

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Title: DEVICES AND METHODS FOR NAVIGATING
BETWEEN USER INTERFACES

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 10,656,754 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42**

TABLE OF CONTENTS

I.	CONVENTIONS OF THE PETITION.....	1
II.	REQUIREMENTS FOR IPR—37 C.F.R. §42.104.....	1
	A. Grounds for Standing—37 C.F.R. § 42.104(a).....	1
	B. Challenge and Relief Requested—37 C.F.R. §42.104(b)	1
III.	THE '754 PATENT.....	2
	A. Pertinent Disclosure.....	2
	B. Prosecution History.....	5
IV.	LEVEL OF ORDINARY SKILL	6
V.	CLAIM CONSTRUCTION—37 C.F.R. §42.104(b)(3)	7
VI.	THE CHALLENGED CLAIMS ARE UNPATENTABLE.....	7
	A. GROUND 1A—Obviousness Over Ahn and Chaudhri '842.....	7
	1. Ahn (EX1004).....	7
	2. Chaudhri '842 (EX1005).....	13
	3. The Combination, Reasons to Combine, & Expectation of Success	18
	(a) Applying Chaudhri '842's teachings about user interface state transition in the context of Ahn's touch screen mobile device.....	18
	4. Claim Element Analysis.....	23
	(a) Claim 2	23
	(b) Claim 27	40
	(c) Claim 37	42
	(d) Claim 58	44
	(e) Claim 60	45
	(f) Claim 61	47
	(g) Claim 62	49
	(h) Claim 63	50
	(i) Claim 64	52
	(j) Claim 67	54

(k)	Claim 68	57
(l)	Claim 69	59
(m)	Claim 70	62
(n)	Claim 71	64
(o)	Claim 72	66
(p)	Claim 73	67
(q)	Claim 74	68
(r)	Claim 75	68
(s)	Claim 76	71
(t)	Claim 77	71
(u)	Claim 78	71
(v)	Claim 79	71
(w)	Claim 223	72
VII.	ANALYSIS ON DISCRETION.....	72
A.	35 U.S.C. §325(d)— <i>Advanced Bionics</i>	72
B.	35 U.S.C. §314(a)— <i>Fintiv</i>	74
VIII.	PAYMENT OF FEES—37 C.F.R. § 42.103.....	76
IX.	MANDATORY NOTICES—37 C.F.R §42.8(a)(1)	76
A.	Real Party-In-Interest—37 C.F.R. § 42.8(b)(1).....	76
B.	Related Matters—37 C.F.R. § 42.8(b)(2)	76
C.	Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3).....	76
D.	Service Information	77

LIST OF EXHIBITS

EX1001	U.S. Patent No. 10,656,754
EX1002	U.S. Patent No. 10,656,754 File History
EX1003	Declaration of Dr. Loren Terveen
EX1004	U.S. Publication No. 2008/0207188 to Hye Sang Ahn <i>et al.</i> ("Ahn")
EX1005	U.S. Publication No. 2007/0150842 to Imran Chaudhri <i>et al.</i> ("Chaudhri '842")
EX1006	U.S. Publication No. 2011/0209093 to Kenneth P. Hinckley and Koji Yatani ("Hinkley")
EX1007	U.S. Publication No. 2006/0015818 to Imran A. Chaudhri <i>et al.</i> ("Chaudhri '818")
EX1008	Robert Kosara <i>et al.</i> , "Semantic Depth of Field," IEEE Symposium on Information Visualization 2001, pp. 97-104 (2001)
EX1009	New Oxford American Dictionary (3 rd Ed. 2010)
EX1010	U.S. Publication No. 2012/0304133 to Jennifer Nan <i>et al.</i> ("Nan")
EX1011	Certified translation of JP Published Patent Application No. 2002-55750 ("Hisatomi"), published February 20, 2002
EX1012	Internet Archive Capture of https://en.wikipedia.org/wiki/Acutance from Nov. 2, 2010 (available at https://web.archive.org/web/20101102045925/https://en.wikipedia.org/wiki/Acutance)

EX1013	U.S. Publication No. 2010/0095240 to Daniel Marc Gatan Shiplacoff <i>et al.</i> (“Shiplacoff”)
EX1014-1019	RESERVED
EX1020	United States District Courts — National Judicial Caseload Profile (Dec. 31, 2023) United States Courts (uscourts.gov), https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf (last visited June 25, 2024)
EX1021	Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Guidance”)
EX1022	Case Management Order, Smith Interface Technologies, LLC v. Apple Inc., 3-23-cv-01187, S.D. Cal. (June 20, 2024)

LISTING OF CLAIMS

Claim 2	
[2.a]	An apparatus, comprising: at least one non-transitory memory; 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 instructions in the at least one non-transitory memory to cause the apparatus to . . .
[2.b]	display an object and at least one other object;
[2.c]	detect at least part of a gesture on the touch screen; and
[2.d]	during detection of at least a portion of the gesture before a completion thereof is detected, blur, based on a change in a magnitude of the gesture being detected on the touch screen, at least a portion of the at least one other object.
Claim 27	
[27]	The apparatus of claim 2, wherein the apparatus is configured such that, when the magnitude, including a distance magnitude, of the gesture detected on the touch screen is detected to increase above a distance threshold, a menu is displayed with at least one option.
Claim 37	
[37]	The apparatus of claim 27, wherein the apparatus is configured such that the menu is sharpened and magnified when displayed.
Claim 58	
[58]	The apparatus of claim 52, wherein the apparatus is configured such that the blur is accompanied by a fading.
Claim 60	
[60]	The apparatus of claim 27, wherein the apparatus is configured such that the blur includes changing a transparency of the at least portion of the at least one other object.

Claim 61	
[61]	The apparatus of claim 27, wherein the apparatus is configured such that the blur includes changing a translucency of the at least portion of the at least one other object.
Claim 62	
[62]	The apparatus of claim 27, wherein the apparatus is configured such that the object includes a battery-related icon.
Claim 63	
[63]	The apparatus of claim 27, wherein the apparatus is configured such that the gesture includes a swipe gesture, the at least part of the gesture is detected on the touch screen on the object, and the object is displayed to move with the swipe gesture.
Claim 64	
[64]	The apparatus of claim 27, wherein the apparatus is configured such that the menu fades-in, and includes a wide area network option, a local area network option, and a volume option.
Claim 67	
[67]	The apparatus of claim 27, wherein the apparatus is configured such that the blur includes decreasing a translucency of a virtual display layer overlaying the at least one other object.
Claim 68	
[68]	The apparatus of claim 27, wherein the apparatus is configured such that the blur includes decreasing a transparency of a virtual display layer overlaying the at least one other object.
Claim 69	
[69]	The apparatus of claim 27, wherein the apparatus is configured such that a magnitude of the blurring is continuously increased as a function of a continuous increase in the change in the magnitude of the gesture being detected on the touch screen, until a predetermined amount of an

	interface including the at least one other object is completely obscured by an overlaying virtual display layer.
Claim 70	
[70]	The apparatus of claim 27, wherein the apparatus is configured such that a magnitude of the blurring is continuously increased in a first virtual display layer as a function of a continuous increase in the change in the magnitude of the gesture being detected on the touch screen, until a predetermined amount of an interface including the at least one other object is obscured by an overlaying second virtual display layer.
Claim 71	
[71]	The apparatus of claim 27, wherein the apparatus is configured such that the at least one other object is blurred by continuously decreasing a magnitude of a translucency of a virtual display layer overlaying the at least one other object as a continuous function of an increase in the change in the magnitude of the gesture being detected on the touch screen.
Claim 72	
[72]	The apparatus of claim 71, wherein the apparatus is configured such that the virtual display layer moves to appear like a window shade.
Claim 73	
[73]	The apparatus of claim 27, wherein the apparatus is configured such that the at least one other object is blurred by continuously decreasing a magnitude of a transparency of a virtual display layer overlaying the at least one other object as a continuous function of an increase in the change in the magnitude of the gesture being detected on the touch screen.
Claim 74	
[74]	The apparatus of claim 27, wherein the apparatus is configured such that the at least one other object is blurred by continuously decreasing a magnitude of a transparency of a virtual display layer overlaying the at least one other object as a continuous function of an increase in the

	change in the magnitude of the gesture being detected on the touch screen.
Claim 75	
[75]	The apparatus of claim 27, wherein the apparatus is configured such that, when the magnitude, including the distance magnitude, of the gesture detected on the touch screen is detected to not increase above the distance threshold, a home screen for choosing among a plurality of applications is displayed.
Claim 76	
[76]	The apparatus of claim 27, wherein the apparatus is configured such that, when the magnitude, including the distance magnitude, of the gesture detected on the touch screen is detected to not increase above the distance threshold, a home screen for choosing among a plurality of applications is displayed instead of the menu.
Claim 77	
[77]	The apparatus of claim 27, wherein the apparatus is configured such that, when the magnitude, including the distance magnitude, of the gesture detected on the touch screen is detected to not increase above the distance threshold, a home screen for choosing among a plurality of applications remains displayed instead of displaying the menu.
Claim 78	
[78.a]	The apparatus of claim 27, wherein the apparatus is configured such that the distance magnitude of the gesture is detected to increase above the distance threshold and the menu is displayed in a first use scenario; and
[78.b]	the distance magnitude of the gesture is not detected to increase above the distance threshold, the menu is not displayed and a home screen for choosing among a plurality of applications is displayed in a second use scenario.

Claim 79	
[79.a]	The apparatus of claim 27, wherein the apparatus is configured such that: the distance magnitude of the gesture is detected to increase above the distance threshold and the menu is displayed for a first gesture in a first use scenario; and
[79.b]	the distance magnitude of the gesture is not detected to increase above the distance threshold, the menu is not displayed, and a home screen for choosing among a plurality of applications is displayed for a second gesture in a second use scenario.
Claim 223	
[223]	The apparatus of claim 2, wherein the apparatus is configured such that the blur is accompanied by a fading.

Apple Inc. (“Petitioner”) petitions for IPR of the Challenged Claims of U.S. Patent No. 10,656,754 (“the ’754 patent”).

I. CONVENTIONS OF THE PETITION

- All emphasis is added unless noted otherwise;
- Bold-italic emphasis correlates to claim language;
- Quotations are generally from exhibits, not claim language; and
- The phrase “as discussed” and equivalent phrases incorporate fully the analysis of the cross-cited portion of the Petition.

II. REQUIREMENTS FOR IPR—37 C.F.R. §42.104

A. Grounds for Standing—37 C.F.R. § 42.104(a)

Petitioner certifies that the ’754 patent is available for IPR, and that Petitioner is not barred or estopped from requesting IPR.

B. Challenge and Relief Requested—37 C.F.R. §42.104(b)

Petitioner requests IPR on Ground 1 listed below. A declaration from Dr. Loren Terveen supports Ground 1. *See generally* EX1003.

Ground	Challenged Claims	Basis for Rejection
1A	2, 27, 37, 58, 60-64, 67-79, 223	§103–Ahn (US 2008/0207188), Chaudhri ’842 (US 2007/0150842)

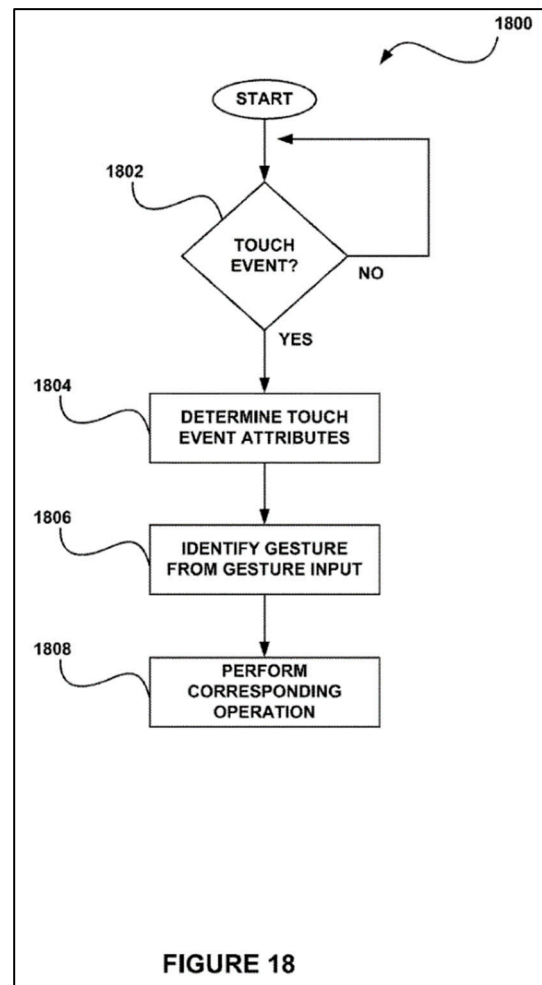
The ’754 patent is not entitled to its earliest claimed priority date of August 5, 2011. Still, every art reference advanced in Grounds 1 precedes that date.

Reference	Prior Art Date	Status
Ahn (EX1004)	Published Aug. 28, 2008	§102(b)
Chaudhri '842 (EX1005)	Published Jun. 28, 2007	§102(b)

III. THE '754 PATENT

A. Pertinent Disclosure

The '754 patent “generally relate[s] to touch screens” and describes embodiments where “a user experience [with a touch screen device] may be altered” based on a “touch signal.” EX1001, 1:35-36, 14:31-15:64, Figure 3; EX1003, [21]. The claims of the '754 Patent generally relate to a hodge podge of touch screen gestures (*e.g.*, swipe and tap gestures) and various display functions on the user interface associated with those gestures (*e.g.*, blurring or moving displayed objects). *See, e.g.*, EX1001, 95:35-53 (Claims 2-4). However, as discussed below, the support for these claimed gestures and claimed user interface functions is scattered throughout the specification of the



'754 Patent, often without explanation about any relationship between the disparate teachings or their utilization together in a single embodiment. EX1003, [21].

Nonetheless, as will be described in Section VI, *infra*, the claimed gestures and user interface functions were well-known well before the '754 Patent. EX1003, [21].

In one part of the specification, the '754 Patent describes a method that involves performing operations that correspond to identified gestures. *See* EX1001, 56:24-57:10. “If it is determined that a touch event has occurred, then the initial touch event attributes are determined,” and “the gesture is identified from gesture input.” EX1001, 56:34-38. According to the '754 Patent, “gesture input refers to the collection of inputs, flags, and signals by which a gesture is identified and parameterized,” and is thus broadly defined. EX1001, 56:39-41. “For example, in one embodiment, a two-finger pinch gesture may be identified by two contact points combined with their motion with respect to each other, and parameterized by the extent of the motion.” EX1001, 56:41-45. “Once the gesture has been identified, the corresponding operation is performed.” EX1001, 57:9-10.

The '754 Patent describes that “[p]attern-based gestures may be simple to perform and easy for a user to remember.” EX1001, 65:37-39. One such gesture is a “pinch slide gesture.” *See* EX1001, 66:17-27. The pinch slide “gesture may be performed by pinching the device, then sliding the pinch across the interaction surfaces while maintaining contact.” EX1001, 66:21-24. In one embodiment, “a pinch slide gesture may be used to display menus of common operations or applications.” EX1001, 66:64-66. “For example, in one embodiment, a pinch slide

gesture which begins near an edge of a display and then moves inward may cause a menu or window to slide in from that edge of the display.” EX1001, 66:66-67:2.

Separately, the '754 Patent describes embodiments that utilize a “3D layered user interface” in which “displayed objects may exist in one of a plurality of layers.” EX1001, 67:66-68:10; EX1003, [24]. “[A] 3D layered user interface may be implemented in a device having single layer displays through the use of virtual display layers.” EX1001, 68:37-39. “[A] virtual display layer refers to a collection of display elements which have all been assigned the same apparent depth within the 3D layered user interface.” EX1001, 68:39-42. In some embodiment, “virtual display layers may be given the appearance of depth through the use of 3D depth cues.” EX1001, 68:58-60. “For example, in one embodiment, a 3D depth cue may be a blur operation, such that layers located at successively greater depths may appear blurrier than those closer to the user.” EX1001, 68:63-66.

