

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENOVO (UNITED STATES) INC.,
Petitioner

v.

TELEFONAKTIEBOLAGET LM ERICSSON,
Patent Owner

Patent No. 10,972,654 B2

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,972,654 B2**

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LISTING OF EXHIBITS¹

Exhibit No.	Description
1001	U.S. Patent No. 10,972,654 B2.
1002	Declaration of Chandrajit Bajaj, Ph.D.
1003	Prosecution History of U.S. Patent No. 10,972,654 B2.
1004	Korea Patent Application Publication No. 10-2010-0027689 to Park, published on March 11, 2010 (“ <i>Park</i> ”).
1005	Certified Translation of Korea Patent Application Publication No. 10-2010-0027689 to Park.
1006	Reserved.
1007	United States Patent Application Publication No. 2009/0015703 to Kim, published January 15, 2009 (“ <i>Kim</i> ”).

¹ Citations to EX1001 are to column:line number of the patent. Citations to EX1002, EX1004-1007, and EX1020 are to paragraph numbers. Citations to EX1003, EX1008-1018, and EX1019 are to the page numbers of the exhibit.

Exhibit No.	Description
1008	<i>Operating Instructions: Digital Camera/Lens Kit/Double Zoom Lens Kit/Body Model No. DMC-G2K/DMC-G2W DMC-G2</i> , PANASONIC, published no later than July 29, 2010 (“Panasonic”).
1009	RUDOLF F. GRAF, MODERN DICTIONARY OF ELECTRONICS, 151 (Elsevier Science, 7th ed. 1999).
1010	<i>Lumix DMC-G2, World’s First* Interchangeable Lens System Camera with Touch-Control Movable LCD</i> , IMAGING RESOURCE, https://www.imaging-resource.com/PRODS/DMCG2/DMCG2PR.HTM , archived at https://web.archive.org/web/20100314192500/https://www.imaging-resource.com/PRODS/DMCG2/DMCG2PR.HTM#expand (archived March 14, 2010; last accessed August 19, 2024).
1011	<i>Panasonic Lumix DMC-G2 12.1 MP Live MOS Interchangeable Lens Camera with 3-Inch Touch Screen LCD and 14-42mm Lumix G VARIO f/3.5-5.6 MEGA OIS Lens (Black)</i> , AMAZON.COM, http://www.amazon.com/Panasonic-Mirrorless-Digital-14-42mm-3-5-6/dp/B003AOAXL4 , archived at https://web.archive.org/web/20100310213715/http://www.amazon.com/Panasonic-DMC-G2-Interchangeable-14-42mm-3-5-5-6/dp/B003AOAXL4 (archived March 10, 2010; last accessed September 3, 2024).
1012	<i>Panasonic Lumix DMC-G2 12.1 MP Live MOS Interchangeable Lens Camera with 3-Inch Touch Screen LCD and 14-42mm Lumix G VARIO f/3.5-5.6 MEGA OIS Lens (Black)</i> , AMAZON.COM, http://www.amazon.com/Panasonic-DMC-G2-Interchangeable-14-42mm-3-5-5-6/dp/B003AOAXL4 , archived at https://web.archive.org/web/20100529160017/http://www.amazon.com/Panasonic-DMC-G2-Interchangeable-14-42mm-3-5-5-6/dp/B003AOAXL4

Exhibit No.	Description
	6/dp/B003AOAXL4 (archived May 29, 2010; last accessed September 3, 2024).
1013	<i>Panasonic Lumix DMC-G2 12.1 MP Live MOS Interchangeable Lens Camera with 3-Inch Touch Screen LCD and 14-42mm Lumix G VARIO f/3.5-5.6 MEGA OIS Lens (Black)</i> , AMAZON.COM, http://www.amazon.com/Panasonic-Mirrorless-Digital-14-42mm-3-5-6/dp/B003AOAXL4 , archived at https://web.archive.org/web/20100622061830/http://www.amazon.com/Panasonic-DMC-G2-Interchangeable-14-42mm-3-5-5-6/dp/B003AOAXL4 (archived June 22, 2010; last accessed September 3, 2024).
1014	<i>Shop and Compare: DMC-G2K</i> , PANASONIC, http://www2.panasonic.com/consumer-electronics/shop/Cameras-Camcorders/Digital-Cameras/2010-LUMIX-Digital-Cameras/model.DMC-G2K_11002_7000000000000005702 , archived at https://web.archive.org/web/20100722010439/http://www2.panasonic.com/consumer-electronics/shop/Cameras-Camcorders/Digital-Cameras/2010-LUMIX-Digital-Cameras/model.DMC-G2K_11002_7000000000000005702 (archived July 22, 2010; last accessed September 4, 2024).
1015	<i>Panasonic Lumix DMC-G2: Overview</i> , IMAGING RESOURCE, https://www.imaging-resource.com/PRODS/DMCG2/DMCG2A.HTM , archived at https://web.archive.org/web/20100423112645/https://www.imaging-resource.com/PRODS/DMCG2/DMCG2A.HTM (archived April 23, 2010; last accessed September 3, 2024).
1016	<i>DMC-G2K: Lumix Digital Cameras</i> , PANASONIC, http://www2.panasonic.com/consumer-electronics/support/Cameras-Camcorders/Digital-Cameras/Lumix-Digital-Cameras/model.DMC-

