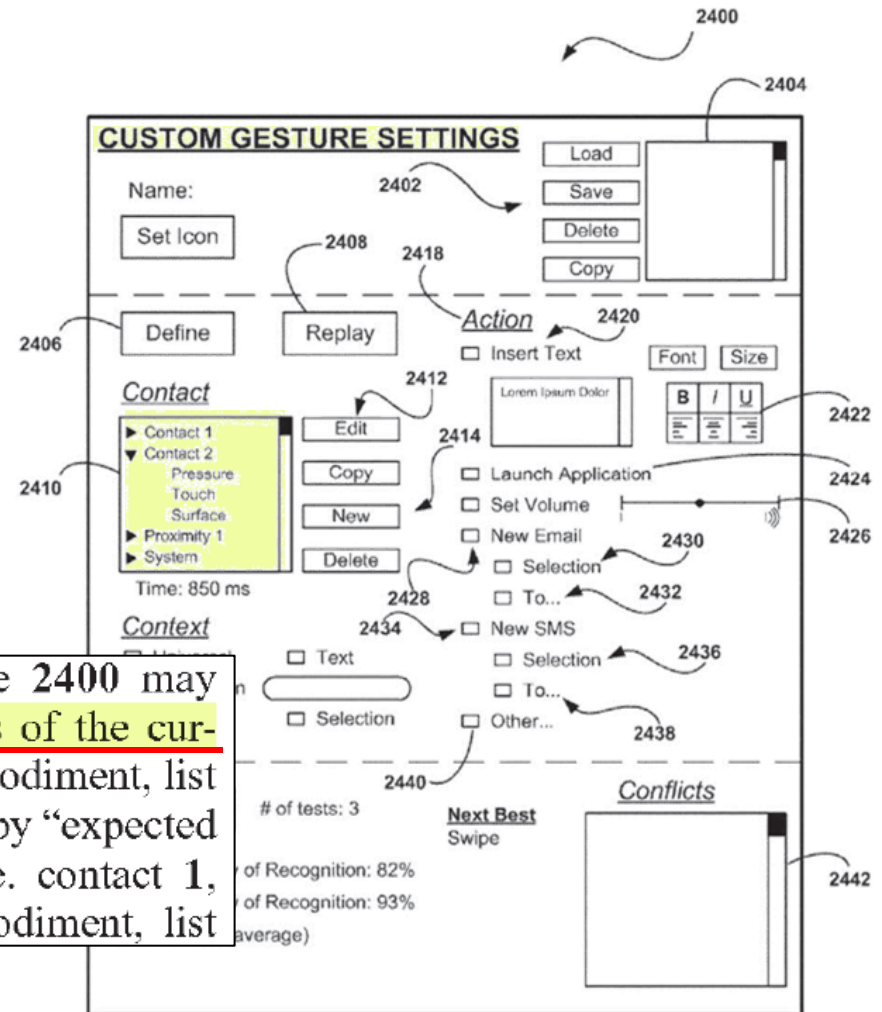
13574354, at *7 (W.D.N.Y. Jan. 15, 2015); *Raleigh v. Tandy Corp.*, final 1997 WL

26299, at *4 (N.D. Cal. Jan. 10, 1997)).

- 4 -

The '114 Patent includes broad examples of “components of a gesture”

'114 Patent



In various embodiments, the user interface 2400 may include a list 2410 displaying all components of the currently defined gesture. For example, in one embodiment, list 2410 may be a nested hierarchical list, grouped by “expected implement of interaction” and input type (i.e. contact 1, contact 2, proximity 1, etc.). In another embodiment, list

Issue 2

Mapping of a(n) “operation”/”function” and another “operation”/”function” is proper (claims 1, 32, 34, 64)

Exemplary Claim Language

[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.

Issue 2A

Kim/Kim-Bowens render obvious performance of a(n) “operation”/”function”

The Board clearly understood the Petition's showing, "which is generally based on express disclosures"

Institution Decision

Regarding Limitations [1.f–1.h], we find Petitioner's showing, which generally is based on express disclosures, to be sufficient for institution. As discussed above, for the gesture recited in Limitation [1.e] that results in "perform[ing] an operation" in Limitation [1.f], Petitioner relies on Kim's double-tap that returns the bicycle and rider (or other object) to an initial state with a basic display size after a zoom-in or zoom-out action.