Notably, the '754 Patent does not explicitly describe the aforementioned edge menus with respect to the virtual display layers, nor the manner in which such menus would operate with respect to the virtual display layers. Rather, the '754 Patent describes its 3D layered user interface more generically with respect to “objects” or “display elements” and collections thereof. *See generally* EX1001, 67:44-71:39; EX1003, [25]. These “objects” are described as including, but not limited to, “digital objects (i.e. images, text boxes, UI control widgets, selections, etc.), subject matter

objects (i.e. people within a photograph, letters and/or words within text, etc.), and/or any other type of identifiable visual object.” EX1001, 68:48-57. While the ’754 Patent describes that these general “objects” or “elements” may be “located in a virtual display layer” (*see* EX1001, 68:55-57), there is sparse detail about how specific “objects” or “elements” are assigned to a particular virtual display layer, and no clear discussion of whether or how “objects” or “elements” may be reassigned or otherwise moved between virtual display layers. *See generally* EX1001, 67:44-71:39; EX1003, [25]. Rather, the ’754 Patent focuses on the ability of a user to “move” visually between layers and providing visual cues that provide the appearance of such “movement” (“i.e. magnifying and fading display layers as they are passed by, sharpening previously blurry display layers as they grow closer, etc.”), which is a distinct concept. EX1001, 70:64-71:9; EX1003, [25].

B. Prosecution History

On June 11, 2019, the Applicant (P4TENTS1, LLC) filed the ’753 patent as U.S. Appl. No. 16/438,455. EX1002, 937-940.

In the Notice of Allowance, the Examiner identified the following feature recited in issued independent claims 1 and 2 that was alleged to distinguish the prior art:

during detection of at least a portion of the gesture before a completion thereof is detected, **blur, based on a change in a magnitude of the**

gesture being detected on the display, at least a portion of the at least one other object

EX1002, 365 (emphasis in original).

Of the hundreds of references cited in Information Disclosure Statements (IDSs), neither the Applicant nor the Examiner appears to have identified Ahn (EX1004) as a prior art reference relevant to the disclosed invention. Nor did either the Applicant or Examiner explicitly discuss or consider the combination of Ahn and Chaudhri '842 with respect to the above-identified features. However, as will be described in greater detail below, the combination of Ahn and Chaudhri '842 explicitly teaches and renders obvious each of these limitations. *See* Section VI, *infra*. Thus, there exists material error in the allowance of the claims that issued as part of the '754 Patent.

IV. LEVEL OF ORDINARY SKILL

The range of qualifications for a POSITA would have included a Bachelor of Science degree in computer science, computer engineering, electrical engineering, human-computer interaction, or a comparable field and at least two years of professional experience in the design and development of graphical user interfaces (GUIs), human-computer interfaces, or equivalents thereof. EX1003, [29]-[30]. Additional years of experience could substitute for an advanced-level degree (and vice versa). *Id.*

V. CLAIM CONSTRUCTION—37 C.F.R. §42.104(b)(3)

The claim interpretations on which this Petition depends are incorporated in and apparent from the prior art mapping analysis below. *See* Section VI, *infra*. While, presently, no claim terms need be construed to resolve issues of controversy raised by this Petition, *see Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011), Petitioner reserves the right to address and respond to any construction advanced by Patent Owner or the Board.

VI. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. GROUND 1A—Obviousness Over Ahn and Chaudhri '842

1. Ahn (EX1004)

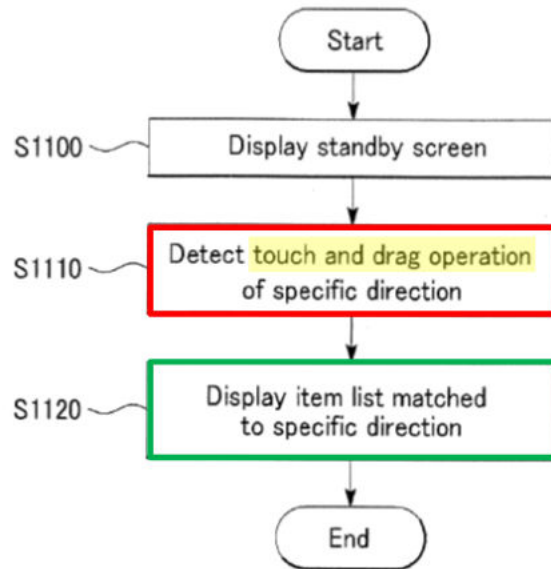
Ahn generally relates to a “method of displaying a menu in a mobile communication terminal.” EX1004, Abstract, [0004]. More specifically, Ahn describes a method of displaying different menus on a display of the mobile communication terminal based on a “selected direction” of user input. *See* EX1004, [0032]-[0033]; EX1003, [32].

With respect to FIGS. 3A-10, Ahn describes various methods for displaying menus on the mobile communication terminal including that “the user can select a direction using any input device that can select a direction, such as . . . a touch screen” EX1004, [0072]. Ahn describes that the mobile communication terminal 100 illustrated in FIG. 1 includes touch input device 10 (e.g., a “touch screen”) through

which “a user inputs various information or instruction with a touch method.” EX1004, [0027]-[0028]. And Ahn provides several additional figures that focus on using a touch screen 10 as an input for the display of menus. *See generally* EX1004, [0095]-[0119]; EX1003, [33].

Specifically, with respect to FIGS. 11-18, Ahn describes “a method of displaying a menu in a mobile communication terminal having a touch input device,” in which a menu is displayed in response to a “touch and drag operation.” EX1004, [0095]-[0099]. Initially, a controller 50 of the mobile communication terminal “detects a touch and drag operation of a specific direction on the touch screen 10 (S1110).” EX1004, [0098]. “As the touch and drag operation is detected, the controller 50 controls to display an item list matched to the specific direction in the display 40 (S1120).” EX1004, [0099]. The “item list” may be for example, a menu list or a file list. EX1004, [0099]. Each different direction of a touch and drag operation may be associated with a different menu or file list. EX1004, [0099]; EX1003, [34].

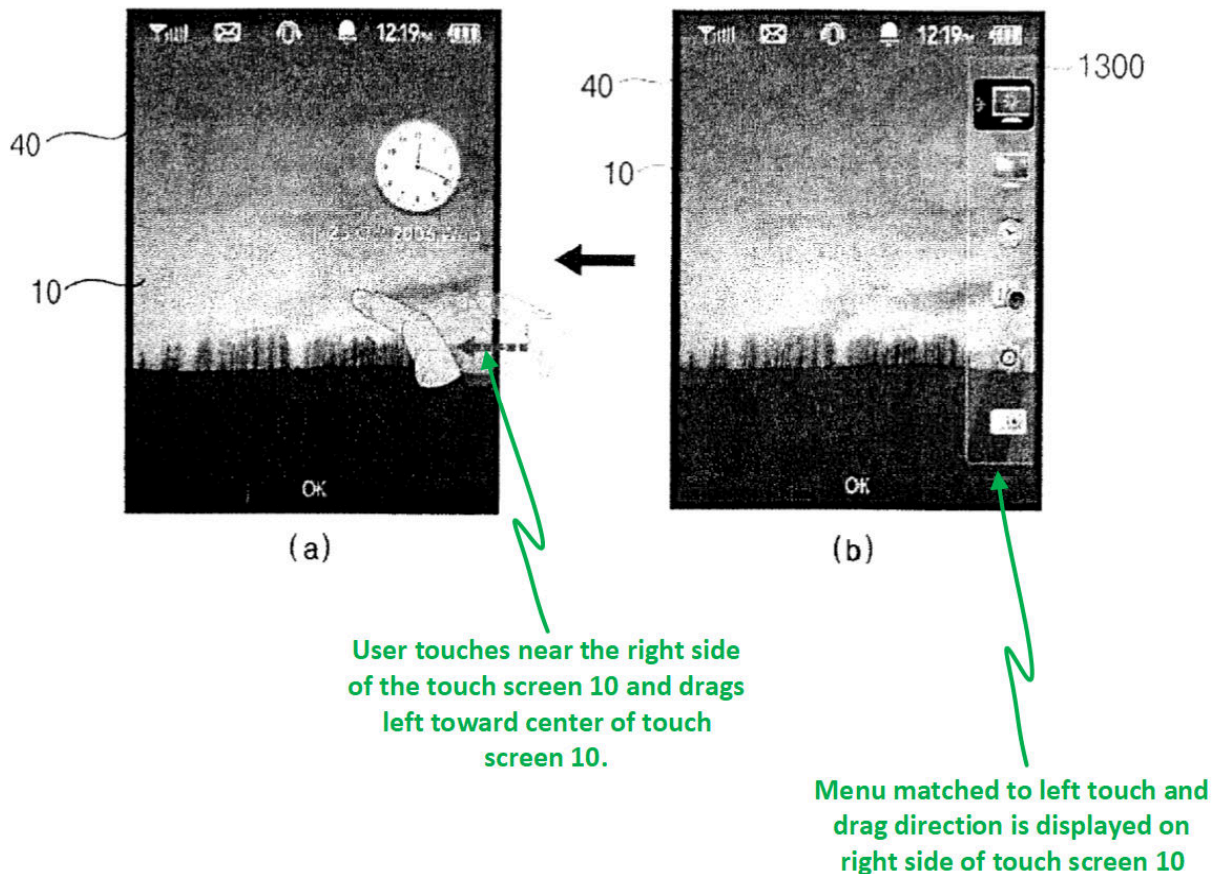
FIG. 11



EX1004, FIG. 11 (annotated)

In one example illustrated in FIGS. 13a and 13b, “if the user touches a specific position of the touch screen 10 and drags the touch in a left direction a menu list 1300 matched to a left direction is displayed in the display 40.” EX1004, [0102]. As can be seen in FIG. 13a, a user initially touches near the right side or edge of the touch screen 10 and initiates the drag gesture to open the menu. *See* EX1004, FIG. 13a, [0102]; EX1003, [35]. As a result of controller 50 detecting the gesture, “a menu list matched to a left direction is set to be displayed at the right side of the display 40 (FIG. 13(b)).” EX1004, [0104].

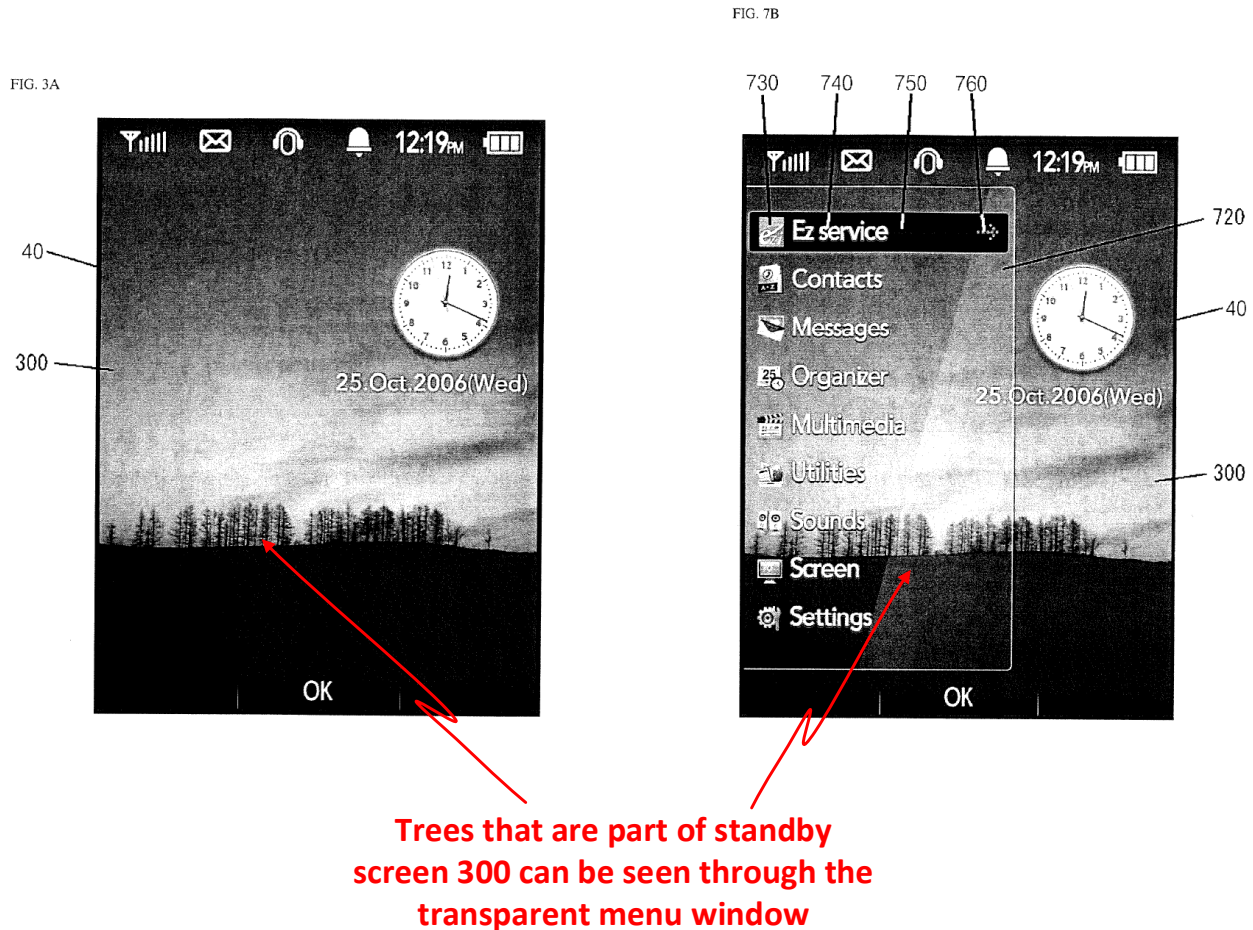
FIG. 13



EX1004, FIGS 13a and 13b (annotated)

Ahn describes that the displayed menus may be “transparently displayed on the standby screen 300.” EX1004, [0070]. This can be seen, for example, by comparing FIG. 3A, which shows standby screen 300 without any menus, and FIG. 7B, which shows the basic setting menu list 720 “displayed in a transparent window form in a left area of the standby screen 300.” EX1004, [0064]; EX1003, [36]. Ahn describes that transparent menu windows ensure that “the preset standby screen 300

is not hidden by the pop-up menu window 340.” EX1004, [0039]. However, Ahn is not limited to these transparent menu windows. EX1003, [36].



EX1004, FIGS. 3A and 7B (annotated)

Ahn teaches at least two ways that its user interface may utilize blur. First, Ahn teaches that, instead of a transparent form, its menus “can be embodied in a translucent form or an opaque form, depending on implementation.” EX1004, [0070] (emphasis added). A POSITA would have known and found it obvious that, when differentiated from “transparent” and “opaque” in the manner they are used by

Ahn, the word “translucent” means “allowing light, but not detailed images, to pass through; semitransparent.” EX1009, 6. A POSITA would have understood not transmitting detail as a type of blurring, because the word “blur” means to “make or become unclear or less distinct.” EX1009, 3. In other words, a POSITA would have known and found it obvious that Ahn contemplates that, when embodied in translucent form, its menus would have blurred at least a portion of the background standby screen (*e.g.*, shown in FIG. 12). EX1003, [37].