Exhibit No.	Description
	G2K, <i>archived at</i> http://web.archive.org/web/20100729014645/http://www2.panasonic.com:80/consumer-electronics/support/Cameras-Camcorders/Digital-Cameras/Lumix-Digital-Cameras/model.DMC-G2K (archived July 29, 2010; last accessed September 3, 2024).
1017	David Chin, <i>Panasonic G2 Manual / Operating Instructions – PDF Available For Download</i> , DIGITAL PHOTOGRAPHY NOTES (posted July 10, 2010), http://www.dpnotes.com/panasonic-g2-manual-operating-instructions , <i>archived at</i> http://web.archive.org/web/20100722104315/http://www.dpnotes.com/#expand (archived July 23, 2010; last accessed September 4, 2024).
1018	<i>Panasonic Lumix DMC-G2: Overview</i> , IMAGING RESOURCE, https://www.imaging-resource.com/PRODS/DMCG2/DMCG2A.HTM , <i>archived at</i> https://web.archive.org/web/20110224033435/https://www.imaging-resource.com/PRODS/DMCG2/DMCG2A.HTM (archived February 23, 2011; last accessed October 9, 2024).
1019	Prosecution History of U.S. Patent No. 9,888,168 B2.
1020	Declaration of Sima Lotfi.
1021	Affidavit of Nathaniel E Frank-White.
1022	In the Matter of Certain Electronic Devices, Including Mobile Phones, Tablets, Laptops, Components Thereof, and Products Containing the Same, USITC Investigation No. 337-TA-1376, Doc. ID 830032, Evidentiary Hearing Transcript (Pages 1-350) (with excerpts) (August 19, 2024) (Preliminary).

Exhibit No.	Description
1023	In the Matter of Certain Electronic Devices, Including Mobile Phones, Tablets, Laptops, Components Thereof, and Products Containing the Same, USITC Investigation No. 337-TA-1376, Doc. ID 830290, Evidentiary Hearing Transcript (Pages 649-928) (with excerpts) (August 21, 2024) (Preliminary).

CHALLENGED CLAIMS

Claim 1	
Preamble	A mobile terminal comprising:
1a	a camera;
1b	a touch screen; and
1c	a controller configured to:
1d	control the touch screen to display preview images received via the camera;
1e	control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;
1f	focus the preview images based on a location of the auto focus guide;
1g	determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;
1h	control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and
1i	capture an image according to the current image capturing setting.
Claim 3	
3	The mobile terminal of claim 1, wherein: the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

Claim 9	
9	The mobile terminal of claim 1, wherein: the first direction and the second direction are opposite directions along the touch screen.
Claim 10	
10	The mobile terminal of claim 1, wherein the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.
Claim 15	
15	The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.
Claim 16	
16	The mobile terminal of claim 15, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

I. INTRODUCTION

Lenovo (United States) Inc. (“Petitioner”, “Lenovo US”) requests *inter partes* review of claims 1, 3, 9, 10, 15, and 16 (“the challenged claims”) of U.S. Patent No. 10,972,654 (“the ’654 patent”) (EX1001), assigned to Telefonaktiebolaget LM Ericsson AB (“Patent Owner”). As explained below, the challenged claims should be found unpatentable and cancelled.

II. MANDATORY NOTICES

Real Party-in-Interest: The real party-in-interest for this Petition is the Petitioner. Solely because they are named as defendants in the co-pending district court case listed below, Petitioner further identifies as real parties-in-interest Lenovo (Shanghai) Electronics Technology Co. Ltd. (“Lenovo Shanghai”); Lenovo Beijing, Ltd. (“Lenovo Beijing”); Lenovo Group, Ltd. (“LGL”); Motorola (Wuhan) Mobility Technologies Communication Co., Ltd. (“Motorola Wuhan”); and Motorola Mobility, LLC (“Motorola”).

Related Matters: PO has asserted the ’654 patent against Petitioner, Lenovo Shanghai, Lenovo Beijing, LGL, Motorola Wuhan, and Motorola (“Defendants”) in *Telefonaktiebolaget LM Ericsson, et al. v. Lenovo (United States), Inc., et al.*, Civil Action No. 5:23-cv-570 in the Eastern District of North Carolina, Western Division. PO has also asserted the ’654 patent against Defendants in *In the Matter of Certain Electronic Devices, Including Mobile Phones, Tablets, Laptops*,

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Components Thereof, and Products Containing the Same, Investigation No. 337-TA-1376 of the U.S. International Trade Commission.

Counsel and Service Information: Lead counsel is Dinesh N. Melwani (Reg. No. 60,670), and backup counsel are Jameson Q. Ma (Reg. No. 68,343) and Sima Lotfi (Reg. No. 81,348). Service information is: Bookoff McAndrews, PLLC, 2000 Pennsylvania Ave NW, Suite 4001, Washington, D.C. 20006; Tel.: 202-808-3497; Fax.: 202-450-5538; Email: docketing@bomcip.com, dmelwani@bomcip.com, jma@bomcip.com, and slotfi@bomcip.com. Petitioner consents to electronic service.

III. PAYMENT OF FEES

The PTO is authorized to charge any fees due to Deposit Account No. 50-5906.

IV. GROUNDS FOR STANDING

Petitioner certifies that the '654 patent is available for review and Petitioner is not barred/estopped from requesting review on these grounds. 37 C.F.R. § 42.104(a).

V. PRECISE RELIEF REQUESTED AND GROUNDS

A. Identification of Challenge

Petitioner requests IPR and cancellation of the challenged claims. Petitioner assumes the priority date of the challenged claims is October 11, 2010, with June

30, 2011, being the effective date of application in the United States for the purposes of 35 U.S.C. § 102.

The challenged claims should be cancelled as unpatentable based on at least the following grounds.²

Ground 1	Section 103(a) as obvious over <i>Park</i> in view of <i>Kim</i> .
Ground 2	Section 102 as anticipated by <i>Panasonic</i> , or alternatively under Section 103(a) as obvious over <i>Panasonic</i> .
Ground 3	Section 103(a) as obvious over <i>Kim</i> in view of <i>Panasonic</i> .

Park published on March 11, 2010. EX1005, 2. *Kim* published on January 15, 2009. See EX1007, 1. Thus, *Park* and *Kim* are each prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b). *Panasonic* was published prior to October 11, 2010 and is prior art at least under pre-AIA 35 U.S.C. § 102(a). See generally EX1020.

² For each Ground, Petitioner does not rely on any reference other than those listed here. Other references are discussed to show the state of the art at the time of the invention. See *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015).