Petitioner's showing regarding Kim's "hold event" that causes a continuous zoom-in or zoom-out action for the gesture recited in Limitation [1.e] sufficiently shows the required scaling operation on a bicycle and rider (an object) and results in more of a zoom the longer the hold event is sufficient for institution to show the inverse reduction in size recited in Limitation [1.h]. Petitioner's position also is bolstered by express

threshold. At this preliminary juncture, we understand the plain language of the claim to require performing the operation (here, returning the object to its original size) when the particular condition recited in the claim is met—"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." As such, we find sufficient for institution Petitioner's contention that the operation is performed when the duration of the double-tap is less than a "first magnitude threshold" of the hold event duration.

A POSITA would have understood that the well-known double tap has a duration shorter than a hold (Ground 1A)

Dr. Cockburn's First Declaration

54. Kim teaches or renders [1.f] obvious. Kim describes “a double tap event for returning to an initial state with a basic display size after a zoom-in or zoom-out action.” APPLE-1004, [0031], [0064] (“if an input event is a double tap event as the result of determination in the step 241, the mobile device offers display target data with a predefined basic size”), [0099] (“in response to a double tap event, the mobile device displays target data with a given basic magnification value”), [0103], [0106]. In describing the touch as a tap, Kim discloses that the duration of each of the taps of the double tap gesture must be less than a threshold value associated with a longer-lasting (i.e., hold) event (the “first magnitude threshold”). In particular, from this disclosure and based on common knowledge of a tap, a POSITA would have understood that a double tap—a well known user input by the Critical Date—comprises two short duration taps in quick succession, which individually and collectively have a duration shorter than a threshold

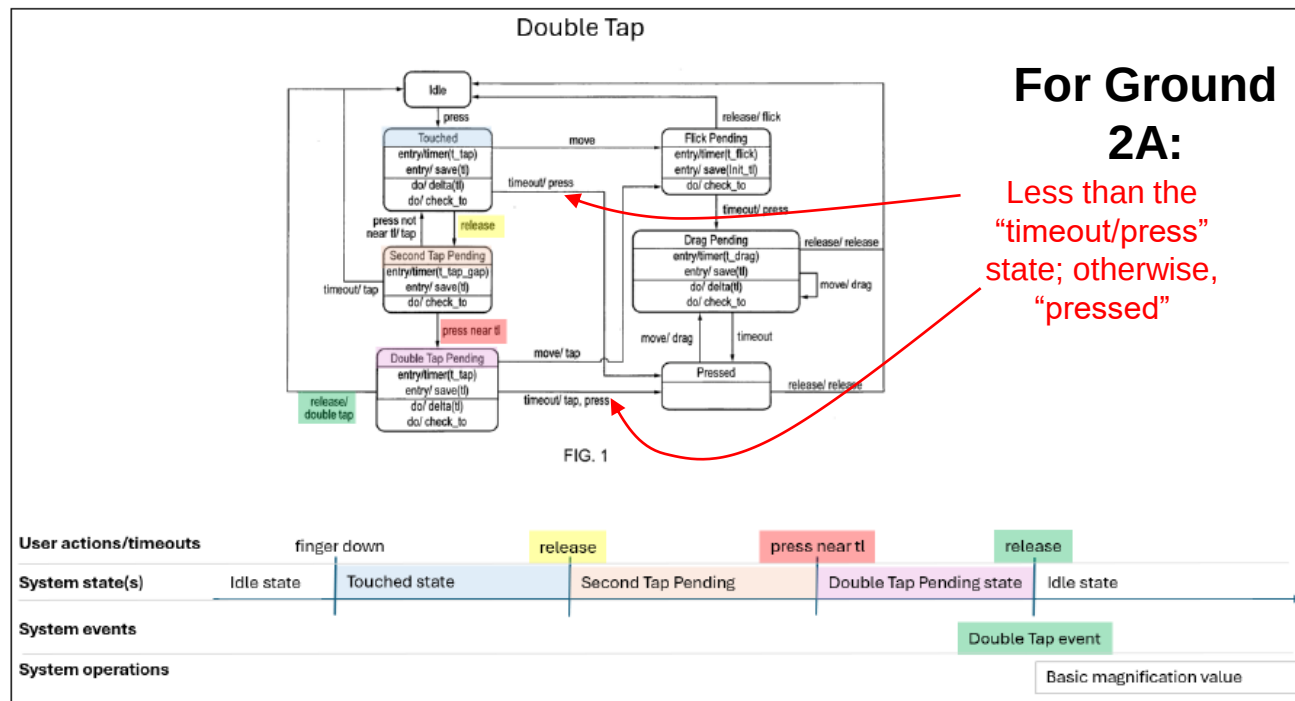
duration associated with a more persistent gesture (e.g., a hold). APPLE-1005, [0057]-[0058], [0069]; APPLE-1009, 3 (“When I tell you to double-tap a specific location, you simply take your stylus and tap the item twice in a fairly short amount of time.”); APPLE-1012, [0072] (“A double tap action can be determined by the detection of a finger leaving the touch screen and immediately retouching the touch screen twice.”). The duration of each of the taps of the double tap gesture is “a duration of the gesture.” A POSITA would have understood that gesture recognition encompasses identification of multiple components of touch data. Newton teaches, for example, taking into account the duration of a gesture, a pattern of movement, and/or a distance by which fingers are separated. APPLE-1010, [0027], [0032]-[0035], [0054]. Marsden similarly teaches a process for “discern[ing] between the actions of tapping on the surface, resting on the surface, and pressing on the surface,” using “threshold for the touch signal” and “the rate of the rising edge of the touch signal to discern between a tap, a resting action, and a press.” APPLE-1011, [0065].