FIG. 3A

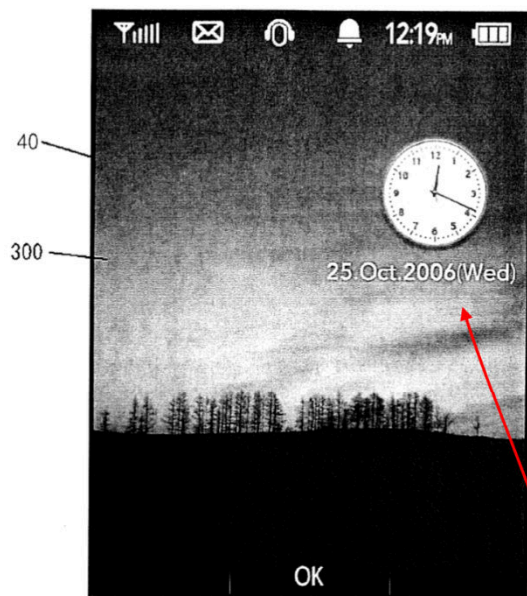
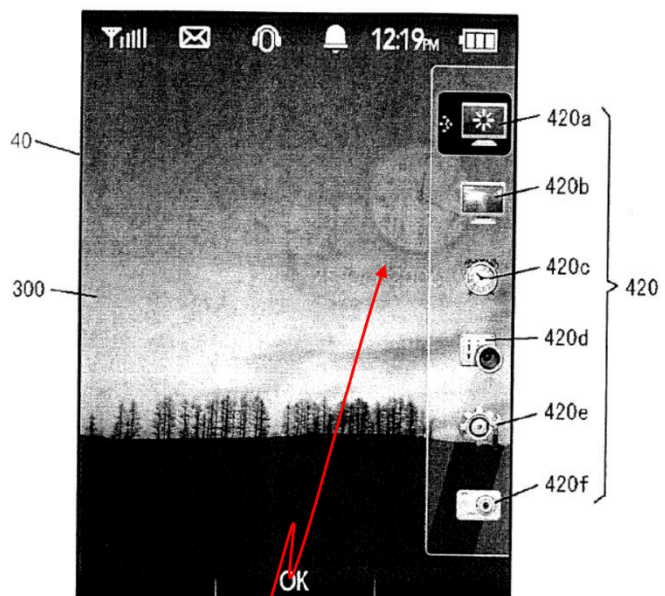


FIG. 4B



**Clock widget is blurred when user
menu 420 is opened**

EX1004, FIGS. 3A and 4B (annotated)

Second, Ahn shows that opening a menu can blur at least a portion of the standby screen 300. EX1003, [38]. In FIG. 3A “a standby screen 300 set by a user is displayed in the display 40 of the mobile communication terminal 100.” EX1004, [0036]. Ahn illustrates that a clock widget is part of the background standby screen 300. *See* EX1004, [0036], FIG. 3A; EX1003, [38]. A similar clock widget is shown as part of the background standby screen 300 in FIGS. 12 and 13a. *See* EX1004, [0097], [0102], FIGS. 12, 13a; EX1003, [38]. As can be seen in FIG. 4B, when the user menu 420 is opened, Ahn illustrates that the clock widget is blurred, which is pointed out with red arrows in the above annotation of FIGS. 3A and 4B. *See* EX1004, [0102], FIG. 13a; EX1003, [38]. A similar blurring effect of the clock widget can also be seen in FIGS. 10 and 13B. *See* EX1004, FIGS. 10, 13B; EX1003, [38].

Ahn does not explicitly explain the purpose of blurring the clock widget or otherwise limit the implementation details a POSITA might utilize in providing this effect. EX1003, [39]. Thus, a POSITA would have naturally turned to teachings like those provided by Chaudhri '842 when developing the blurring shown in FIGS. 4B, 10, and 13B. EX1003, [39].

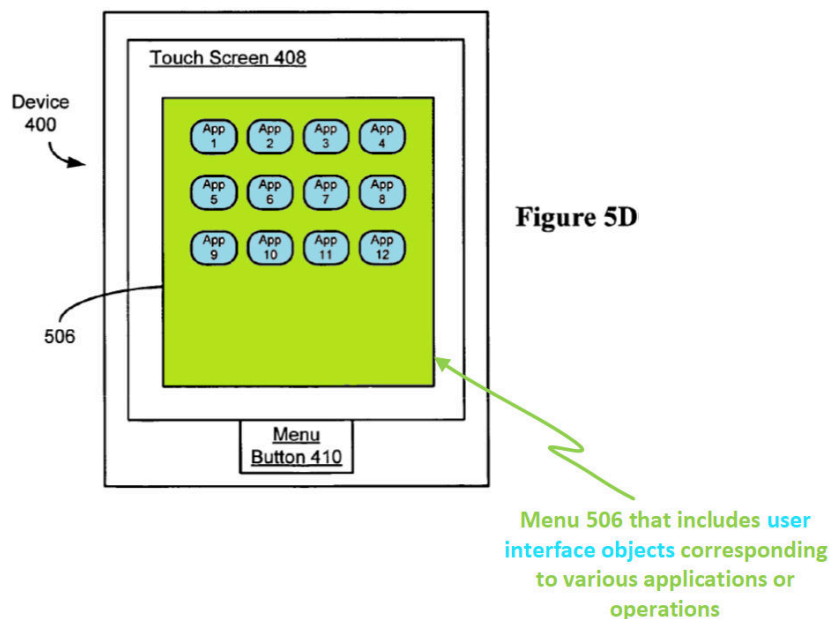
2. Chaudhri '842 (EX1005)

Like the '754 Patent and Ahn, Chaudhri '842 “relate[s] generally to user interfaces that employ touch-sensitive displays.” EX1005, [0002]; EX1003, [40].

Chaudhri '842 recognized that “there is a need for more efficient, user-friendly procedures for transitioning such devices, touch screens, and/or applications between user interface states (e.g., from a user interface state for a first application to a user interface state for a second application, between user interface states in the same application, or between locked and unlocked states).” EX1005, [0006]. In one embodiment described in greater detail below, Chaudhri '842 describes supplying visual feedback to a user who is transitioning between user interface states on a touch screen by providing “visual differentiation between the *user-interface object* and the *background*, based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof.” See EX1005, [0085]; EX1003, [40]. Through this embodiment, Chaudhri '842 provides at least one possible set of implementation details particularly relevant to the blurring shown in Ahn. EX1003, [40].

Like Ahn's mobile communication terminal, Chaudhri '842 describes a portable electronic device 100 that includes a touch screen 126. EX1005, [0026]; EX1003, [41]-[42]. “The device 100 may have a plurality of user interface states.” EX1005, [0048]. While many of the figures in Chaudhri '842 focus on a transition between a locked and unlocked state, Chaudhri '842 is clear that its disclosure applies more generally to any transitions between user interface states, such as states of a plurality of applications. See EX1005, [0006], [0048], [0079], [0081]; EX1003, [43]. In at least one example, a user interface state transition described by Chaudhri

'842 involves the display of a menu that “includes interactive user-interface objects corresponding to various applications or operations.” EX1005, [0076], FIG. 5D; EX1003, [43].



EX1005, FIGS 5D (annotated)

With respect to FIG. 6 (reproduced below), Chaudhri '842 describes “a process 600 for indicating progress towards satisfaction of a user input condition.” EX1005, [0080]. “While an electronic device is in a first user-interface state, progress is detected (602) towards satisfaction of a user input condition needed to transition to a second user-interface state.” EX1005, [0081]. “While the device is in the first user-interface state, progress is indicated (604) towards satisfaction of the condition by transitioning an optical intensity of one or more user interface objects associated with the second user-interface state.” EX1005, [0082].

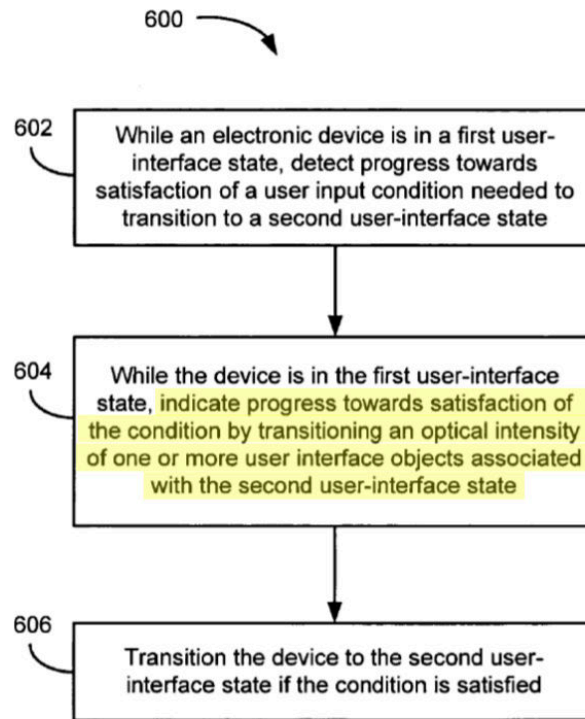


Figure 6

EX1005, FIGS 6 (annotated)

Chaudhri '842 describes that “the optical intensity may be the visual differentiation between the *user-interface object* and the *background*, based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof.” EX1005, [0085]. Among the various types of user-interface objects contemplated by Chaudhri '842 are, “without limitation, text, images, icons, soft keys (or ‘virtual button’), pull-down menus, radio buttons, check boxes, selectable lists, and so forth.” EX1005, [0060]. Accordingly, Chaudhri '842 describes

differentiating between a menu and a background displayed on the touch screen during its user interface state transition process. EX1003, [45].

The changes “in optical intensity of the user-interface objects provide[] a user with sensory feedback of the progress in transitioning between user interface states.” EX1005, [0082]. As shown above in FIG. 6, the transition between user interface states is dictated by “satisfaction” of a “user input condition.” EX1005, [0081]; *see also* EX1005 [0047] (“The predefined set of functions that are performed exclusively through the touch screen and the touchpad include navigation between user interfaces”). Chaudhri ’842 describes that this user input condition may include “a predefined gesture” and that “progress of the gesture may be defined in terms of how much of the gesture is completed.” EX1005, [0088]. The predefined gesture may include, for example, the user “dragging an image to a predefined location.” EX1005, [0089]. In these examples, as the user completes the predefined gesture (e.g., dragging an image), Chaudhri ’842 teaches that changing the optical intensity of user interface objects helps the user see and understand that their gesture is causing a transition in user interface states and the progress they are making. *See* EX1005, [0082]; EX1003, [46].

In one example, Chaudhri ’842 describes that the transition may appear to a user as though objects associated with the second user interface state “fade in” while

objects associated with the first user interface state “fade out.” *See* EX1005, [0079], [0087]; EX1003, [47].

3. The Combination, Reasons to Combine, & Expectation of Success

Like the '754 patent, the disclosures of Ahn and Chaudhri '842 seek to improve the usability of mobile devices with relatively small display screens. EX1003, [61]. Accordingly, the Ahn-Chaudhri combination represents the predictable and expected result of applying in the context of Ahn's touch screen mobile device: the user interface state transition techniques described by Chaudhri '842. EX1003, [61]. From a POSITA's perspective in 2011, integrating the supplemental teachings of Chaudhri '842 with Ahn's disclosure would have involved nothing more than applying known solutions to known problems in the field of computer interfaces and applications to achieve predictable outcomes. EX1003, [61]. The fundamental aspects of Ahn's disclosure would remain intact, bolstered by the well-known and beneficial teachings of Chaudhri '842 to successfully arrive at the '754 patent's claimed invention. EX1003, [61].

(a) Applying Chaudhri '842's teachings about user interface state transition in the context of Ahn's touch screen mobile device

A POSITA would have been motivated to use interface state transition techniques described by Chaudhri '842 into Ahn's touch screen mobile device.

EX1003, [62]. The predictable result of this Ahn-Chaudhri combination is a mobile device that changes an optical intensity of one or more user interface objects as a function of progress towards satisfaction of a user's gesture input that transitions the mobile device from one user interface state to another. EX1003, [62]. The following independent reasons support the Ahn-Chaudhri combination.

First, Chaudhri '842 provides one example of implementation details that are lacking for a feature otherwise disclosed in Ahn. EX1003, [63]. As discussed in Section VI.A.1, *supra*, Ahn already illustrates in FIGS. 3A and 4B that the process of opening the edge menus may cause user interface objects that are displayed as part of the standby screen 300 (e.g., a clock widget) to be blurred when the edge menu is opened and displayed on the screen. EX1003, [63]. However, Ahn does not provide further details about this blurring process and leaves the implementation details to POSITAs. EX1003, [63].

Chaudhri '842 provides one example of implementation details a POSITA would have found obvious to utilize when implementing the blurring already specifically taught in Ahn. EX1003, [64]. Specifically, as discussed in Section VI.A.2, *supra*, Chaudhri '842 provides details for utilizing transitions in optical intensity during transitions in user interface state. EX1003, [64]. A POSITA would have understood and found obvious that the opening of the edge menus described in Ahn are a form of transition in user interface state. EX1003, [64]. Furthermore, a

POSITA would have recognized that the touch and drag gesture described in Ahn for opening the edge menus is akin to the dragging gestures described in Chaudhri '842 for transitioning between user interface states. *See, e.g.*, EX1004, [0099] (“As the touch and drag operation is detected, the controller 50 controls to display an item list matched to the specific direction”); EX1005, [0075] (“performing the gesture by moving her finger, which is in continuous contact with the touch screen 408, in the direction of movement 504”); EX1003, [64]. In the context of these related gestures and transitions, Chaudhri '842 provides additional details about the use of varying optical intensity for user interface objects that a POSITA would have found helpful to implement the optical effects shown but not otherwise described in Ahn (e.g., with respect to the clock widget in FIGS. 3A and 4B). EX1003, [64].

Second, Chaudhri '842 teaches that the “change in optical intensity of the user-interface objects provides a user with sensory feedback of the progress in transitioning between user interface states.” EX1005, [0082]. Based on these teachings a POSITA would have understood and found obvious that, as a user is performing a predefined gesture, for example, the changes in optical intensity provide the user a visual indication that they are performing a particular operation (e.g., the optical intensity changes help the user see more clearly that the user interface state is changing), what the operation is doing (e.g., the optical intensity changes help the user visualize what is changing as a result of the gesture), and how

far the user is in completing the gesture that will effectuate the change in user interface states. *See* EX1005, [0006], [0082], [0088]-[0089], [0108]; EX1003, [65]. To help direct a user with respect to successfully performing the predefined gesture, Chaudhri '842 teaches that the user interface may additionally include “cues” to help the user know what gesture to utilize and whether they are correctly performing the gesture (*e.g.*, graphics such as movable images that, when combined with the transition in optical intensity help the user visualize the correct gesture and how to complete it successfully). *See* EX1005, Abstract, [0054], [0062], [0073]; EX1003, [65]. Furthermore, Chaudhri '842 teaches that changes in optical intensity help to create “visual differentiation between the user-interface object and the background,” which a POSITA would have understood and found obvious would have been visually helpful to a user both during the predefined gesture and after it is complete. *See* EX1005, [0085]; EX1003, [65]. A POSITA would have understood and found obvious that these explicit benefits of Chaudhri '842's techniques would have been directly applicable to Ahn's mobile terminal and the opening of its edge menus. EX1003, [65].

Third, a POSITA would have known that transparency, translucency/blurring, and other “focus and context” techniques may be utilized in user interfaces to help draw a user's attention to the most relevant part of a user interface. *See* EX1008, 1-2; EX1003, [66]. Focus and context “techniques enable the user to investigate

specific details of the data while at the same time also providing an overview over the embedding of the data under investigation within the entire dataset.” EX1008, 1. One type of focus and context (called “cue methods”) allows a “user to select objects in terms of their features, not their spatial relations; usually by assigning a certain visual cue to them,” which “make it possible to query the data for information which is not immediately visible in the initial visualization, while keeping the original layout, and thus not destroying the user’s mental map.” EX1008, 1. These focus and context techniques utilize, for example, blur, transparency, and/or color saturation to help a user navigate through complex and multi-layer user interfaces by drawing the user’s attention to the most relevant layers. *See* EX1008, 1-2; EX1003, [66]. A POSITA would have understood and found obvious that this focusing technique is at least one reason for blurring the clock widget in Ahn’s standby screen 300 so as to focus the user’s attention on and not distract from the open edge menu (e.g., menu 1300 in FIG. 13b). EX1003, [66]. By utilizing the optical intensity variation described in Chaudhri ’842, a POSITA would have recognized that they would have been better focusing a user’s attention on the most relevant object (i.e., the now opened menu). EX1003, [67].

Fourth, a POSITA would have known that varying optical intensity for a user interface object (e.g., the blurring of Ahn’s clock widget) as a function of the magnitude of the user’s touch and drag gesture would have been one of a limited

number of ways of implementing the blurring effect that's shown in FIGS. 4B, 10, and 13B of Ahn. EX1003, [67]; *see Uber Technologies, Inc. v. X One, Inc.*, 957 F.3d 1334, 1339-40 (Fed. Cir. 2020). Either a POSITA could have implemented the blurring effect in a binary fashion (*e.g.*, toggling instantaneously between unblurred and blurred) or progressively varied the blur as a function of the user's gesture, as taught by Chaudhri '842. EX1003, [67].