VI. LEVEL OF ORDINARY SKILL

A person of ordinary skill (“POSITA”) as of the claimed priority date of the ’654 patent would have had a bachelor’s degree in computer science, computer engineering, or a related field, and 2-3 years of experience in designing, researching, or developing graphic UIs. EX1002, ¶¶ 24-28. Additional education would compensate for less experience, and vice versa. *Id.*

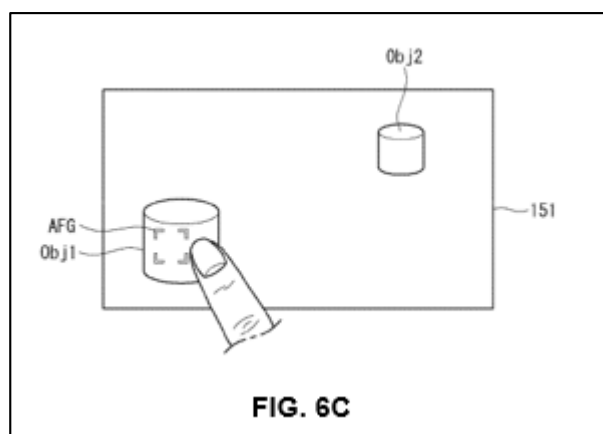
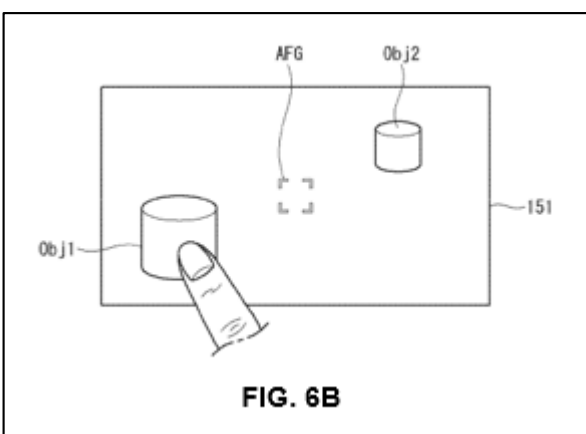
VII. THE ’654 PATENT AND PRIOR ART

A. Technical Summary of the ’654 Patent

The ’654 patent would have been understood by a POSITA at least within the context of the state of the art in October 2010. EX1002, ¶¶ 29-31. The ’654 patent describes a mobile terminal with a camera and touchscreen, and methods of using the same to “conveniently and effectively photograph a desired image.” EX1001, 1:63-67; EX1002, ¶32. The ’654 patent states “terminals can be divided into mobile terminals and stationary terminals according to their motility,” and “[m]obile terminals can also be divided into handheld terminals and vehicle mount terminals depending on how they are carried while moving.” EX1001, 1:43-47. Examples of mobile terminals may include “mobile phones, smart phones, notebooks [*sic*] computers, terminals for digital broadcast, personal digital assistants (PDA), portable multimedia players (PMP), and navigators.” EX1001, 4:3-7; EX1002, ¶32. The ’654 patent explains that UIs for conveniently operating mobile terminals had been developed. EX1001, 1:48-59. The ’654 patent is

directed to one such function: using a camera touchscreen UI to adjust the focus of an image based on a user's touch input. *Id.*, 1:63-67.

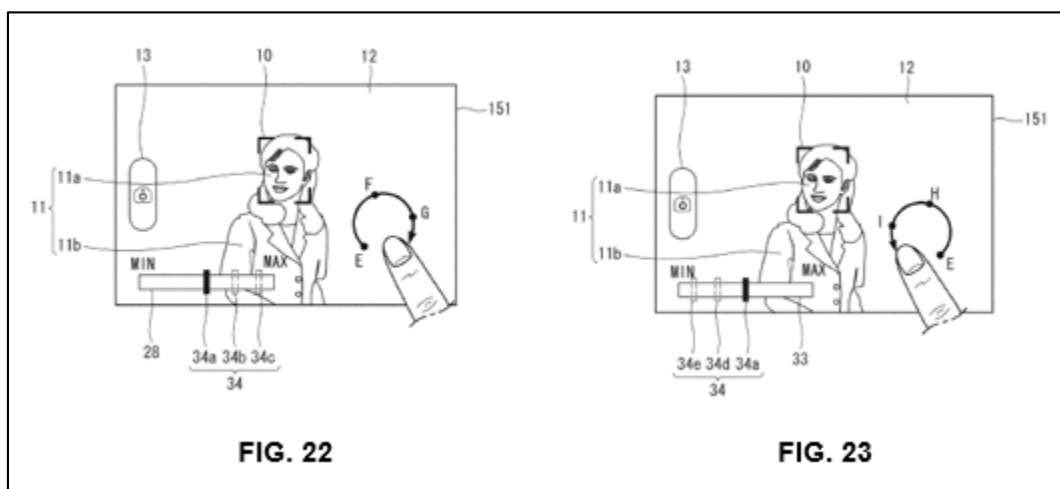
The '654 patent discloses a UI where the user adjusts the focus of a preview image displayed on the touchscreen by moving an "an auto focus guide (AFG), indicating a position on which focusing will be performed or a focus window for an image to be captured" to different locations by touching a specific point on the touchscreen. EX1001, 13:6-13; EX1002, ¶33. Figures 6B-6C of the '654 patent, below, show a mobile terminal where the AFG is initially displayed at the center of a preview image on the touch screen, and then moved, by a controller of the mobile terminal, to a point on the preview image in response to a user touching the screen at the point. EX1001, 13:20-23; EX1002, ¶¶34-35. The '654 patent discloses that the controller focuses the preview image based on the position of the AFG. EX1001, 18:42-47; EX1002, ¶36.