A “magnitude of a duration of the gesture being detected” should be broadly construed

Claim Construction Brief

CC Brief, 3; APPLE-1003, ¶190

First, as discussed in more detail below, “a magnitude of a duration of the gesture being detected”² would not have been foreclosed from including the magnitude³ of the duration of any gesture being detected, which includes the duration magnitude of any part of the inputs, flags, and signals that constitute the gesture being detected. APPLE-1022, ¶20. This interpretation is proper at least



APPLE-1005, FIG. 1 (highlighted; annotated)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Issue 2B

Kim/Kim-Bowens render obvious
performance of another
“operation”/“function”

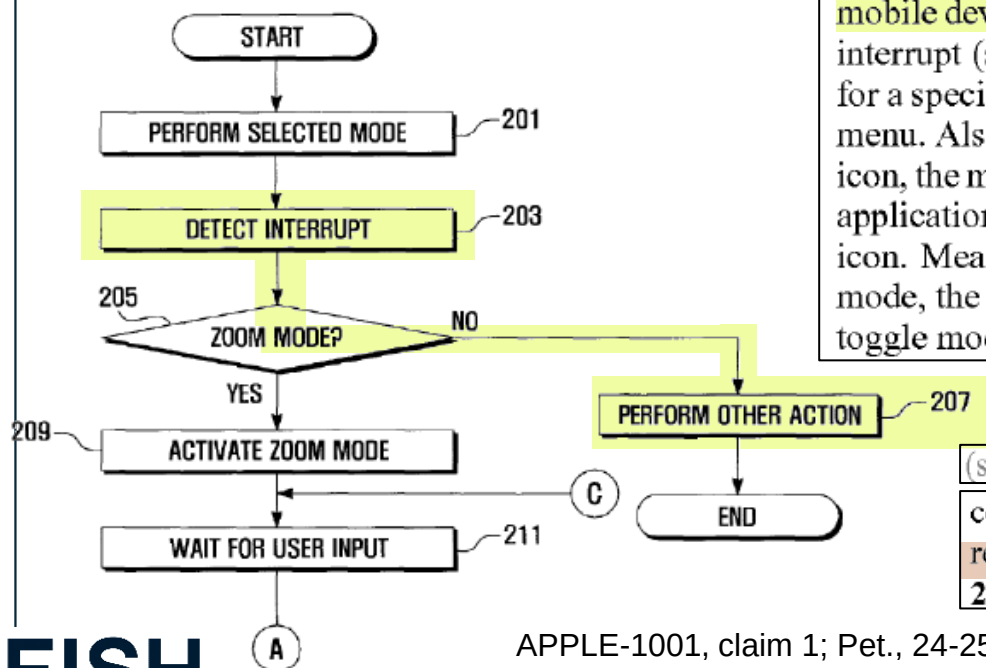
Kim performs “another operation/function” in response to an intentional user input (Ground 1A)

'114 Patent, [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.

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.



(step 231), and a double tap event (step 241). If the input event corresponds to none of them, the mobile device disregards the received input event and then proceeds to the previous step 211.