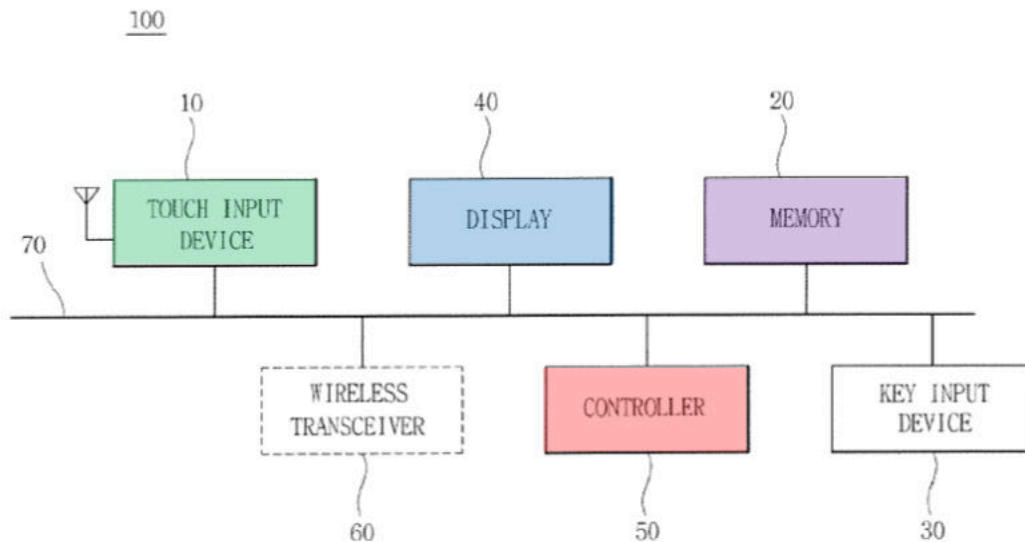
4. Claim Element Analysis

(a) Claim 2

[2.a]

The Ahn-Chaudhri combination renders obvious Element [2.a]. EX1003, [78]-[82]. For example, Ahn describes a mobile communication terminal 100 that comprises “a **touch input device 10**, a **memory 20**, a key input device 30, a display 40, a **controller 50**, and a wireless transceiver 60.” EX1004, [0027], FIG. 1.

FIG. 1



EX1004, FIG. 1 (highlighted)

“The **memory 20** comprises a program memory and a data memory. Programs for controlling a general operation of the mobile communication terminal 100 are stored in the program memory.” EX1004, [0029]. A POSITA would have understood or found obvious that Ahn’s **memory 20** is *at least one non-transitory memory*, as recited in [1.a]. EX1003, [79].

“The **touch input device [10]** is a device in which a user inputs various information or instruction with a touch method. The touch input device [10] comprises, for example, a touch screen or a touch pad.” EX1004, [0028]. When described with respect to FIGS. 13-15, Ahn explains that the user provides input (e.g., a touch and drag operation) through the touch screen 10, and display 40 is illustrated as being collocated with the touch screen 10 so that it can “match” the

display of menus with these gestures. *See* EX1004, FIGS. 13-15, [0101]-[0104]. Though Ahn describes the touch screen 10 and **display 40** as separate elements, a POSITA would have understood and found obvious that these elements may be the same physical device, consistent with the description of FIGS. 13-15. EX1003, [80]. Indeed, Chaudhri '842 addresses similar user interface problems for similar mobile touchscreen devices, and Chaudhri '842 describes that its portable electronic device includes a “touch screen 126 [that] provides both an output interface and an input interface between the device and a user.” EX1005, [0033]. A POSITA would have understood or found obvious that Ahn’s **touch input device 10** is a *touch screen*, as recited in [2.a]. EX1003, [80].

“The **controller 50** controls a general operation of the mobile communication terminal 100.” EX1004, [0032]. Ahn does not explicitly describe hardware implementation details for controller 50. EX1003, [81]. However, **controller 50** is described, for example, as interfacing with **memory 20** (*see* EX1004, [0099]-[0100]), controlling the **display 40** (*see* EX1004, [0099], [0106]. [0108]), and detecting a touch and drag operation input via **touch input device 10** (*see* EX1004, [0099], [0107], [0109]). EX1003, [81]. A POSITA would have understood and found obvious that Ahn’s description of controller 50 is indicative that at least one known hardware implementation for controller 50 would have been *one or more processors*, as recited in [1.a]. EX1003, [81]. Indeed, Chaudhri '842 addresses

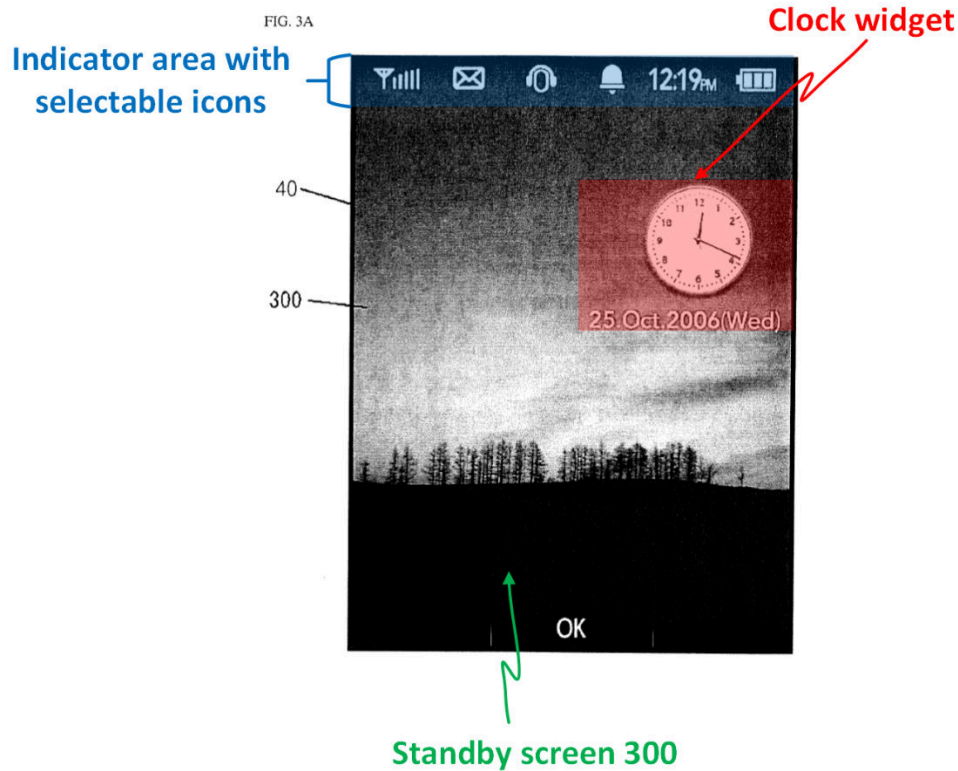
similar user interface problems for similar mobile touchscreen devices, and Chaudhri '842 describes that their respective devices comprise *one or more processors*, as recited in [2.a]. See EX1005, [0026] (portable electronic device “includes a memory 102, a memory controller 104, one or more processing units (CPUs) 106, a peripherals interface 108, RF circuitry 112, audio circuitry 114, a speaker 116, a microphone 118, an input/output (I/O) sub system 120, a touch screen 126, ...”); EX1003, [81]. Furthermore, Ahn describes that each of the **memory 20**, **touch input device 100**, and **controller 50** “may be connected by a bus 70.” EX1004, [0027]. Thus, a POSITA would have understood and found obvious that Ahn’s **controller 50** is *one or more processors in communication with the at least one non-transitory memory, and the touch screen*, as recited in [2.a].

Furthermore, a POSITA would have understood or found obvious that Ahn’s “programs for controlling a general operation of the mobile communication terminal [] stored in the program memory” of **memory 20** are *instructions in the at least one non-transitory memory*, as recited in [2.a]. EX1005, [0029]; EX1003, [82]. Indeed, Chaudhri '842 address similar user interface problems for similar mobile touchscreen devices, and Chaudhri '842 describes that its respective devices comprise *one or more processors execute instructions in the at least one non-transitory memory*, as recited in [2.a]. See EX1005, [0028] (“The one or more processors 106 run various software programs and/or sets of instructions stored in

the memory 102 to perform various functions for the device 100 and to process data.”); EX1003, [82]. Accordingly, a POSITA would have understood and found obvious that *the one or more processors* (e.g., Ahn’s **controller 50**) *execute instructions* (e.g., Ahn’s “programs”) *in the at least one non-transitory memory* (e.g., Ahn’s **memory 20**) *to cause the apparatus* to perform Elements [2.b]-[2.d], as recited in [2.a]. EX1003, [82].

[2.b]

The Ahn-Chaudhri combination renders obvious Element [2.b]. EX1003, [83]-[87]. For example, with respect to FIG. 3A, Ahn describes that “a standby screen 300 set by a user is displayed in the display 40 of the mobile communication terminal 100.” EX1004, [0036]. Ahn illustrates a clock widget as part of this standby screen 300. *See* EX1004, FIGS. 3A, 12 and 13a; EX1003, [84]. Ahn also illustrates that several menu items are displayed at the top of the standby screen 300. *See* EX1004, FIGS. 3A, 3C, 12 and 13a, [0040]; EX1003, [84]. Ahn describes these menu items are part of an “indicator area 320 [that] comprises a signal intensity icon 330a, a message notification icon 330b, a background music setting icon 330c, a reception mode setting icon 330d, a watch icon 330e, and a battery residual quantity display icon 300f, for example.” EX1004, [0040]. And, unlike other menus that are only displayed after a specific gesture, “various icons can be displayed in the indicator area 320 on the standby screen 300.” EX1004, [0040].



EX1004, FIG. 3A (annotated)

Indeed, for the touch interface embodiments described with respect to FIGS. 11-18, Ahn does not include a separate discussion of opening the indicator area 320, as it does with regard to the menus associated with the bottom and right and left sides of the display. *See generally* EX1004, [0095]-[0119]; EX1003, [85]. Thus, a POSITA would have thus understood and found obvious that the standby screen 300 includes indicator area 320 and that a user would have been able to directly activate and interact with its various icons directly from the standby screen 300. EX1003, [85].

A POSITA would have understood and found obvious that at least one of the icons in the indicator area 320 and the clock widget displayed on display 40 of Ahn's mobile communication terminal 100 are *an object and at least one other object*, respectively, as recited in [2.b]. EX1003, [86]. Indeed, Chaudhri '842 describes menus and the background screen as "objects." See EX1005, [0003] ("A device may display one or more soft keys, menus, and other user-interface objects on the touch screen"), [0041] ("Note that the term 'graphics' includes any object that can be displayed to a user, including without limitation text, web pages, icons (such as user-interface objects including soft keys), digital images, videos, animations and the like."), [0060] ("The user-interface objects are objects that make up the user interface of the device and may include, without limitation, text, images, icons, soft keys (or 'virtual buttons'), pull-down menus, radio buttons, check boxes, selectable lists, and so forth."), [0076] ("The menu 506 includes interactive user-interface objects corresponding to various applications or operations. A user may interact with the user-interface objects to activate an application or perform an operation."); EX1003, [86].

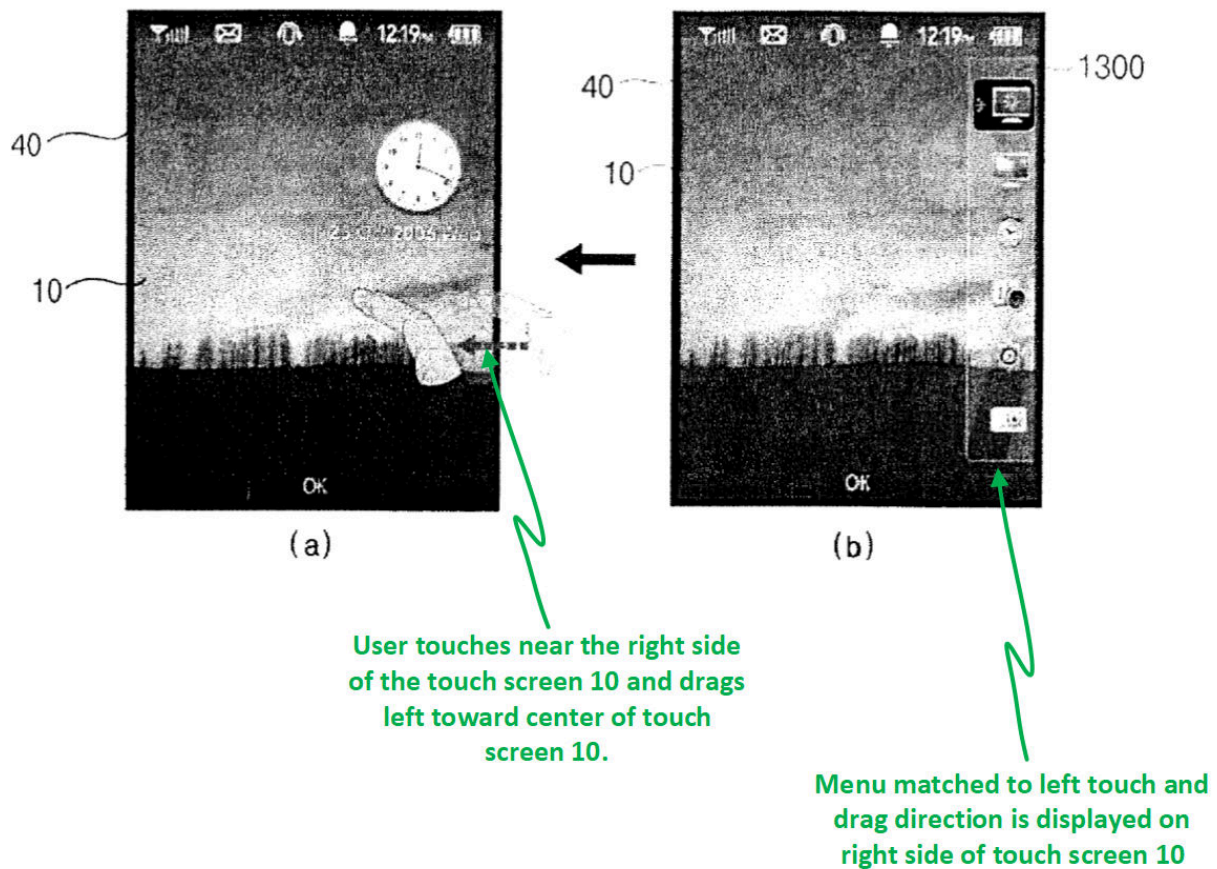
From at least these teachings, a POSITA would have understood and found obvious that the mobile device of the Ahn-Chaudhri would have *display[ed] an object* (e.g., icons displayed as part of standby screen 300) *and at least one other*

object (e.g., the clock widget of standby screen 300), as recited in [2.b]. EX1003, [87].

[2.c]

The Ahn-Chaudhri combination renders obvious Element [2.b]. EX1003, [88]-[91]. For example, as discussed in Section IV.A.1, *supra*, Ahn describes “a method of displaying a menu in a mobile communication terminal having a touch input device,” in which a menu is displayed in response to a “touch and drag operation.” EX1004, [0095]-[0099]. Initially, a controller 50 of the mobile communication terminal “detects a touch and drag operation of a specific direction on the touch screen 10 (S1110).” EX1004, [0098].

FIG. 13



EX1004, FIGS. 13a and 13b (annotated)

In one example illustrated in FIGS. 13a and 13b, “if the user touches a specific position of the touch screen 10 and drags the touch in a left direction a menu list 1300 matched to a left direction is displayed in the display 40.” EX1004, [0102]. As can be seen in FIG. 13a, a user initially touches near the right side or edge of the touch screen 10 and initiates the drag gesture that moves inward toward the center of the display. See EX1004, FIG. 13a, [0102]; EX1003, [90]. A POSITA would have understood and found obvious that Ahn’s “touch and drag operation” is a

gesture. *See* EX1005, [0055] (“As used herein, a gesture is a motion of the object/appendage making contact with the touch screen. For example, the predefined gesture may include a contact of the touch screen on the left edge (to initialize the gesture), a horizontal movement of the point of contact to the opposite edge while maintaining continuous contact with the touch screen, and a breaking of the contact at the opposite edge (to complete the gesture).”); EX1003, [90].

Thus, as shown in at least FIGS. 13a and 13b and described with respect thereto, Ahn teaches, ***detect[ing] at least part of a gesture on the touch screen***, as recited in [2.c]. EX1003, [91]].

[2.d]

The Ahn-Chaudhri combination renders obvious Element [2.d]. EX1003, [92]-[102].