The '654 patent discloses that the user can further adjust the focus of the image using a predetermined drag gesture, such as a circular or linear touch trace,

to adjust the position of the camera lens and hence the focus of the image. EX1001, 18:48-57, 19:10-29, FIGS. 17, 18, 20, 21; EX1002, ¶¶36-37. While the '654 patent discusses settings other than focus, such as brightness, it does not disclose adjusting these settings using a drag gesture. EX1001 at 18:12-15, Fig. 15. Rather, such settings are disclosed as adjustable using a touchscreen menu. *Id.*

The '654 patent discloses certain exemplary embodiments in which the controller “may” optionally “display an indicator” for “indicating a degree to which the lens position is adjusted.” EX1001, 19:51-53; EX1002, ¶38. While the AFG is depicted in Figures 22 and 23, neither indicates what, if anything happens to the guide during focus adjustment, nor do the corresponding passages in the specification, which do not mention the AFG at all. EX1001, 19:51-20:19.



The specification indicates that the descriptions of these figures are “not limited to the forms shown” and “the technical spirit of this document is not limited” to the description of any particular embodiment. EX1001, 19:6-7, 20:4-7,

19:47-50, 24:6-12. At most, Figures 22-23 show that a setting determined using a touch trace is indicated on the screen, at one point in time, while the AFG is displayed.

B. Prosecution Summary of the '654 Patent

The grounds asserted herein rely on prior art references which were not before the examiner during prosecution of the '654 patent.

The '654 patent issued from Application No. 17/024,831, filed on September 18, 2020, which claims the benefit of priority to U.S. Application No. 15/931,006, filed May 13, 2020, now Patent No. 10,819,901, which is a continuation of Application No. 15/888,981, filed February 5, 2018, now Patent No. 10,827,115, which is a continuation of Application No. 14/561,090, filed December 4, 2014, now Patent No. 9,888,168, which is a continuation of Application No. 13/174,549 (“the '549 application”), filed June 30, 2011, now Patent No. 8,913,176 (“the '176 patent”). EX1003, 86-93. The '176 patent is a continuation-in-part of Application No. 12/351,591, filed January 9, 2009, now Patent No. 8,416,306. *Id.*

The challenged claims are supported by disclosure which first appears in the '176 patent, and thus have an effective filing date of June 30, 2011. The '176 patent claims the benefit of earlier filing date and right of priority to Korean Application No. 10-2010-0098558 (“the Korean '558 application”), filed October 11, 2010. EX1003, 3.

During prosecution of the '654 patent, a request for prioritized examination via the USPTO Track One prioritized patent examination program was granted on November 6, 2020. EX1003, 128. During prioritized examination, the challenged claims were solely rejected for nonstatutory double patenting over U.S. Patent No. 10,819,901 B2 and U.S. Patent No. 9,888,168 (the '168 patent), which was overcome with the filing of terminal disclaimers over both reference patents. *Id.*, 129-248. *Kim* was made of record but was not applied by the Examiner. *Id.*, 96.

The challenged claims were allowed as originally-filed. EX1003, 271-79. Claim 1, as filed/issued, recites language first introduced during prosecution of the '168 patent, including “while maintaining the displayed focus guide at the specific point.” EX1019, 590-98. This language was introduced to overcome a rejection under Section 102 raised by the Office based on a reference that disclosed changing the position of an auto-focus guide. EX1019, 562-63. In response, PO explained:

In relying upon Figure 5 of Higashino, the Final Office Action asserts that determining the image capturing setting and “changing the image capturing setting from the determined image capturing setting” is equivalent to setting the AF frame, then the user moving the AF frame to a different location (other than the specific point). (See Final Office Action, pages 3-4: “user traces AF frame to a new location; image capturing setting being the location on the new AF frame.”). However, this fails to teach or suggest changing the image capturing setting from

the determined image capturing setting of the specific point in response to a predetermined touch trace input to the touch screen while maintaining the displayed focus guide at the specific point. Since the Examiner's rejection relies upon repeated user movement of the AF frame in Figure 5, it necessarily involves movement of the displayed AF frame upon each determination of the image capturing setting, and subsequent change of the image capturing setting from the determined image capturing setting. By contrast, claim 21 as amended requires that the displayed focus guide is *maintained at the specific point while the image capturing setting is changed* in response to the touch trace, which is not taught by the reference.

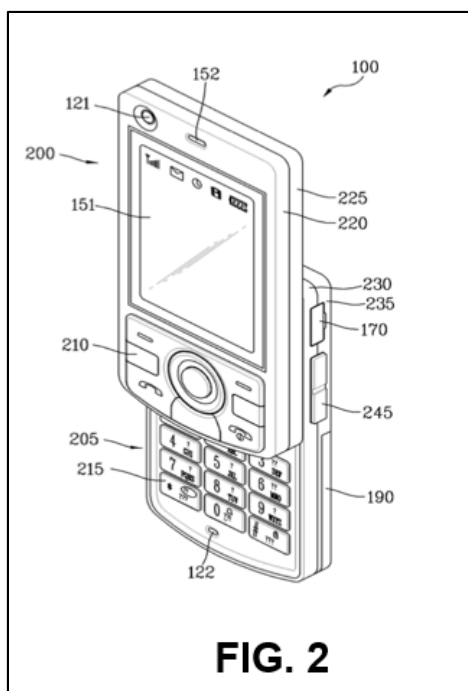
EX1019, 596 (emphasis in original). Subsequently, the claims of the '168 patent issued. See Patent No. 9,888,168, 24:21-26, 25:28-26:5.