The Kim-Bowens Device performs “another operation/function” in response to tap (Ground 2A)

Bowens

[0080] The Touched state is now described. The Touched state occurs when a user has touched the touch surface. When the Touched state is entered a timeout is started, i.e. a timer is set running which expires after a preset time. This is used to distinguish between short duration gestures such as flicks and taps, and long duration gestures such as a press. The initial

Detecting a tap based on a time threshold

[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

Action performed responsive to tap

[0056] Tap: A tap happens when the user quickly touches and releases the touch surface. No significant movement takes place while the user's finger is on the touch surface. It is characterized by a short touch duration. This could be used, for example, to activate a hyperlink on a displayed web page.

The Kim-Bowens Device performs “another operation/function” in response to tap (Ground 2A)

Dr. Cockburn’s First Declaration

180. A POSITA would have understood that implementing a device (per Kim) with tap-related operation (activate a hyperlink on a displayed web page), per Bowens, would offer distinct functions associated with a tap, double tap, and a long press, respectively. APPLE-1005, [0056]. Indeed, Kim offers an exemplary scenario where “a zooming action associated with web display data in a web browser” is provided. APPLE-1004, [0113]. It would have been obvious to a POSITA that the device would respond with different operations depending on the type of input received.

Issue 2C

The “second magnitude threshold” need not be greater than the “first magnitude threshold”

The claim language of the independent claims does not define a relationship between the first and second magnitude thresholds

[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.

Dependent claims offer limitations re the relationship between the first and second magnitude thresholds

'114 Patent, claim 8

8. The apparatus of claim 1, wherein the apparatus is configured such that the scaling is reverted, in response to a detection of a cessation of the gesture, when the magnitude of the duration of the gesture is detected on the touch screen on the object to be **greater than the first magnitude threshold**, but is detected to **remain less than the second magnitude threshold**.

“[T]he presence of dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.”

Liebel–Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) (citing *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.2d 1225, 1233 (Fed. Cir. 2001); *Comark Communications, Inc. v. Harris Corp.*, 156, F.3d 1182, 1187 (Fed. Cir. 1998)).

“[W]here the limitation that is sought to be ‘read into’ an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest.” *Liebel–Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) (citing *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302-03 (Fed. Cir. 2003)).

Issue 3

Strong motivation exists for adding haptic feedback to Kim's double tap gesture

A POSITA would have been motivated to modify Kim (alone or combined with Bowens and Lang) with Burrough's teaching of haptic feedback

Petition

2. The Kim-Burrough Combination

Kim describes a mobile device that “has a touch sensitive surface such as a touch screen” that provides “a touch-based zooming control method.” APPLE-1004, Abstract. Kim does not explain whether tactile feedback is provided to a user, instead leaving this detail to POSITAs well aware of haptic feedback by the Critical Date. APPLE-1003, ¶135 (citing APPLE-1008). The lack of a physical keyboard or tactile means was known to create challenges for users (e.g., visually distracted or visually impaired, poor lighting, small screen). *Id.* (citing APPLE-1017; APPLE-1018). Thus, a POSITA would have been motivated to look to references, such as Burrough, which teaches using haptic feedback in conjunction with touch screens. *Id.*; APPLE-1007, Abstract.

Pet., 45-48; APPLE-1003, ¶¶135-138

A POSITA would have been motivated to modify Kim (alone or combined with Bowens and Lang) with Burrough's teaching of haptic feedback

Dr. Cockburn's First Declaration

leaves this detail to POSITAs well aware of haptic feedback by the Critical Date.

For instance, Lacroix explains:

Electronic device manufacturers strive to produce a rich interface for users. Conventional devices use visual and auditory cues to provide feedback to a user. In some interface devices, kinesthetic feedback (such as active and resistive force feedback) and/or tactile feedback (such as vibration, texture, and heat) is also provided to the user, more generally known collectively as "haptic feedback." Haptic feedback can provide cues that enhance and simplify the user interface. Specifically, vibration effects, or vibrotactile haptic effects, may be useful in providing cues to users of electronic devices to alert the user to specific events, or provide realistic feedback to create greater sensory immersion within a simulated or virtual environment.