As discussed in Section IV.A.1, *supra*, Ahn describes the use of blurring in at least two ways. EX1003, [93]. First, Ahn describes that the displayed menus may be “displayed on the standby screen 300. . . in a translucent form” EX1004, [0070] (emphasis added). A POSITA would have known and found it obvious that, when differentiated from “transparent” and “opaque” in the manner they are used by Ahn, the word “translucent” means “allowing light, but not detailed images, to pass through; semitransparent.” EX1009, 6. A POSITA would have understood not transmitting detail as a type of blurring, because the word “blur” means to “make or

become unclear or less distinct.” EX1009, 3. This is consistent with the ’754 Patent’s use of the word “blur” in its claims, because dependent claim 61, for example, recites that “the blur includes changing a translucency of the at least portion of the at least one other object.” EX1001, 99:51-53; EX1003, [93]. In other words, a POSITA would have known and found it obvious that Ahn contemplates that, when embodied in translucent form, its menus would have blurred at least a portion of the background standby screen (*e.g.*, shown in FIG. 12) by rendering the portion under which it is displayed as unclear or less distinct. EX1003, [93].

A POSITA would have understood and found obvious that, as a user utilizes the dragging gesture to open a given translucent menu, the translucent menu would progressively slide onto the display as a function of the magnitude of the user’s dragging gesture. EX1003, [94]. With respect to FIG. 18, Ahn describes that the display 40 may utilize “a graphical display for notifying a start position of a touch and drag operation to a user,” and clearly shows “a graphical shadow 1800” displayed at a first edge of the display (*e.g.*, the left edge in this example) that indicates the start position of the touch is along the first edge. *See* EX1004, [0118]-[0119]; EX1003, [94]. Ahn explains that “as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.” EX1004, [0118]. Similarly, Chaudhri ’842 describes moving displayed graphics in correspondence with the magnitude of gestures associated with those graphics in

order to provide the user who is performing the gesture a visual confirmation of the gesture and help direct them on how to complete the gesture. *See* EX1005, [0054] (describing the display of “visual cue(s)” to provide “hints or reminders” regarding the action necessary to transition between user interface states), [0060] (describing that the “user may interact with the user-interface objects by making contact with the touch screen at one or more touch screen locations corresponding to the interactive objects with which she wishes to interact” and the “device detects the contact and responds to the detected contact by performing the operation(s) corresponding to the interaction with the interactive object(s)”), [0062] (describing that a visual cue, such as an image, may move along with the gesture as the gesture is detected). A POSITA would have understood and found obvious from these teachings that, in at least implementations like those described with respect to FIG. 18, Ahn’s menu list would have been graphically displayed as sliding onto the display based on a change in a magnitude of the “touch and drag” gesture being detected on the touch screen. EX1003, [94].

A POSITA would have understood and found obvious that, as a translucent menu slides onto the screen in correspondence with the magnitude of the touch and drage gesture, the translucent menu would correspondingly progressively blur the portion of the background over which the menu is displayed (including, *e.g.*, the clock widget) as it slides onto the screen. EX1003, [95]. Accordingly, when

displayed as a translucent window (as opposed to a transparent window), Ahn's menu would have, *during detection of at least a portion of the gesture before a completion thereof is detected, blur[red], based on a change in a magnitude of the gesture being detected on the touch screen, at least a portion of the at least one other object*, as recited in [2.d]. EX1003, [95].

Second, Ahn additionally illustrates blurring at least a portion of background standby screen 300 (e.g., a clock widget) as a result of a user opening one of the menus. See EX1004, FIGS. 4B, 10, 13B; EX1003, [96]. In FIG. 3A, Ahn illustrates that a clock widget is part of the background standby screen 300. See EX1004, [0036], FIG. 3A; EX1003, [96]. A similar clock widget is shown as part of the background standby screen 300 in FIGS. 12 and 13a. See EX1004, [0097], [0102], FIGS. 12, 13a; EX1003, [96]. As can be seen in FIG. 4B, when the user menu 420 is opened, Ahn illustrates that the clock widget becomes blurred, which is pointed out with red arrows in the below annotation of FIGS. 3A and 4B. See EX1004, [0036], FIGS. 3A, 4B; EX1003, [96]. A similar blurring effect of the clock widget can also be seen in FIGS. 10 and 13B. See EX1004, FIGS. 4B, 10; EX1003, [96]. As above, a POSITA would have understood the illustration of the clock widget in FIGS. 4B, 10, and 13B as "blurred," consistent with the usage of that word in at least dependent claim 61 of the '754 Patent. See EX1001, 99:51-53 ("the blur includes changing a translucency of the at least portion of the at least one other object");

EX1009, 3 (“blur” means “make or become unclear or less distinct”), 6 (“translucence” means “allowing light, but not detailed images, to pass through; semitransparent”); EX1003, [96].

FIG. 3A

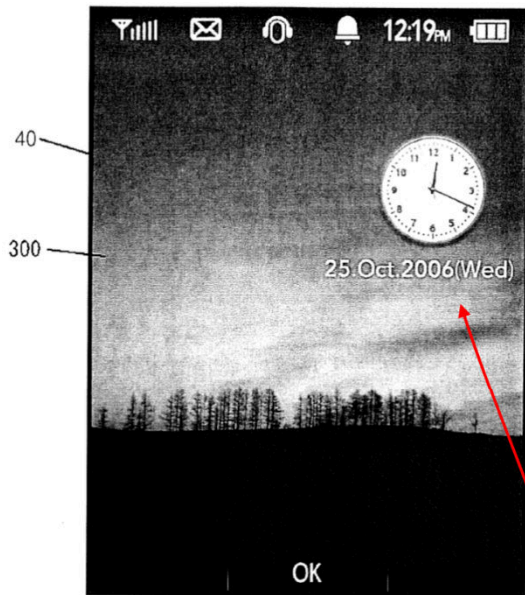
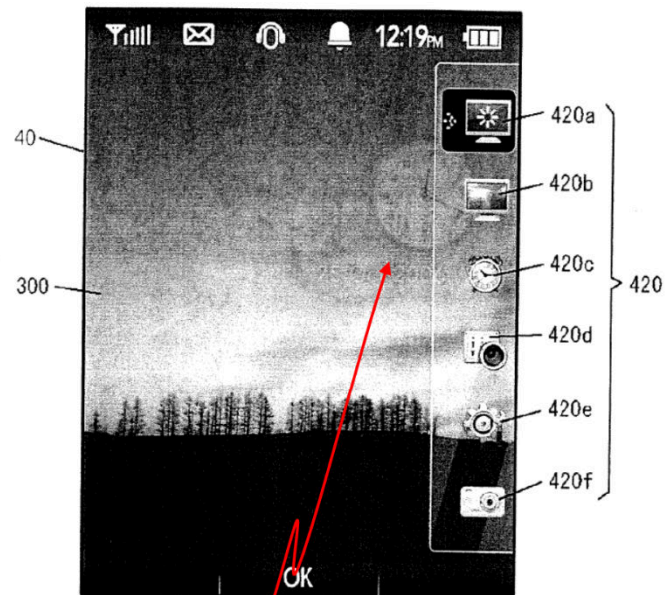


FIG. 4B



**Clock widget is blurred when user
menu 420 is opened**

EX1004, FIGS. 3A and 4B (annotated)

Ahn does not specify or otherwise limit the manner in which a POSITA would have implemented the above-described blurring of its clock widget. EX1003, [97]. For the reasons described in Section IV.A.3, *supra*, a POSITA would have found it obvious to apply Chaudhri '842's user interface state transition techniques—particularly the use of transitioning optical intensity to provide visual feedback

regarding the progress of a transition between user interface states as a result of detecting a user's input of a predefined gesture—in the context of Ahn's mobile communication terminal 100. EX1003, [97].

As discussed in Section IV.A.2, *supra*, Chaudhri '842 describes “a process 600 for indicating progress towards satisfaction of a user input condition.” EX1005, [0080]. “While an electronic device is in a first user-interface state, progress is detected (602) towards satisfaction of a user input condition needed to transition to a second user-interface state,” and “progress is indicated (604) towards satisfaction of the condition by transitioning an optical intensity of one or more user interface objects associated with the second user-interface state.” EX1005, [0081]-[0082].

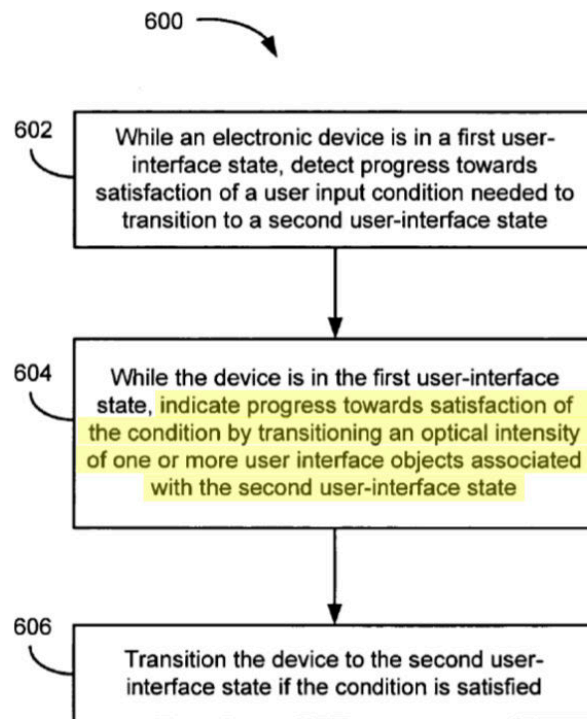


Figure 6

EX1005, FIG. 6 (annotated)

Chaudhri '842 describes that “the optical intensity may be the visual differentiation between the *user-interface object* and the *background*, based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof.” EX1005, [0085]. Among the various types of user-interface objects contemplated by Chaudhri '842 are, “without limitation, text, images, icons, soft keys (or ‘virtual button’), pull-down menus, radio buttons, check boxes, selectable lists, and so forth.” EX1005, [0060]. Accordingly, Chaudhri '842 describes

differentiating between a menu and a background displayed on the touch screen during its user interface state transition process. EX1003, [99].

Chaudhri '842 describes that the optical intensity, and thus “the indication of progress towards completion of the user input condition[,] is a function of the user’s satisfaction of the condition.” EX1005, [0087]. “If the user input condition includes a predefined gesture then the indication of progress of the gesture may be defined in terms of how much of the gesture is completed and how much of the gesture is remaining.” EX1005, [0088]. As the user input condition (*e.g.*, a gesture) progresses, the optical intensity can correspondingly vary in magnitude based on the magnitude of the progress toward gesture completion according to both linear and non-linear functions, such as those illustrated in FIGS. 8A-8C. *See* EX1005, [0087]-[0088]; EX1003, [100].

Applying at least the above teachings of Chaudhri '842 in the context of Ahn’s “touch and drag” gesture and Ahn’s corresponding transition between a user interface state where the standby screen is displayed (*see, e.g.*, EX1004, FIG. 13a) and a user interface state where a menu list 1300 is displayed above or on top of the standby screen (*see, e.g.*, EX1004, FIG. 4B, 10, and 13b), a POSITA would have at least found it obvious to vary, according to the teachings of Chaudhri '842, the optical intensity of the standby screen or at least portions thereof (*e.g.*, the blurring of the clock widget, as shown in FIGS. 4B, 10, and 13b) as a visual indication of a

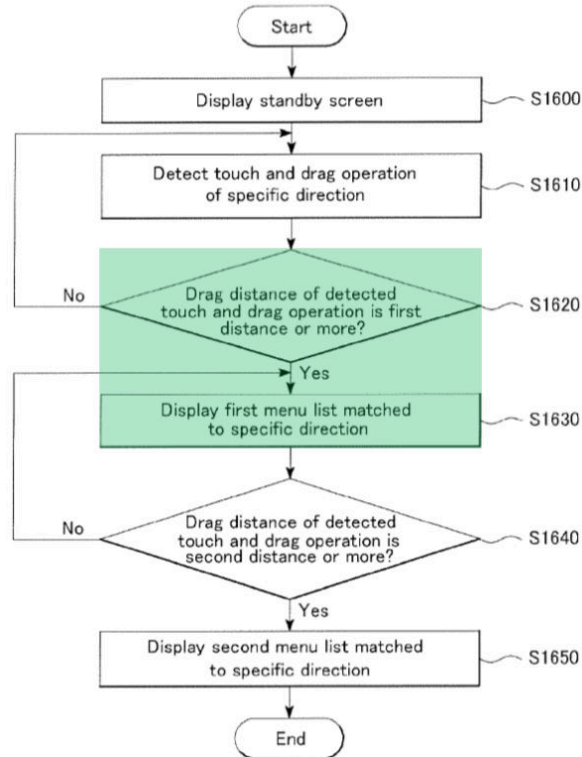
user's progress in completing Ahn's "touch and drag" gesture. *See* EX1005, [0080]-[0089]; EX1003, [101]. In addition to providing a visual indication to the user of their progress in completing the gesture, utilizing this progressive translucency or blurring effect would have helped differentiate between the user-interface object (*e.g.*, the menu list 1300) and the background (*e.g.*, the standby screen and/or clock widget). *See* EX1005, [0085]; EX1003, [101].

Implemented in this or a similarly obvious way, a POSITA would have thus found it obvious based on these combined teachings that the mobile device of the Ahn-Chaudhri combination would have, *during detection of at least a portion of the gesture before a completion thereof is detected, blur[red], based on a change in a magnitude of the gesture being detected on the touch screen, at least a portion of the at least one other object*, as recited in [2.d]. EX1003, [102].

(b) Claim 27

The Ahn-Chaudhri combination renders obvious Claim [27]. EX1003, [132]-[134]. For example, in one embodiment, Ahn describes that "controller 50 controls to sequentially display a plurality of specific menu lists according to a distance of the detected touch and drag operation." EX1004, [0108].

FIG. 16



EX1004, FIG. 16 (highlighted)

Specifically, Ahn describes that “controller 50 determines whether a drag distance of the detected touch and drag operation is a first distance or more (S1620),” and “[i]f a drag distance of the detected touch and drag operation is a first distance or more, the controller 50 controls to display a first menu list matched to the specific direction (S1630).” EX1004, [0109]. Accordingly, Ahn teaches that *the apparatus is configured such that, when the magnitude, including a distance magnitude, of the gesture detected on the touch screen is detected to increase above a distance threshold, a menu is displayed with at least one option*, as recited in Claim [27]. EX1003, [134].

(c) **Claim 37**

The Ahn-Chaudhri combination renders obvious Claim [37]. EX1003, [160]-[162]. Chaudhri '842 describes that “the optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface object,” such that the object transitions from “not perceptible to the user” to being “completely materialized visually and [] perceptible to the user.” EX1005, [0085]. In other words, the transition may appear to a user as though objects associated with the second user interface state (*e.g.*, the menu that’s opened in Ahn) “fade in” while objects associated with the first user interface state (*e.g.*, the clock widget in Ahn) “fade out.” *See* EX1005, [0079], [0087]; EX1003, [161]. Furthermore, Chaudhri '842 teaches that the transition in optical intensity can be “based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof,” meaning the transition can include multiple simultaneous effects, at least several of which a POSITA would have understood as “sharpening”¹ the display. EX1005,

¹ The '754 Patent does not use the word “sharp” or “sharpened” outside of the claims. EX1003, [161], n. 1. However, a POSITA would have understood the word “sharp” in a graphical context to be a subjective perception that is related to edge contrast. EX1012, 1; EX1003, [161], n. 1.

[0085]; EX1003, [161]. Accordingly, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the menu is sharpened when displayed*, as recited in Claim 37.

Consistent with the above teachings of Chaudhri '842, it was well known to combine blur with other “focus and context” techniques, including transparency, to help direct a user’s attention to the most relevant information. *See* EX1008, 2 (“The interest level is a combination of blur and transparency, making less interesting layers more blurred and more transparent at the same time”), 4 (blur “can serve as an additional aid to guide the viewer’s attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1003, [162]. One set of known “focus and context” techniques were “distortion oriented or spatial methods” in which “geometry of the display is distorted to allow a magnification of interesting information without losing the (less magnified) context.” EX1008, 1; EX1003, [162]. “Distortion-oriented techniques are usually used in an explicit way, by actively bringing the interesting objects into focus, *e.g.* by clicking on objects or dragging them around.” EX1008, 1. Thus, a POSITA would have found at least found it obvious based on their broader knowledge of “focus and context” techniques in the user interface art to combine the sharpening described in Chaudhri '842 with other techniques such as magnifying of the relevant object to help better draw the

user's attention to the most interesting part of the display. See EX1008, 1-2; EX1003, [162]. Accordingly, a POSITA would have at least found it obvious *that that the menu is sharpened and magnified when displayed*, as recited in Claim 37. EX1003, [162].