C. Prior Art

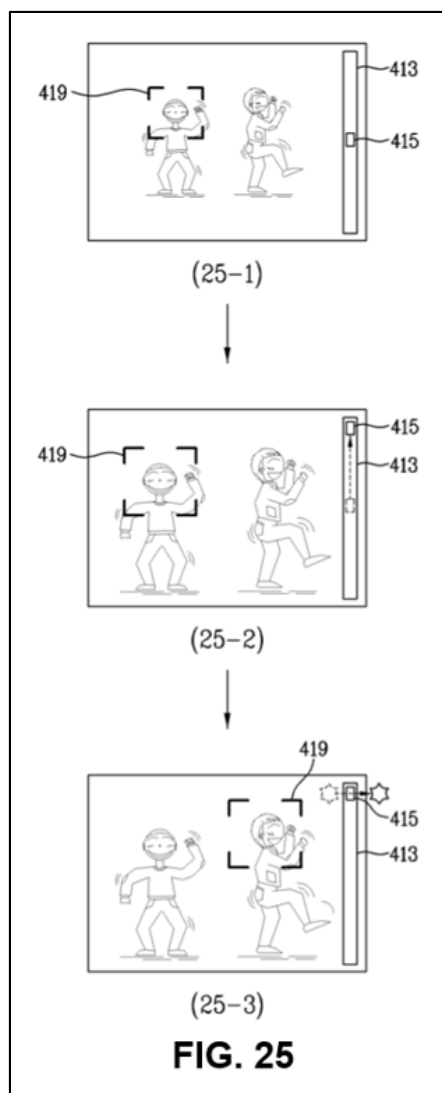
The claims of the '654 patent were well-known at the time of the alleged invention.

1. Park

In FIG. 2, below, *Park* (EX1005) discloses a mobile device. EX1005, ¶[0042].



Park's mobile device has a camera, touch screen, and control unit. EX1005, ¶[0009]; EX1002, ¶¶42-43. In Figure 25, below, *Park* teaches "a preview image for taking a photo is displayed on the touch screen 400," and a "focus region indicator [419] is displayed on the preview image" for "indicating [a] region that is focused when taking a photo via the camera module 121 on the mobile device 100." EX1005, ¶[0228]; EX1002, ¶44.



Park discloses a control unit is “for controlling that the touch screen displays a scroll region extending in a first direction and a scroll bar positioned within the scroll region, wherein the screen is enlarged or reduced when the scroll bar is touched and dragged in the first direction or the opposite direction, and wherein at least one of the scroll region and the scroll bar is long-touched or tapped with a pointer to perform a function associated with the predetermined menu.” EX1005, ¶[0009]; EX1002, ¶42. In Figure 25, *Park* explains “the touch screen 400 has a

scroll region 413 extending in upward/downward directions and a scroll bar 415 displayed within the scroll region 413.” EX1005, ¶[0228]; EX1002, ¶44.

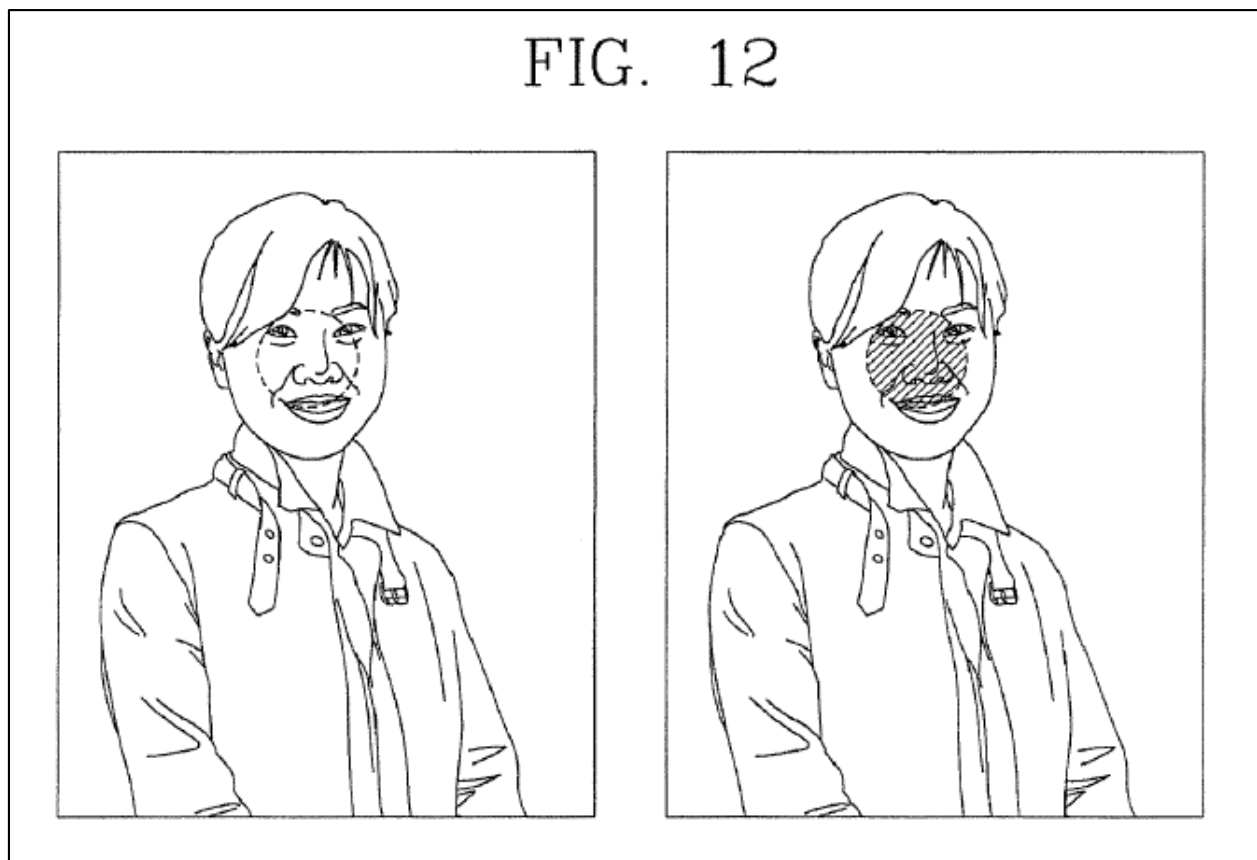
Park discloses that the touch operations “may be configured to adjust exposure, adjust brightness, select flash on/off, select whether to save the captured photo, etc.” EX1005, ¶[0232]; EX1002, ¶46.