APPLE-1008, [0003]. The lack of a physical keyboard or tactile means for providing input was known to create challenges for users, especially where a user is visually distracted or visually impaired, lighting is poor, and screen sizes are small. APPLE-1017, [0003], [0004] ("In some situations, it is desirable for the user to be able to locate keys without looking at the touch screen. For example, when driving, a user may prefer to locate and select a menu item or locate and dial numbers on a software keypad using only tactile feedback in order to maintain visual contact with the road. As another example, a vision-impaired user may be unable to operate a touch screen having key locations without tactile feedback.");

size of electronic devices has been a decrease in the size of input mechanisms for providing instructions to the electronic device, and a decrease in the size of displays or screens used to navigate the electronic devices and to access the electronic device functions."), [0004] ("For some users, including for example users with poor vision, or users in dark environments (e.g., at night with little or no electronic device backlight), the reduction in size of the input mechanism and display inconveniences the users and may prevent the users from properly using the electronic device, thus leading to frustration."). As such, a POSITA would have been motivated to look to references, such as Burrough, which teaches the use of haptic feedback in conjunction with touch screens. APPLE-1007, Abstract.

136. Indeed, Burrough recognizes that "physical sensation can not be provided by a conventional multi-touch system thereby forcing the user to visually locate the home key thereby making keyboard use less efficient and fatiguing." APPLE-1007, [0008]. "[R]esearch has shown that providing the multi-touch surface with the ability to provide physical (haptic) feedback makes the multi-touch experience even more efficient and realistic to the user." *Id.* Thus, Burrough teaches a portable device that provides haptic feedback in response to user input, including zooming operations. *Id.*, [0079]-[0081], FIG. 11. The haptic

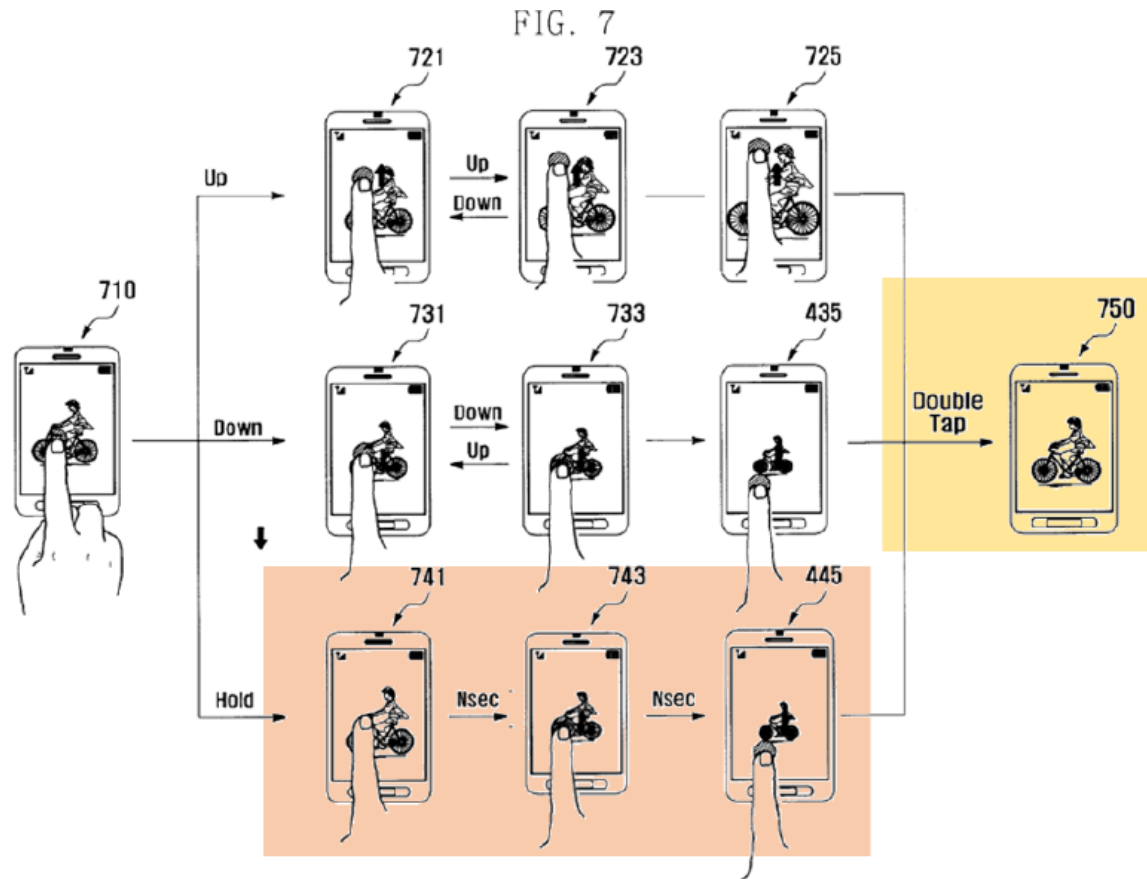
A POSITA would have been motivated to modify Kim (alone or combined with Bowens and Lang) with Burrough's teaching of haptic feedback

Claim 30

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

Claim 62

subsequent to the performance of the scale operation, vibrating the apparatus and performing an action.