(d) Claim 58

The Ahn-Chaudhri combination renders obvious Claim [58]. EX1003, [189]-[191]. For example, as discussed in Section IV.A.2, *supra*, Chaudhri '842 describes that “the optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface object,” such that the object transitions from “not perceptible to the user” to being “completely materialized visually and [] perceptible to the user.” EX1005, [0085]. In other words, the transition may appear to a user as though objects associated with the second user interface state “fade in” while objects associated with the first user interface state “fade out.” See EX1005, [0079], [0087]; EX1003, [190]. Furthermore, Chaudhri '842 the transition in optical intensity can be “based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof,” meaning the transition can include multiple simultaneous effects. EX1005, [0085]; EX1003, [190]. Indeed, it was well known to combine blur with other “focus and context” visual cues, including transparency, to help direct a user's attention to the most relevant information. See EX1008, 2 (“The interest level is a combination of blur and transparency, making

less interesting layers more blurred and more transparent at the same time”), 4 (blur “can serve as an additional aid to guide the viewer’s attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1003, [190]. Accordingly, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the blur is accompanied by a fading*, as recited in claim 58. EX1003, [191].

(e) **Claim 60**

The Ahn-Chaudhri combination renders obvious Claim [60]. EX1003, [194]-[197]. A POSITA would have understood and found obvious that FIGS. 4B, 10, and 13B illustrate that at least the clock widget portion of standby screen 300 becomes more blurred and transparent as a menu is opened. *See* EX1004, FIGS. 3A, 4B, 10, 13B; EX1003, [195].

FIG. 3A

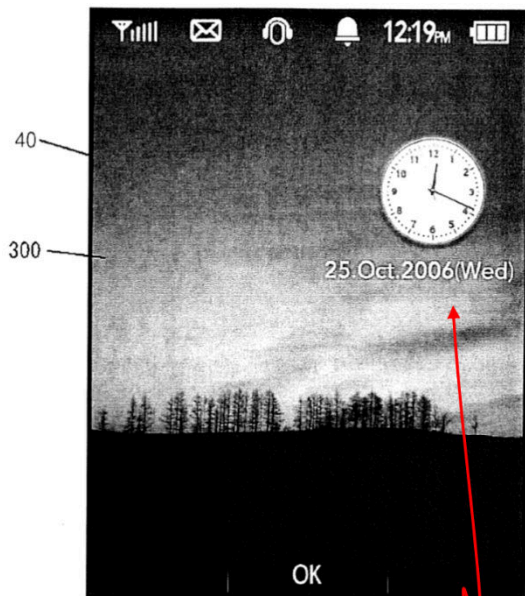
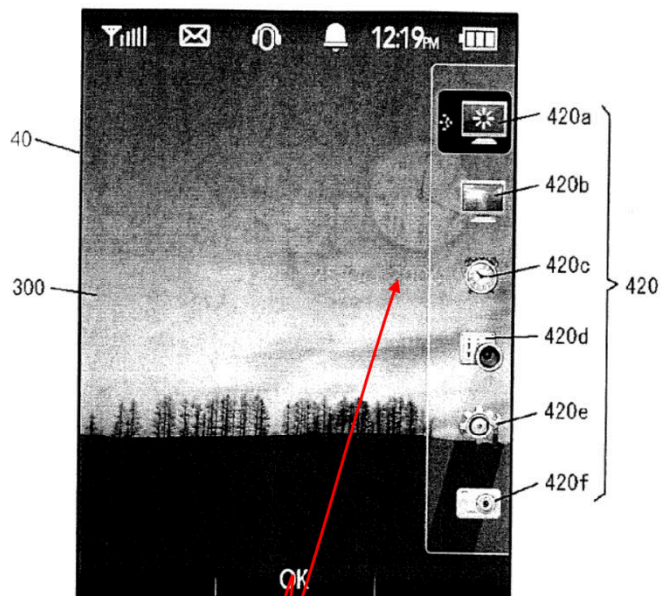


FIG. 4B



**Clock widget appears blurred and
more transparent when user menu
420 is opened**

EX1004, FIGS. 3A and 4B (annotated)

Furthermore, as discussed with respect to Claim [58], *supra*, it was well known to combine blur with other “focus and context” visual cues, including transparency, to help direct a user’s attention to the most relevant information. *See* EX1008, 2 (“The interest level is a combination of blur and transparency, making less interesting layers more blurred and more transparent at the same time”), 4 (blur “can serve as an additional aid to guide the viewer’s attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1003, [196].

Accordingly, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the blur includes changing a transparency of the at least portion of the at least one other object*, as recited in Claim [60]. EX1003, [197].

(f) **Claim 61**

The Ahn-Chaudhri combination renders obvious Claim [61]. As discussed in Section IV.A.1 and with respect to Element [2.d], “translucence” means “allowing light, but not detailed images, to pass through; semitransparent,” and “blur” means to “make or become unclear or less distinct.” EX1009, 3, 6. In other words, “translucence” is at least one type of “blur.” EX1003, [199]. A POSITA would have understood and found obvious that FIGS. 4B, 10, and 13B illustrate that at least the clock widget portion of standby screen 300 becomes more translucent as a menu is opened. *See* EX1004, FIGS. 3A, 4B, 10, 13B; EX1003, [199]. Thus, Ahn teaches that *the apparatus is configured such that the blur includes changing a translucency of the at least portion of the at least one other object*, as recited in Claim [61]. EX1003, [199].

FIG. 3A

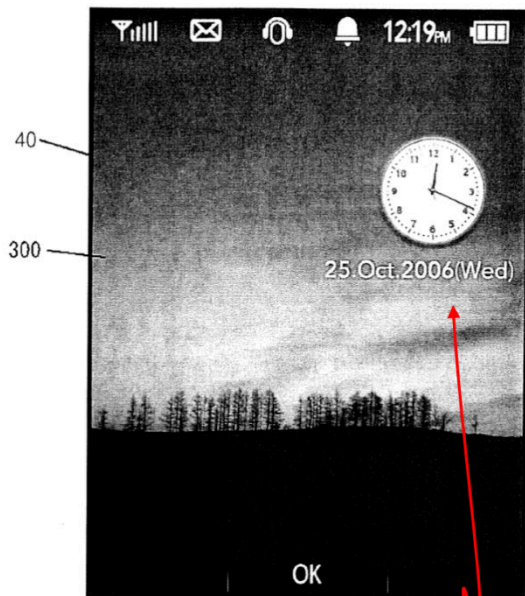
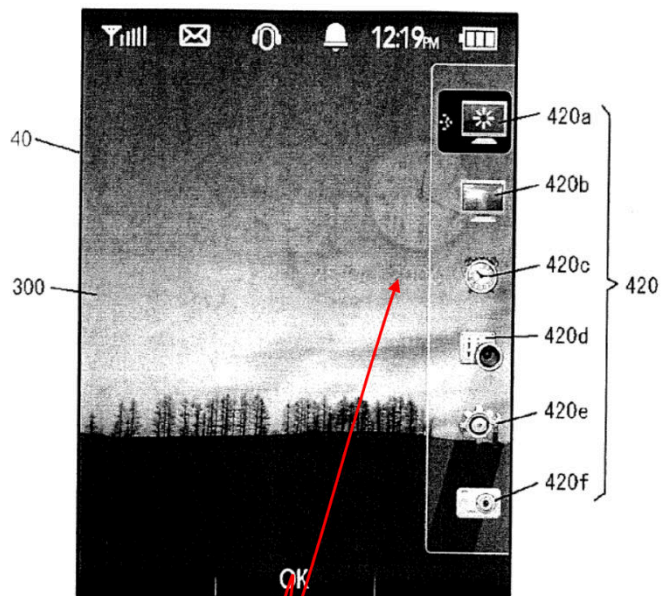


FIG. 4B



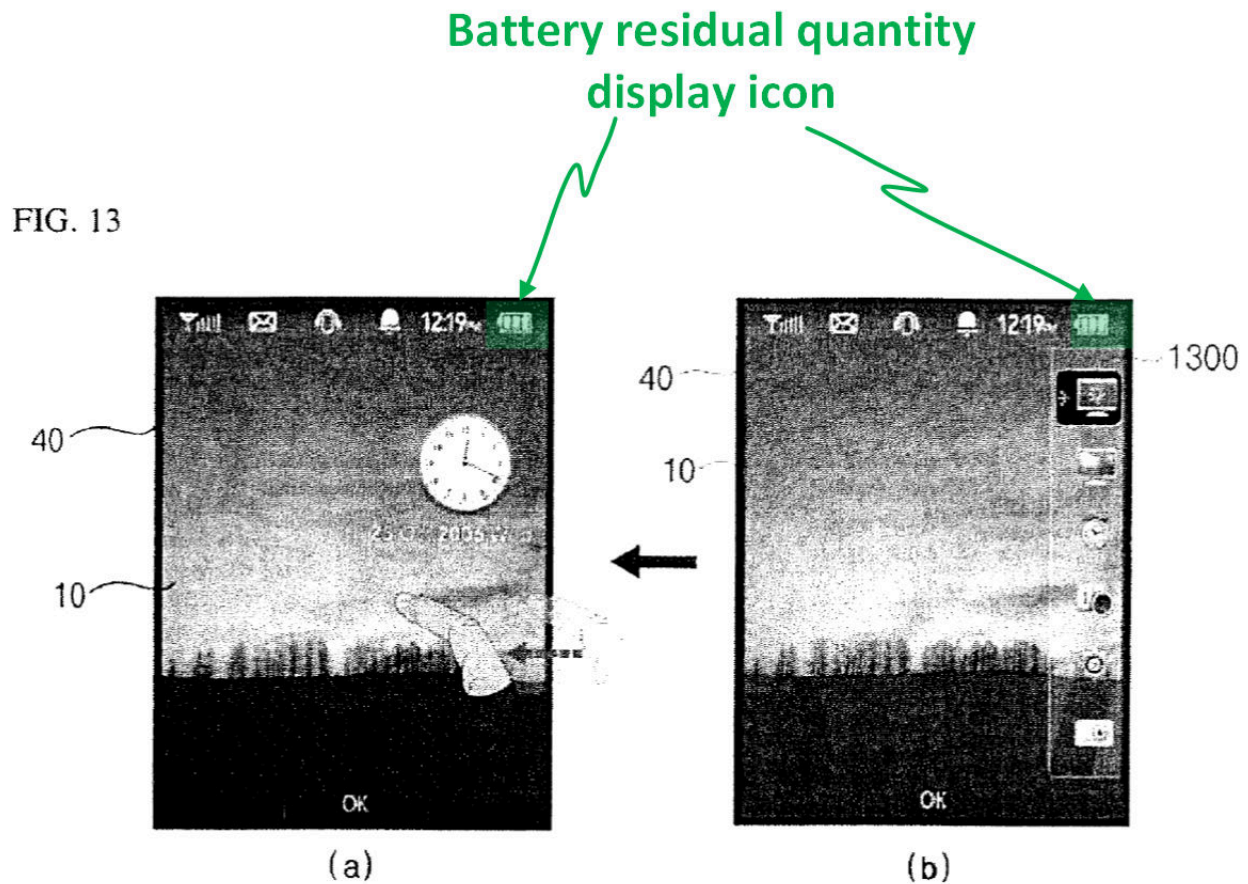
**Clock widget appears translucent
when user menu 420 is opened**

Furthermore, as discussed with respect to Claim [58], it was well known to combine blur with other “focus and context” visual cues to help direct a user’s attention to the most relevant information. *See* EX1008, 2 (“The interest level is a combination of blur and transparency, making less interesting layers more blurred and more transparent at the same time”), 4 (blur “can serve as an additional aid to guide the viewer’s attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1005, [0085] (the transition in optical intensity can be “based on color, hue, color saturation, brightness, contrast,

transparency, and any combination thereof"); EX1003, [200]. Accordingly, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the blur includes changing a translucency of the at least portion of the at least one other object*, as recited in Claim [61]. EX1003, [200].

(g) Claim 62

The Ahn-Chaudhri combination renders obvious Claim [62]. EX1003, [202]-[204]. As discussed with respect to Element [2.b], *supra*, Ahn's indicator area 320 "comprises a signal intensity icon 330a, a message notification icon 330b, a background music setting icon 330c, a reception mode setting icon 330d, a watch icon 330e, and a battery residual quantity display icon 300f, for example." EX1004, [0040].



EX1004, FIGS. 13a and 13b (annotated)

Accordingly, a POSITA would have understood and found obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the object includes a battery-related icon*, as recited in Claim [62]. EX1003, [204].

(h) Claim 63

The Ahn-Chaudhri combination renders obvious Claim [63]. EX1003, [205]-[207].

With respect to FIG. 18, Ahn describes that the display 40 may utilize “a graphical display for notifying a start position of a touch and drag operation to a

user,” and illustrates “a graphical shadow 1800” displayed at an edge of the display. See EX1004, [0118]-[0119]. Ahn explains that “as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.” EX1004, EX1004, [0118]. A POSITA would have understood and found obvious that in those implementations that include a graphical shadow 1800, it is also an *object*, as recited in Element [2.b]. See Element [2.b], *supra* (describing a POSITA’s understanding of the term “object”). EX1003, [206].

Ahn describes that, “if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40, and the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40.” EX1004, [0118]. A POSITA would have understood Ahn’s touch and drag gesture to be a “swipe.” EX1003, [207]. Further, Ahn describes that “as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.” EX1004, [0118]. In other words, Ahn describes that the graphic 1800 moves (*i.e.*, is “dragged”) in response to and along with a user’s touch and drag gesture on the touch screen. See EX1004, [0118]. Based on these teachings a POSITA would have understood and found obvious that *the apparatus is configured such that the gesture includes a swipe gesture (e.g., Ahn’s touch and drag gesture), the at least part of the gesture is detected on the touch screen on the object (e.g., the graphic*

1800), *and the object is displayed to move with the swipe gesture* (e.g., the graphic 1800 is “dragged” with the gesture), as recited in Claim [63]. EX1003, [207].

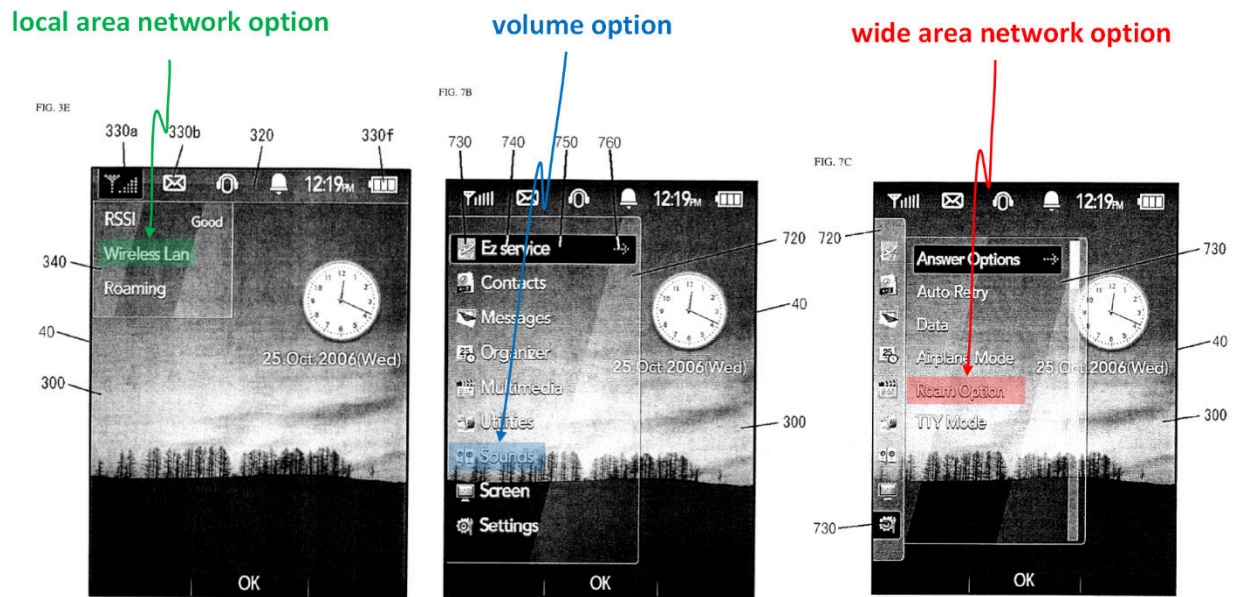
(i) **Claim 64**

The Ahn-Chaudhri combination renders obvious Claim [64]. EX1003, [208]-[211].