2. *Kim*

Kim discloses “a portable terminal having a touch sensing based image capture function and image capture method therefore, the method including: displaying a preview image of an object to be captured on a touch screen; recognizing (sensing) a touch input for the preview image; setting an image capture function based on the recognized touch input; and automatically performing an image capture operation according to the set capture function. The image capture function includes setting and change for a focus area, exposure, illumination, lightness, zoom-in/zoom-out and color change.” EX1007, Abstract; EX1002, ¶49.

Kim discloses the portable terminal can perform auto focus on an object of a touch position, and “area recognition” that “refers to focusing area coverage of the touched position (*e.g.*, a circle or rectangle) by performing the AF.” EX1007, ¶[0127]; EX1002, ¶¶50-51. *Kim* discloses the user may select “the focus area by touching a point of the touch screen with his finger” (EX1007, ¶[0142], EX1002,

¶51), as well as additional methods for selecting focus areas (EX1007, ¶[0146], [1052]; EX1002, ¶¶52-53). As illustrated in Figure 12, below, the portable terminal comprises a controller “configured to display on the display module 151 an indication on the screen display (a semi-transparent color, thickness of a line, flashing) representing the touched object or area has been selected.” EX1007, ¶[0158], EX1002, ¶54.



3. *Panasonic*

Panasonic (EX1008) is an instruction manual depicting some functionality for using Panasonic digital camera model number DMC-G2K. EX1008, 1; EX1002, ¶55. The camera includes an LCD touch panel on which the user may

touch and/or drag to operate the camera. EX1008, 14; EX1002, ¶56.

Panasonic discloses several auto focus (“AF”) modes of the camera, including a “1-area-focusing” mode in which “[t]he camera focuses on the subject in the AF area on the screen.” EX1008, 78; EX1002, ¶57. While in 1-area-focusing mode, the “AF area can be moved when [icon] is selected. The size of the AF area can also be changed.” EX1008, 82; EX1002, ¶58-59. An unlabeled figure, below, on page 82 illustrates the AF area as displayed on the touch panel:



A slide bar on the right side of the touch panel, and *Panasonic* discloses a user may “[t]ouch the slide bar to change the size of the AF area.” EX1008, 82; EX1002, ¶58-59. Similar instructions and disclosures are made with reference to another AF mode, “Face Detection”. EX1008, 79-80; EX1002, ¶60. Two unlabeled figures, below, on page 80 illustrate the AF area as displayed on the touch panel:



Panasonic discloses other settings: color, brightness, saturation, shutter speed, and aperture value, which can be determined by dragging a slide bar, shown in the figure below. EX1008, 107, 94-96, 98; EX1002, ¶¶63-65.



VIII. CLAIM CONSTRUCTION

The claims of the '654 patent should be construed under the *Phillips* standard. 37 C.F.R. § 42.100(b); *see generally Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Under *Phillips*, a claim term is typically given its ordinary

and customary meaning, as would have been understood by a POSITA, at the time of the invention, having taken into consideration the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1312-16. The Board, however, construes only the claims when necessary to resolve the underlying controversy. *See Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper No. 11 at 16 (P.T.A.B., Aug. 14, 2015). No express constructions are necessary to assess whether the prior art reads on the challenged claims.³

In a related ITC proceeding, PO agreed that the challenged claims do not require construction and should be given their plain and ordinary meaning. *In the Matter of Certain Electronic Devices, Including Mobile Phones, Tablets, Laptops, Components Thereof, and Products Containing the Same*, USITC Investigation No. 337-TA-1376. Petitioner and PO agreed that there was no lexicography or disclaimer at issue regarding the claims of the '654 patent. Nevertheless, PO

³ Petitioner reserves all rights to raise claim construction and other arguments in district court. For example, Petitioner has not raised all challenges to the '654 patent in this petition, including validity under Sections 101/112, and a comparison of the claims to any prior art or accused products in litigation may raise controversies needing resolution through claim constructions not presented here.

contended various limitations of claim 1 should be “read together” as to impose a limitation that the AFG must be maintained at the specific point while an image capturing setting is adjusted. EX1023, 878:22-879:5. This interpretation has no basis in the claim language, and should not be permitted.

The plain claim language requires only that an indicator for the current setting be displayed at a given moment while the displayed guide is kept at the specific point. The specification says nothing about maintaining an AFG while a setting is adjusted. To the extent PO relies on Figures 22-23, the illustrative elements of those Figures do not show what happens to the AFG as the setting is changed. Thus, there is no basis to limit the challenged claims to such interpretation as advanced during the ITC investigation. *See Liebel-Florsheim*, 358 F.3d 898, 913 (Fed. Cir. 2004) (“[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.”). Such an interpretation is inconsistent with the ancestor prosecution history, which confirms “maintaining the displayed auto focus guide at the specific point” requires only that the position of the AFG at the specific point be maintained. EX1019, 590-98. This history shows PO knew how to— and did claim — adjusting a setting while

maintaining a focus guide, but chose not to do so in the '654 patent. EX1001, 24:14-37.

IX. DETAILED EXPLANATION OF GROUNDS

A. Ground 1: *Park* and *Kim* render the challenged claims unpatentable.

1. Claim 1

a. Preamble

Petitioner maintains that the preamble is not limiting, and PO has not disputed this in related proceedings. *Park* discloses “a mobile terminal 100” (EX1005, ¶[0017]) which “may include a wireless communication member 110, an audio/video (A/V) input member 120, a user input member 130, a sensing member 140, an output member 150, a memory member 160, an interface member 170, a control member 180, and a power supply member 190.” EX1005, ¶[0019]; EX1002, ¶69. *Park* provides several examples of terminal devices, including “personal computers, laptops, handheld mobile phones, and the like.” EX1005, ¶[0002]. *Park* explains that “terminals can be divided into mobile terminals and stationary terminals based on whether they are mobile or stationary[.]” EX1005, ¶[0003]; EX1002, ¶69. Thus, *Park* discloses a terminal that is mobile or portable, rather than stationary.

b. Element 1a

Park discloses the audio/video input member may include a camera which “processes an image frame, such as a still image or moving image, obtained by an image sensor in a video call mode or a shoot mode.” EX1005, ¶[0031]; EX1002, ¶70.

c. Element 1b

Park discloses the mobile terminal may comprise a touch pad, and that “when the touch pad is interlaced with the display module 151 ... it may be referred to as a touch screen.” EX1005, ¶[0034]; EX1002, ¶71.