APPLE-1004, [0107], FIG. 7 (modified); Pet., 8-9

A POSITA would have been motivated to modify Kim (alone or combined with Bowens and Lang) with Burrough's teaching of haptic feedback

Petition

Kim explains that after a hold event that causes a zoom-in (or zoom-out) process, “[t]hereafter, a user can invoke a double tap event on the screen,” causing the device to display “target data with a given basic magnification value.” APPLE-1004, [0106], FIG. 7; *see id.*, FIG. 2b. Thus, after at least a portion of the scale operation, the device performs an action (displays data with a given basic magnification). *Id.*; APPLE-1003, ¶150.

As discussed in §IV.C.2, the Kim-Burrough-Device includes a haptic device that provides a “vibro-tactile response.” APPLE-1007, [0013], [0033], [0037], [0047], [0055]-[0056], FIGS. 1A-1E, FIG. 11; APPLE-1003, ¶151; §IV.C.2. As shown in Figure 11 (excerpted below), Burrough teaches “generate a zoom out haptic signal” or “generate a zoom in haptic signal” after generating a zoom out or zoom in signal. APPLE-1004, [0080], FIG. 11. A POSITA would have understood that a haptic signal (1116/1118 of Figure 11) follows any zooming signal in the Kim-Burrough-Device, and therefore, the zooming action that occurs

to “offer basic sized display” (243 in FIG. 2b of Kim) in the Kim-Burrough-Device would be accompanied by a haptic output, as Burrough teaches. APPLE-1003,

Pet., 50-51; APPLE-1003, ¶¶150-151

Contrary to Smith's assertion, Burrough's teaching is not limited to haptic feedback during an *ongoing* zoom operation

Claim 30

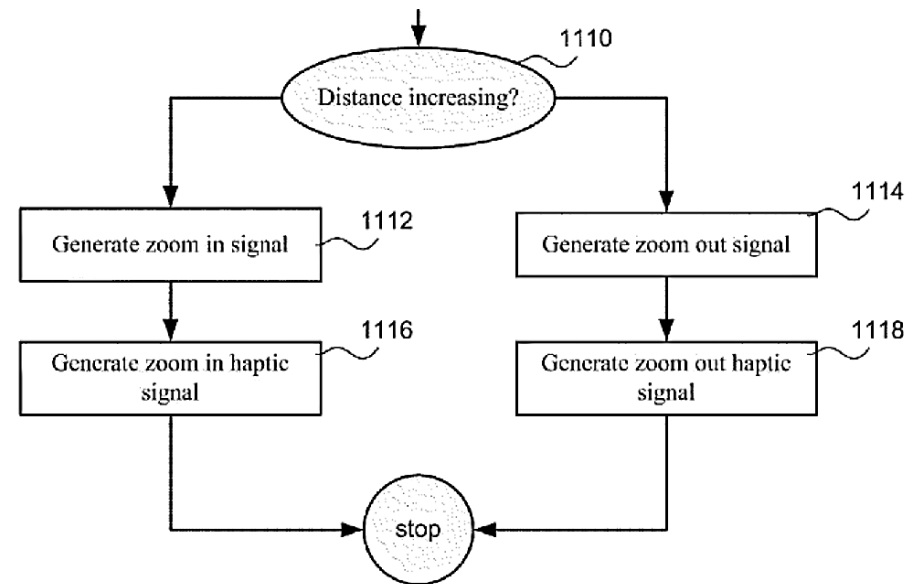
after at least a portion of the scale operation, vibrate the apparatus and perform an action.