As discussed with respect to Claim [58], *supra*, Chaudhri ’842 describes that “the optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface object,” such that the object transitions from “not perceptible to the user” to being “completely materialized visually and [] perceptible to the user.” EX1005, [0085]. In other words, the transition may appear to a user as though objects associated with the second user interface state “fade in” while objects associated with the first user interface state “fade out.” *See* EX1005, [0079], [0087]; EX1003, [209]. Furthermore, Chaudhri ’842 the transition in optical intensity can be “based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof,” meaning the transition can include multiple simultaneous effects. EX1005, [0085]; EX1003, [209]. Indeed, it was well known to combine blur with other “focus and context” visual cues, including transparency, to help direct a user’s attention to the most relevant information. *See* EX1008, 2 (“The interest level is a combination of blur and transparency, making less interesting layers more blurred and more transparent at the same time”), 4 (blur

“can serve as an additional aid to guide the viewer’s attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1003, [209]. Accordingly, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination *is configured such that the menu fades-in*, as recited in Claim [64]. EX1003, [209].

Furthermore, Ahn teaches that the “item list” displayed when a touch and drag gesture is detected “comprises, for example, a menu list or a file list,” and leaves the contents of each list/menu open to the designer and the user. *See* EX1004, [0051] (“The user menu 420 comprises sub-menus set by the user in order for the user to easily enter a menu in which the user frequently uses.”), [0071] (“Please note however that this is an exemplary illustration, and various menus can be displayed, depending on implementation”), [0099]; EX1003, [210]. Thus, the designer or the user can include whatever sub-menus and/or functions they want within an opened list/menu. EX1003, [210]. As illustrated in various of its figures (reproduced below), among the possible sub-menus and/or functions, Ahn teaches or at least suggests that a list/menu may include a wide area network option, a local area network option, and a volume option. *See* EX1004, FIGS. 3E, 7B, 7C; EX1003, [210].



EX1004, FIGS. 3E, 7B, 7C (annotated)

Based on these teachings, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been configured such that a single menu (e.g., user menu 420 that Ahn teaches a user may set to include their most frequently used functions) *includes a wide area network option, a local area network option, and a volume option*, as recited in Claim [64]. EX1003, [211].

(j) Claim 67

The Ahn-Chaudhri combination renders obvious Claim [67]. EX1003, [212]-[215].

As discussed in Section V.A, *supra*, the '754 Patent describes that “virtual display layer refers to a collection of display elements which have all been assigned the same apparent depth within the 3D layered user interface.” EX1001, 68:39-42.

“For example, in one embodiment, a 3D layered user interface may have a virtual foreground display layer and a virtual background display layer.” EX1001, 68:44-47. In some embodiments, “virtual display layers may be given the appearance of depth through the use of 3D depth cues.” EX1001, 68:58-60. However, the ’754 Patent does not teach specific software and or hardware implementation details for achieving these “apparent” visual effects, and instead acknowledges that they “may be implemented in any desired environment.” EX1001, 67:66-68:17; EX1003, [123]. In light of these teachings, a POSITA would have understood a “virtual display layer” to be present whenever one or more display elements appear at “the same apparent depth” of display, regardless of the software and/or hardware mechanisms used to achieve this visual appearance. EX1003, [123].

Ahn describes that the various menus may be “transparently displayed on the standby screen 300,” such that preset standby screen 300 is not completely “hidden” by the menus. EX1004, [0039]; *see also* EX1004, [0070] (“menus displayed on the standby screen 300 can be embodied in a translucent form or an opaque form”). Similarly, Ahn describes that the menus are “displayed in a transparent window form” in various areas “of the standby screen 300.” EX1004, [0064]. In order to display the menus “on” the standby screen 300 using “window forms,” a POSITA would have understood and found obvious that the menu window is and would be displayed in a “virtual display layer,” as that term is broadly used in the ’754 Patent,

and that the virtual display layer containing the menu is displayed “on” at least one other virtual display layer that contain(s) the various elements of the standby screen 300. *See* EX1004, FIGS. 3A, 4B, [0064], [0070]; EX1003, [124], [213].

Chaudhri '842 describes that “the optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface object,” such that the object transitions from “not perceptible to the user” to being “completely materialized visually and [] perceptible to the user.” EX1005, [0085]. In other words, the transition may appear to a user as though objects associated with the second user interface state (*e.g.*, a menu that is opened in Ahn) “fade in” while objects associated with the first user interface state (*e.g.*, Ahn’s clock widget) “fade out.” *See* EX1005, [0079], [0087]; EX1003, [214]. Furthermore, Chaudhri '842 the transition in optical intensity can be “based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof,” meaning the transition can include multiple simultaneous effects. EX1005, [0085]; EX1003, [214]. Indeed, it was well known to combine blur with other “focus and context” visual cues, including transparency, to help direct a user’s attention to the most relevant information. *See* EX1008, 2 (“The interest level is a combination of blur and transparency, making less interesting layers more blurred and more transparent at the same time”), 4 (blur “can serve as an additional aid to guide the viewer’s

attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1003, [214].

Based on these teachings, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been configured *such that the blur includes decreasing a translucency of a virtual display layer overlaying the at least one other object* (e.g., the virtual display layer containing the menu fading in as the menu is opening), as recited in Claim [67]. EX1003, [215].

(k) Claim 68

The Ahn-Chaudhri combination renders obvious Claim [68]. EX1003, [216]-[220].

As discussed with respect to Claim [67], *supra*, a POSITA would have understood and found obvious that the mobile device of the Ahn-Chaudhri combination would have displayed the various user interface objects as part of virtual layers. *See* EX1003, [0122]-[0124], [217].

Further, as discussed with respect to Claim [58], Chaudhri '842 describes that “the optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface object,” such that the object transitions from “not perceptible to the user” to being “completely materialized visually and [] perceptible to the user.” EX1005, [0085]. In other words, the transition may appear to a user as though objects associated with the second user interface state (*e.g.*, a

menu that is opened in Ahn) “fade in” while objects associated with the first user interface state (e.g., Ahn’s clock widget) “fade out.” *See* EX1005, [0079], [0087]; EX1003, [218]. Furthermore, Chaudhri ’842 the transition in optical intensity can be “based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof,” meaning the transition can include multiple simultaneous effects. EX1005, [0085]; EX1003, [218]. Indeed, it was well known to combine blur with other “focus and context” visual cues, including transparency, to help direct a user’s attention to the most relevant information. *See* EX1008, 2 (“The interest level is a combination of blur and transparency, making less interesting layers more blurred and more transparent at the same time”), 4 (blur “can serve as an additional aid to guide the viewer’s attention, together with brighter colors, etc., or as a completely separate dimension of data display”); EX1003, [218].

Further, As discussed with respect to Element [2.d], *supra*, the word “translucent” means “allowing light, but not detailed images, to pass through; semitransparent.” EX1009, 6. A POSITA would have understood not transmitting detail as a type of blurring, because the word “blur” means to “make or become unclear or less distinct.” EX1009, 3. And since ‘translucent’ is synonymous with ‘semitransparent’, it is axiomatic that increasing blur decreases transparency. EX1003, [219].

Based on these teachings, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the blur includes decreasing a transparency of a virtual display layer overlaying the at least one other object (e.g., the virtual display layer containing the menu fading in as the menu is opening)*, as recited in Claim [68]. EX1003, [220].

(l) **Claim 69**

The Ahn-Chaudhri combination renders obvious Claim [69]. EX1003, [221]-[226].

As discussed with respect to Claim [67], *supra*, a POSITA would have at least found it obvious that the mobile device of the Ahn-Chaudhri combination would have displayed the various user interface objects as part of virtual layers. *See* EX1003, [0122]-[0124], [222].

Further, Chaudhri '842 teaches “[c]ontrolling the optical intensity may include increasing or decreasing the optical intensity of a graphical object” and “the increase or decrease may follow predefined functions,” such that a POSITA would have at least found it obvious to vary the optical intensity (*e.g.*, the blur) of the standby screen 300 or at least the clock widget portion thereof such that a magnitude of the blurring is progressively increased as a continuous function of an increase in the change in the magnitude of the gesture being detected on the touch screen. EX1005, FIGS. 8A-8C, [0042], [0095]; EX1003, [166]-[168]. For at least similar

reasons, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination *is configured such that a magnitude of the blurring is continuously increased as a function of a continuous increase in the change in the magnitude of the gesture being detected on the touch screen*, as recited in Claim [69]. EX1003, [223].

As shown in FIGS. 4B, 10, and 13b, once the touch and drag gesture fully opens a corresponding menu, at least the clock widget portion of the standby screen 300 is both blurred and is obscured by the open menu. EX1003, [224].

FIG. 3A

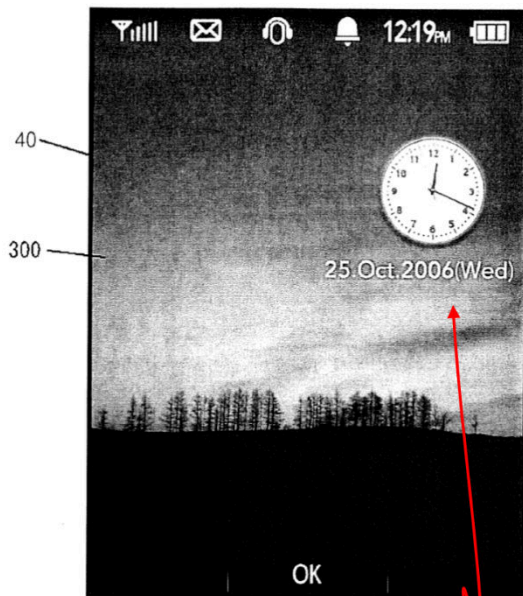
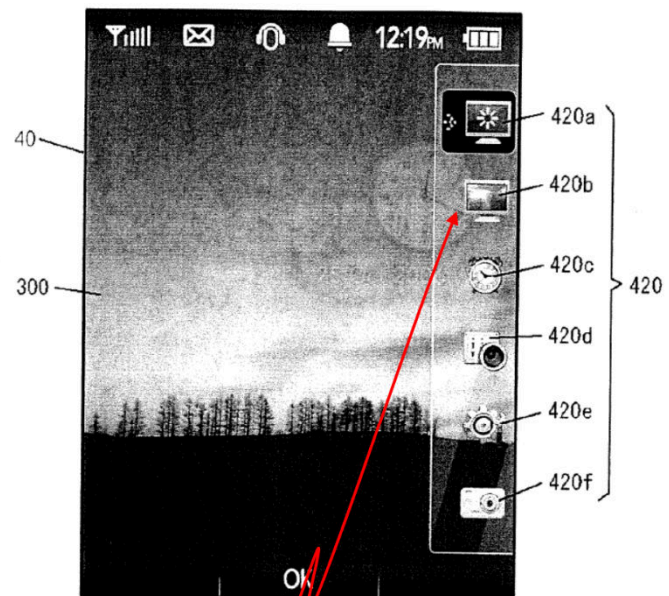


FIG. 4B



**Clock widget blurred and obscured
when user menu 420 is opened**

EX1004, FIGS. 3A and 4B (annotated)

Though the menu in FIG. 4B shows only a portion of the clock widget is obscured, other of the menus taught in Ahn are larger (*e.g.*, the basic setting menu list 720) and take up a larger portion of the display, so a POSITA would have understood and found obvious that, in some implementations, the menu associated with the left direction would be larger to accommodate a larger list of menu items (*e.g.*, menu 720), which would overlap the entire clock widget. *See* EX1004, FIG. 7B; EX1003, [225]. Furthermore, Ahn describes that “menus displayed on the standby screen 300 can be embodied in a translucent form or an opaque form, depending on implementation.” EX1004, [0070]. Thus, in an implementation where the menu associated with the left direction would have been made larger to accommodate a larger list of menu items (*e.g.*, menu 720) and embodied in an opaque form, a POSITA would have understood and found obvious that the entire menu would obscure the entire clock widget. EX1003, [225].

Based on these teachings, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been configured such that the blurring is continuously increased *until a predetermined amount of an interface including the at least one other object is completely obscured by an overlaying virtual display layer*, as recited in Claim 69. EX1003, [226].

(m) **Claim 70**

The Ahn-Chaudhri combination renders obvious Claim [70]. EX1003, [227]-[232].

As discussed with respect to Claim [67], *supra*, a POSITA would have at least found it obvious that the mobile device of the Ahn-Chaudhri combination would have displayed the various user interface objects as part of virtual layers. EX1003, [228].

Further, Chaudhri '842 teaches “[c]ontrolling the optical intensity may include increasing or decreasing the optical intensity of a graphical object” and “the increase or decrease may follow predefined functions,” such that a POSITA would have at least found it obvious to vary the optical intensity (*e.g.*, the blur) of the standby screen 300 or at least the clock widget portion thereof such that a magnitude of the blurring is progressively increased as a continuous function of an increase in the change in the magnitude of the gesture being detected on the touch screen. EX1005, FIGS. 8A-8C, [0042], [0095]; EX1003, [166]-[168]. For at least similar reasons, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination *is configured such that a magnitude of the blurring is continuously increased in a first virtual display layer* (*e.g.*, a virtual display layer with the clock widget) *as a function of a continuous increase in the change in the*

magnitude of the gesture being detected on the touch screen, as recited in Claim [70]. EX1003, [229].

As shown in FIGS. 4B, 10, and 13b, once the touch and drag gesture fully opens a corresponding menu, at least the clock widget portion of the standby screen 300 is both blurred and is obscured by the open menu. EX1003, [231].

FIG. 3A

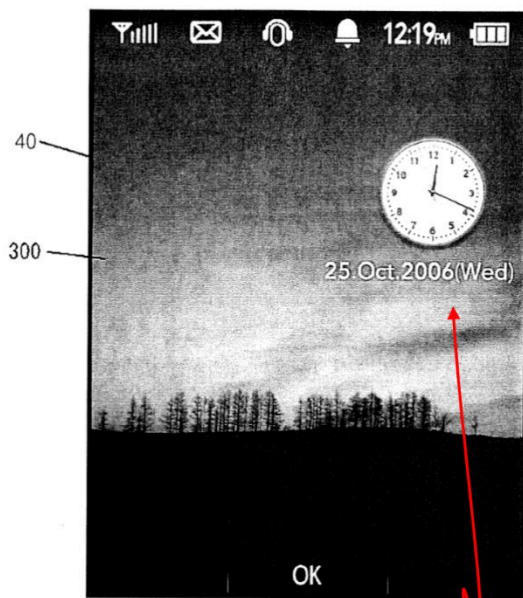
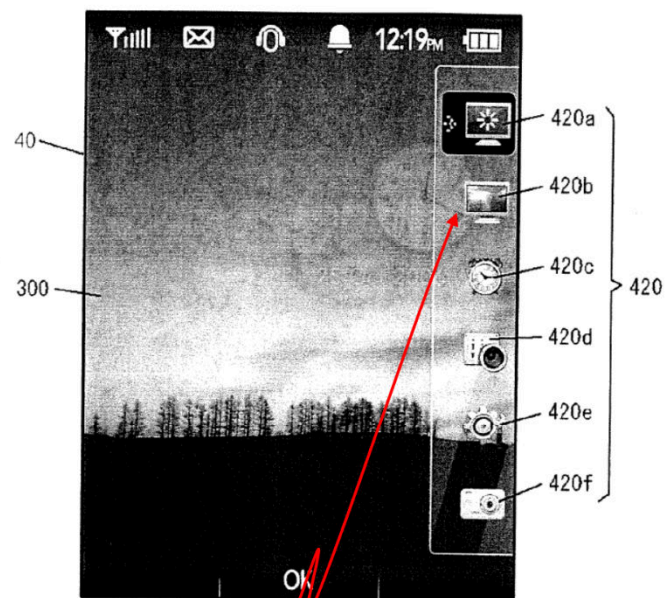


FIG. 4B



**Clock widget blurred and obscured
when user menu 420 is opened**

EX1004, FIGS. 3A and 4B (annotated)

Based on these teachings, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been configured such that

the blurring is continuously increased *until a predetermined amount of an interface including the at least one other object is obscured by an overlaying second virtual display layer* (e.g., a virtual display layer including the menu), as recited in Claim 70. EX1003, [232].