Reply

Smith's arguments concerning combining Kim and Burrough mischaracterize the Petition's combination. *See* POR, 59-62. Smith first improperly characterizes Burrough's zoom operation as necessarily "ongoing" though it need not be so. *See* APPLE-1007, FIG. 11. Instead, Burrough's teaching regarding generating haptic signals does not depend on whether a zoom gesture is ongoing. Rather, the zoom in/zoom out portions of FIG. 11 relied upon in the Petition (1112/1116 and 1114/1118) simply indicate that, as long as a zoom in/out signal is generated (1112/1114), that signal is followed by a zoom in/out haptic signal 1116/1118. *Id.*; APPLE-1022, ¶79. Thus, the Kim-Burrough Device would generate a zoom in or zoom out signal (to return the display to a given basic magnification or default zoom level), per Kim, and following generating that zoom in/out signal, the device would generate a zoom in/out haptic signal, per Burrough.

Claim 62

subsequent to the performance of the scale operation, vibrating the apparatus and performing an action.



APPLE-1007, FIG. 11 (excerpted)

Issue 4

Smith's expert's analysis is narrow and biased

Dr. Madisetti's testimony confirmed limited review

Dr. Madisetti's Deposition

19 Q. Does the '114 patent provide an
20 example of a single gesture having three
21 different durations that result in three
22 different actions?

1 A. I don't think I offered an opinion
2 with respect to that issue, counsel, in my
3 declaration.

4 If asked and allowed to do so in the
5 future, I may do so.

6 But, I don't think I have offered
7 such an opinion in my declaration.

8 Q. Do you recall reading one on your
9 several reviews of the '114 patent and ten hours
10 spent reviewing it?

11 A. As I said, it is not something I was
12 looking for. I was not asked to do that. So, I
13 don't have an answer.

2 Q. So, did your review of dependent
3 claims of the '114 patent help you to gain an
4 understanding of the independent claims?

5 A. To the extent that I referenced them
6 in my declaration.

7 Q. If they are not referenced in your
8 declaration, did they not inform your
9 understanding?

10 A. As I said, I did not offer opinions
11 on certain -- on all of the dependent claims, on
12 all the claims in that respect to the extent that
13 I have an opinion.

14 I provide the opinion on the basis
15 in my declaration.

7 Q. So, sitting here right now, is there
8 any other opinion that you omitted from your
9 declaration?

10 A. I don't believe so.

Dr. Madisetti's repeatedly confirmed his narrow and biased approach

Dr. Madisetti's Deposition

18 I believe I reviewed the entire
19 specification in the patent in that context as to
20 a rebutting the assertions of the petition.

8 as I said, my focus was on rebutting and
9 addressing the assertions by the petitioner and
10 its declarant.

7 A. I reviewed it in the context of the
8 challenge raised by the petitioner and its
9 declarant. So, I responded specifically. And I
10 was asked to respond to certain topics.
11 And I confined my declaration and my
12 analysis to those topics. I don't wish to expand
13 the scope of my declaration on the fly.

14 I'm asking, did you have to fully
15 understand the meaning of the claims in order to
16 figure out whether they are valid claims?
17 A. All I had to do in my understanding
18 was to provide a rebuttal based on the grounds
19 provided by Apple and its declarant, which I did,
20 and my declaration has my full opinions and their
21 basis.

5 THE WITNESS: As I said, counsel, I
6 was asked to rebut from a technical point of
7 view the challenges raised by the petition
8 and its declarant, which I believe I did.
9 And I was asked to do a couple of
10 other things with respect to the Board's
11 directives, which I also did. And that is
12 all I have.

Other Issues

Smith's criticism of the mappings of [1.g] and [1.i] are rooted in Smith's improper importation of requirements not recited in the claims

Rebuttal to:

"Petitioner's reliance on Kim's 'long press' gesture while the device is in 'zoom mode' to satisfy one branch and Kim's 'tap' 'gesture in another mode requires a device that operates in two mutually exclusive states at once..." Sur-reply, 11

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

1.g

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.i

Smith's arguments concerning the Petition's mapping of [1.g] and [1.i] are premised on the flawed understanding that claim 1 requires that a "single continuous gesture"¹⁰ must meet the limitations. *See* POR, 43. As explained in Petitioner's Claim Construction Brief, this understanding of a "gesture" is not supported by the '114 Patent, is inconsistent with Smith's infringement contentions, renders dependent claims impossible, and improperly imports features not required by the plain meaning of the claim. Paper 22, §II.A; *N. Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281, 1290, (Fed. Cir. 2000) ("This court has repeatedly and clearly held that it will not read unstated limitations into claim language.").

interpretation, Smith's arguments concerning whether Kim's device is in a zoom mode are irrelevant. *See* POR, 43 (alleging that "zoom mode" is a necessary predicate).

Reply, 16-17