(n) **Claim 71**

The Ahn-Chaudhri combination renders obvious Claim [71]. EX1003, [233]-[239].

As discussed with respect to Claim [67], *supra*, in order to display the menus “on” the standby screen 300 using “window forms,” as taught by Ahn, a POSITA would have understood and found obvious that the menu window would be displayed in a “virtual display layer,” as that term is broadly used in the ’754 Patent, and that the virtual display layer containing the menu is displayed “on” one or more virtual display layers that contain(s) the various elements of standby screen 300. *See* EX1004, FIGS. 3A, 4B, [0064], [0070]. As shown in FIG. 4A, the virtual display layer containing the menu “appears above” the layer containing the standby screen 300, which we can tell because the standby screen 300 is blurred, indicating it is ‘below’ and ‘further away’ than the menu layer. EX1004, FIG. 4A; EX1003, [149]. Accordingly, it would have been obvious in the Ahn-Chaudhri combination that the at least one other object is displayed via a first virtual display layer. EX1003, [234].

As further discussed with respect to Claim [67], Chaudhri '842 describes that “the optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface object,” such that the object transitions from “not perceptible to the user” to being “completely materialized visually and [] perceptible to the user.” EX1005, [0085]. In other words, the transition may appear to a user as though objects associated with the second user interface state (*e.g.*, a menu that is opened in Ahn) “fade in” while objects associated with the first user interface state (*e.g.*, Ahn’s clock widget) “fade out.” *See* EX1005, [0079], [0087]; EX1003, [214], [235]. A POSITA would have understood that a “fade in” of the menu alone would have achieved an effect sufficiently similar to the blurring shown in Ahn’s FIG. 4A and meeting the benefits taught by Chaudhri '842. EX1003, [236]. This is because as the menu “fades in” due to its translucency decreasing, the underlying layer would blur directly in proportion to the decrease in translucency in the menu. Indeed, a POSITA would have similarly found it obvious to apply optical intensity changes to either or both layers to achieve the goals set forth in Chaudhri '842. EX1003, [236]-[237].

Chaudhri '842 provides “graphs illustrating optical intensity as a function of the completion of the user input condition.” EX1005, FIGS. 8A-8C, [0095]; EX1003, [166]-[168]. Applied in the context of Ahn’s transition between a user interface state where the standby screen is displayed (*see, e.g.*, EX1004, FIG. 13a)

and a user interface state where a menu list 1300 is displayed above or on top of the standby screen (*see, e.g.*, EX1004, FIG. 4B, 10, and 13b), a POSITA would have at least found it obvious to continuously vary the optical intensity (*e.g.*, the translucency) of the standby of the standby screen 300 or at least the clock widget portion thereof, as well as the menu that's being dragged onto the display, in order to achieve the above-described "fade in" and "fade out" effect described in Chaudhri '842. EX1003, [238].

Based at least on these teachings, a POSITA would have found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that the at least one other object* (*e.g.*, the clock widget) *is blurred by continuously decreasing a magnitude of a translucency of a virtual display layer overlaying the at least one other object* (*e.g.*, a "fade-in" of the virtual display layer containing the menu that is being opened) *as a continuous function of an increase in the change in the magnitude of the gesture being detected on the touch screen* (*e.g.*, the continuous functions taught in Chaudhri '842's FIGS. 8A-8C), as recited in Claim [71]. EX1003, [239].

(o) **Claim 72**

The Ahn-Chaudhri combination renders obvious Claim [72]. EX1003, [240]-[242].

As discussed with respect to Claim [67], *supra*, a POSITA would have at least found it obvious that the mobile device of the Ahn-Chaudhri combination would have displayed the various user interface objects (*e.g.*, menus) as part of “virtual display layers,” as that term is used in the ’754 Patent. *See* EX1003, [0122]-[0124], [241].

Further, with respect to FIG. 18, Ahn describes that the display 40 may utilize “a graphical display for notifying a start position of a touch and drag operation to a user,” and illustrates “a graphical shadow 1800” displayed at an edge of the display. *See* EX1004, [0118]-[0119]; EX1003, [242]. Ahn explains that “as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.” EX1004, EX1004, [0118]. Based on these teachings, a POSITA would have understood and found obvious from these teachings that, in at least implementations like those described with respect to FIG. 18, the menu list 1500 is displayed such *that the virtual display layer* (*e.g.*, the virtual display layer that includes the “dragged” menu) *moves to appear like a window shade*, as recited in [72]. EX1003, [242].

(p) **Claim 73**

Claim [73] is substantially the same as Claim [71]. EX1003, [243]. Ahn teaches that menus can be implemented with either “translucent” or “transparent” graphic effects, demonstrating that its mobile terminal supports both and they are

interchangable. *See* EX1004, [0070]; EX1003, [234]. Thus, the Ahn-Chaudhri combination renders obvious Claim [73] for at least the same reasons described above with respect to Claim [71]. *See* Claim [71], *supra*; EX1003, [243].

(q) Claim 74

Claim [74] is substantially the same as Claim [72]. EX1003, [244]. Thus, the Ahn-Chaudhri combination renders obvious Claim [74] for at least the same reasons described above with respect to Claim [72]. *See* Claim [72], *supra*; EX1003, [244].

(r) Claim 75

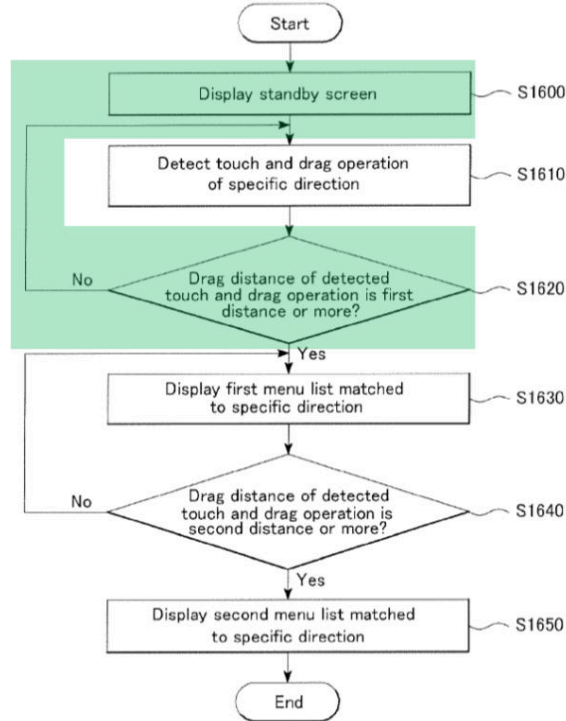
The Ahn-Chaudhri combination renders obvious Claim [75]. EX1003, [245]-[248].

A POSITA would have understood and found obvious that selecting the “message notification icon 330b” and/or “background music setting icon 330c” displayed in Ahn’s indicator area 320 of the standby screen 300 would have launched an application associated with that functionality. *See* EX1005, [0037], [0044]; *see* EX1003, [104]-[107]. Additionally, Chaudhri ’842 describes that menus such as the indicator area 320 need not be confined to the top of the screen as illustrated in Ahn, but can be incorporated into the main screen of the user interface as a plurality of icons. *See* EX1005, FIG. 5D, [0076]; EX1003, [108]. Accordingly, a POSITA would have at least found it obvious that one or more of the icons displayed as part of indicator area 320 or standby screen 300 could be displayed as organized throughout the

standby screen 300 like the menu of icons shown in FIG. 5D of Chaudhri '842. EX1003, [108], [246].

Further, with respect to the embodiment of FIG. 16, Ahn describes that “controller 50 determines whether a drag distance of the detected touch and drag operation is a first distance or more (S1620),” and only “[i]f a drag distance of the detected touch and drag operation is a first distance or more, the controller 50 controls to display a first menu list matched to the specific direction (S1630).” EX1004, [0109]. In FIG. 16 (reproduced below), when a distance magnitude of the touch and drag gesture has not yet reached the threshold of the “first distance or more,” the standby screen 300 (*e.g.*, including a menu of icons shown in FIG. 5D of Chaudhri '842, as discussed above) remains displayed. *See* EX1004, [0107]-[0109]; EX1003, [247].

FIG. 16



EX1004, FIG. 16 (highlighted)

Based on these teachings, a POSITA would have at least found it obvious that the device of the Ahn-Chaudhri combination would have been *configured such that, when the magnitude, including the distance magnitude, of the gesture detected on the touch screen is detected to not increase above the distance threshold, a home screen for choosing among a plurality of applications is displayed*, as recited in Claim 75. EX1003, [248].

(s) Claim 76

Claim [76] is substantially the same as Claim [75]. EX1003, [249]. Thus, the Ahn-Chaudhri combination renders obvious Claim [76] for at least the same reasons described above with respect to Claim [75]. *See* Claims [75], *supra*; EX1003, [249].

(t) Claim 77

Claim [77] is substantially the same as Claim [75]. EX1003, [250]. Thus, the Ahn-Chaudhri combination renders obvious Claim [77] for at least the same reasons described above with respect to Claim [75]. *See* Claims [75], *supra*; EX1003, [250].

(u) Claim 78

[78.a]

Element [78.a] is substantially the same as Claim [27]. EX1003, [251]. Thus, the Ahn-Chaudhri combination renders obvious Element [78.a] for at least the same reasons described above with respect to Claim [27]. *See* Claims [27], *supra*; EX1003, [251].

[78.b]

Element [78.b] is substantially the same as Claim [75]. EX1003, [252]. Thus, the Ahn-Chaudhri combination renders obvious Element [78.b] for at least the same reasons described above with respect to Claim [75]. *See* Claims [75], *supra*; EX1003, [252].

(v) Claim 79

[79.a]

Element [79.a] is substantially the same as Claim [27]. EX1003, [253]. Thus, the Ahn-Chaudhri combination renders obvious Element [79.a] for at least the same reasons described above with respect to Claim [27]. *See* Claims [27], *supra*; EX1003, [2532].

[79.b]

Element [79.b] is substantially the same as Claim [75]. EX1003, [254]. Thus, the Ahn-Chaudhri combination renders obvious Element [79.b] for at least the same reasons described above with respect to Claim [75]. *See* Claims [75], *supra*; EX1003, [254].

(w) Claim 223

Claim [223] is substantially the same as at least a portion of Claim [58]. EX1003, [255]. Thus, the Ahn-Chaudhri combination renders obvious Claim [223] for at least the same reasons described above with respect to Claim [58]. *See* Claims [58], *supra*; EX1003, [255].

VII. ANALYSIS ON DISCRETION

A. 35 U.S.C. §325(d)—*Advanced Bionics*

The *Advanced Bionics* framework strongly favors institution. Ahn (EX1004) was never cited in the hundreds of references disclosed by the Applicant in Information Disclosure Statements and/or cited by the Examiner in various Office Actions. Nor did either the Applicant or Examiner explicitly discuss or consider the

combination of Ahn and Chaudhri '842 with respect to the claim limitations highlighted by the Examiner has leading to the allowance of the issued claims. Thus, neither condition of Part One in the *Advanced Bionics* two-part framework is met.

Further, while there is no need to reach Part Two of the *Advanced Bionics* framework, the record shows that the Challenged Claims were allowed based on a material error by the Examiner. For example, Ahn describes blurring in at least two ways: (1) through its translucent menus; and (2) illustrating that the clock widget portion of the standby screen is blurred when a menu is opened. *See* Section VI.A.1, *supra*. Moreover, Chaudhri '842 (EX1005) explicitly describes the use of “color, hue, color saturation, brightness, contrast, transparency, and any combination thereof” to differentiate between a user interface object and the background, particularly to indicate progress in the context of transitioning between user interface states. *See* Section VI.A.2, *supra*. Taken in the context of and in combination with Ahn’s menu display transition, a POSITA would have understood that the features that led to allowance of issued independent claims 1, 2, and 225 were well known prior to the Critical Date.

Had the Examiner properly assessed the Ahn and Chaudhri '842 disclosures and appreciated their teachings in view of the prior art as a whole, the Challenged Claims would not have issued. *See* Section VI, *supra*.

B. 35 U.S.C. §314(a)—*Fintiv*

Institution should not be discretionarily denied under §314(a) because no *Fintiv* factor favors denial. Rather, five of the six factors enumerated in *Apple Inc. v. Finitv, Inc.* weigh against discretionary denial, and the remaining factor is neutral. IPR2020-00019, Paper 11 at 2-3 (PTAB “precedential” Mar. 20, 2020).

Factor 1 weighs against discretionary denial. Apple intends to file a motion to stay the parallel litigation. Thus, factor 1 does not favor discretionary denial and, at worst, is neutral.

Factor 2 weighs against discretionary denial. Director Vidal’s Guidance instructed the Board that “when considering the proximity of the district court’s trial date to the date when the PTAB final written decision will be due, the PTAB will consider the median time from filing to disposition of the civil trial for the district in which the parallel litigation resides.” EX1021, pp. 3, 8. According to the latest published district court statistics, the median time to trial in the Southern District of California (SDCal) is 40.2 months, predicting a trial in November 2027—significantly later than a Final Written Decision would be issued in this case. EX1020, p. 69; EX1021, p. 8 (“A court’s scheduled trial date, therefore, is not by itself a good indicator of whether the district court trial will occur before the statutory deadline for a final written decision.”). For this reason alone, Factor 2 weighs against discretionary denial. Though a pre-trial conference of October 23,

2025 has been scheduled in the co-pending litigation, no trial date has been set, and it is uncertain whether the schedule will stick, particularly if Apple's motion to stay is granted. EX1022, p. 6.

Factor 3 also weighs against discretionary denial because Petitioner has diligently filed this Petition while the co-pending litigation is still in its early stages. Petitioner filed as soon as practicable following Patent Owner Smith's election of 200 asserted claims from over 1,000 claims in the asserted patents just weeks before this filing. Beyond serving preliminary infringement contentions, the parties and the District Court have yet to expend significant resources. No invalidity contentions have been served, and discovery is in its infancy.

Factor 4 weighs against discretionary denial. As noted above, no trial date has been scheduled. And even using the pre-trial conference date of October 2025 as a reference point, if Apple's to-be-filed motion to stay is granted, the case schedule is going to change and any trial will be further delayed. Accordingly, it is likely that a final written decision will be issued before trial. Indeed, no stipulation has been offered given the lack of a trial date, and it otherwise remains too early to assess the suitability of a stipulation with invalidity contentions still not exchanged.

Factor 5 The parties in the parallel co-pending litigation are the same.

Factor 6 favors institution because the merits of this Petition are compelling, as described in this Petition.

VIII. PAYMENT OF FEES—37 C.F.R. § 42.103

Petitioner authorizes the Patent and Trademark Office to charge any fees to Deposit Account No. 06-1050.

IX. MANDATORY NOTICES—37 C.F.R §42.8(a)(1)

A. Real Party-In-Interest—37 C.F.R. § 42.8(b)(1)

Apple Inc. is the petitioner and the real party-in-interest.

B. Related Matters—37 C.F.R. § 42.8(b)(2)

Petitioner is not aware of any disclaimers, reexamination certificates, or petitions for *inter partes* review for the '754 Patent. The '754 patent is the subject of a number of civil actions including: *Smith Interface Technologies, LLC v. Samsung Electronics Co., Ltd. et al.*, 2-22-cv-00290 (EDTX) (terminated), and *Smith Interface Technologies, LLC v. Apple Inc.*, 3-23-cv-01187 (SDCA) (pending).

C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at IPR50095-0166IP3@fr.com.

Respectfully submitted,

Dated: June 28, 2024

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter Partes* Review totals 13,972 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: June 28, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on June 28, 2024, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided via USPS Priority Express Mail, to the Patent Owner by serving the correspondence address of record as follows:

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