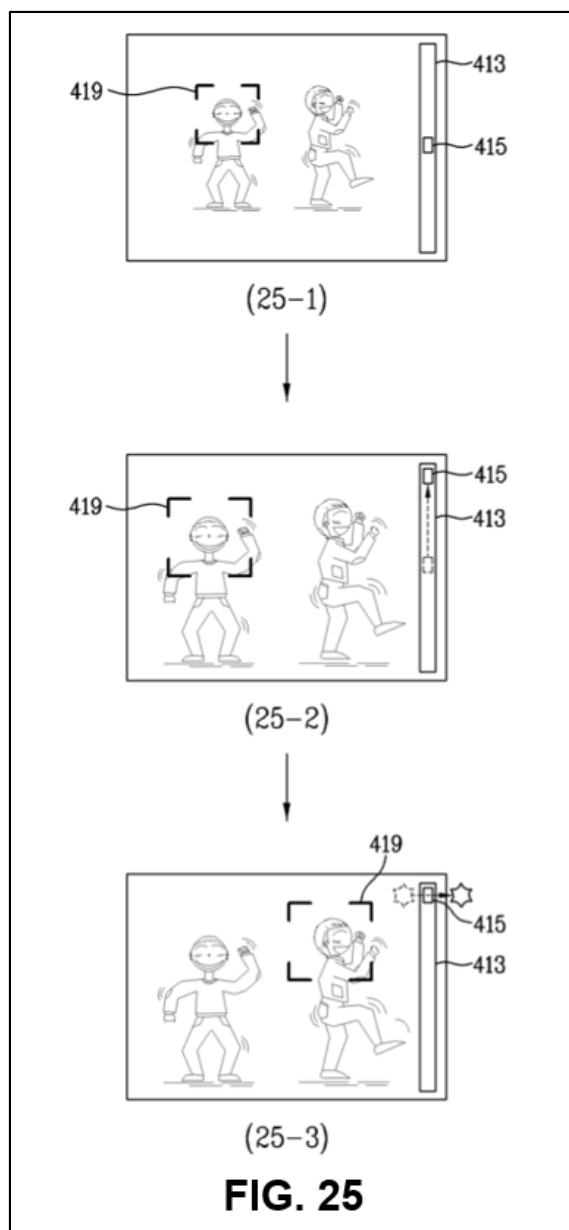
d. Element 1c

Park discloses a “control member” which “generally controls the overall operation of the mobile terminal.” EX1005, ¶[0053]; EX1002, ¶72. The control member may “[perform] associated control and processing for voice calls, data communications, video calls, and the like.” *Id.* The control member may be implemented in hardware, e.g., application specific integrated circuits (ASICs), and may execute software code. EX1005, ¶¶[0056]-[0057]; EX1002, ¶72. A POSITA would have understood the control member to be a controller because it includes hardware and is capable of executing instructions from a computer (e.g., software). EX1002, ¶72. In addition, *Park* inherently discloses a controller; a POSITA would have understood such a feature to be necessary for the mobile

terminal of *Park* to perform its disclosed functions, including those recited by the challenged claims. *Id.*

e. Element 1d

Park discloses controlling the touch screen to display a preview image from the camera. *Park* discloses “a control method for a mobile terminal associated with the present disclosure.” EX1005, ¶[0226]; EX1002, ¶73. Referring to Figure 25, below, *Park* states, “it is illustrated that... a preview image for taking a photo is displayed on the touch screen 400.” EX1005, ¶[0228]; EX1002, ¶74.



Park states that Figure 25 is a diagram of a display screen on which the second embodiment of a control method of a mobile terminal associated with the present disclosure is implemented.” EX1005, ¶[0227]; EX1002, ¶74. *Park* discloses that “[t]he display module 151 displays and outputs information being processed by the mobile terminal 100. For example, ... if the mobile device 100 is

in video call mode or recording mode, it displays the recorded and/or received video or UI or GUI.” EX1005, ¶[0040]; EX1002 ¶73.

f. Element 1e

Park discloses when executing the photo-taking menu to control the touch screen to display a preview image, an auto focus indicator is displayed on the preview image. *Park* states:

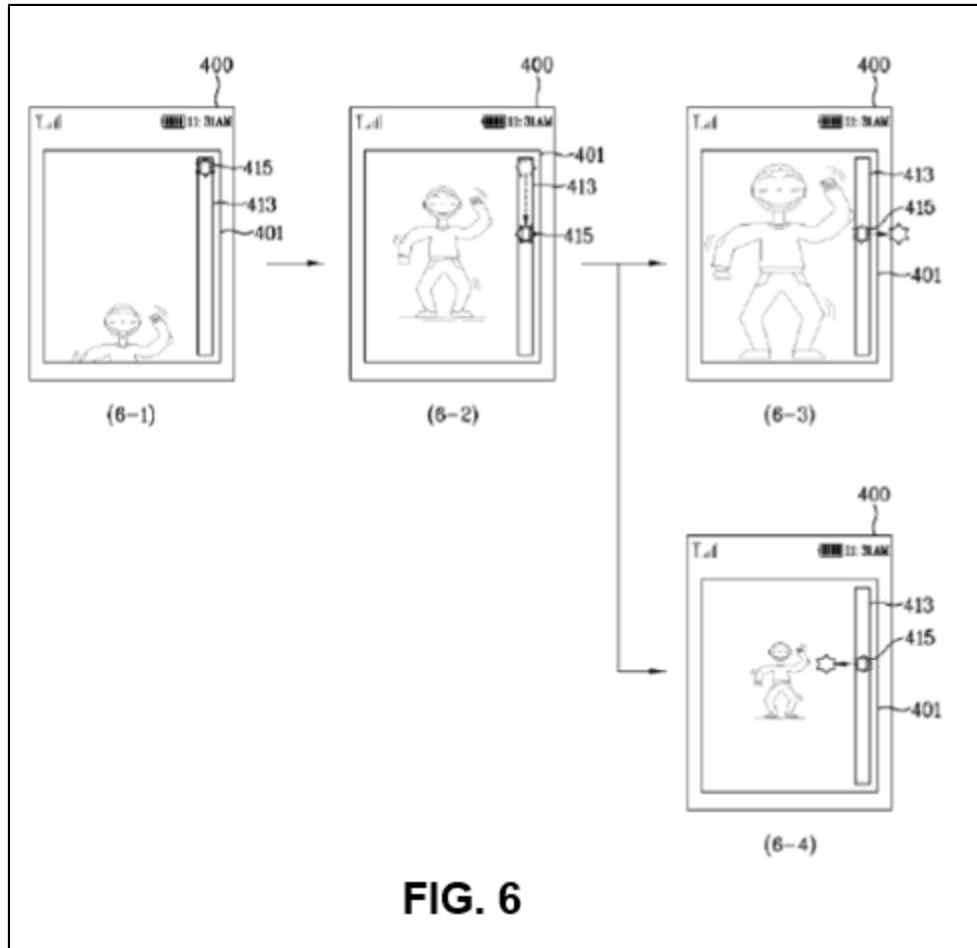
[A] photo-taking menu is executed on the mobile device 100, and thus **a preview image for taking the photo is displayed on the touch screen 400**. Further, the touch screen 400 has a scroll region 413 extending in an upward and downward direction and a scroll bar 415 displayed within the scroll region 413. **A focus region indicator (419) is displayed on the preview image. [T]he focus region indicator 419 is for indicating [a] region that is focused when taking a photo via the camera module 121 on the mobile device 100.**

EX1005, ¶[0228] (emphasis added); EX1002, ¶75.

A POSITA would have understood *Park*’s focus region indicator to be an AFG because, like the AFG of the ’654 patent, *Park*’s focus region indicator is displayed on the preview image to indicate an area of the preview image to be focused in the captured image. EX1005, ¶[0228]; EX1002, ¶75. A POSITA would have understood executing a photo-taking menu on the mobile device to include a touch input to a specific point on the touch screen. *See id.* *Park* discloses that a UI or GUI which is displayed on the mobile device, and that “when the display

module 151 and the touchpad are mutually layered to form a touch screen, the display module 151 may be used as an input device in addition to an output device.” EX1005, ¶¶[0040]-[0041]; EX1002, ¶76. Accordingly, a POSITA would have understood that *Park* discloses a user may touch the touch screen in order to provide user input. *See* EX1002, ¶76.

Park discloses executing a number of different menus via the touch screen. *See* EX1005, ¶¶[0108]-[0224]; EX1002, ¶77. With regard to Figure 6, *Park* discloses, “it is illustrated that in the mobile device 100, for example, an image viewer menu is being executed, and thus an image viewer 410 for viewing images is being displayed on the touchscreen 400.” EX1005, ¶[0108]; EX1002, ¶77.



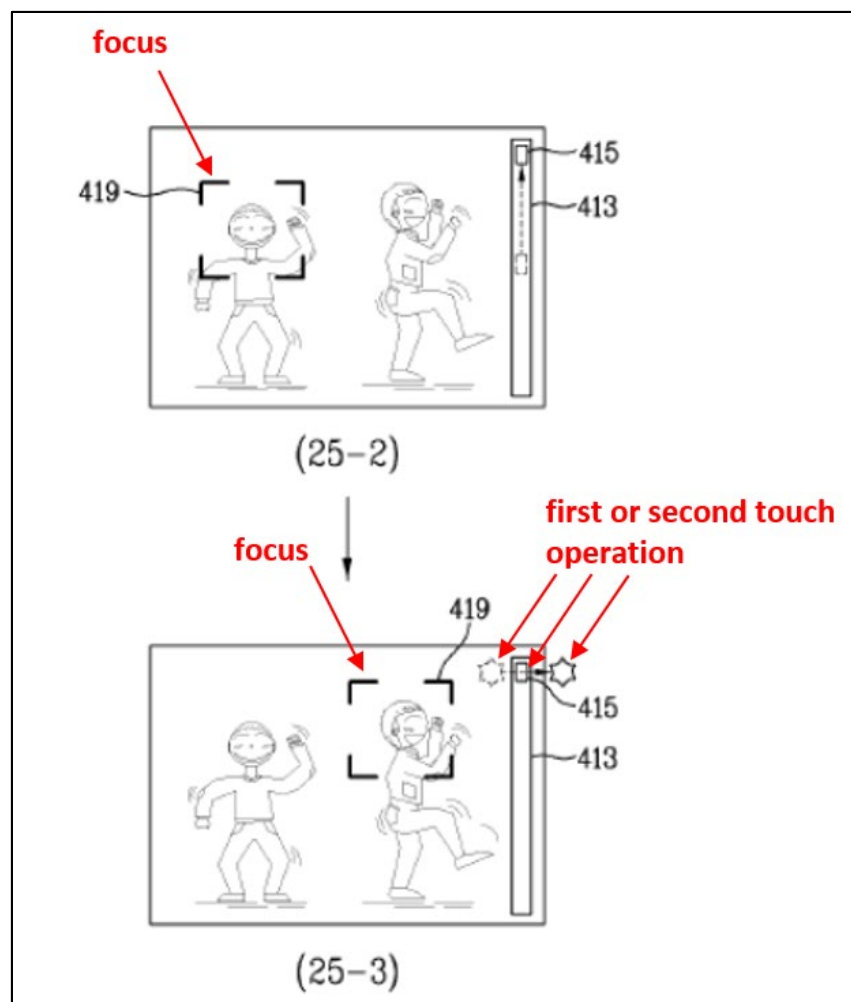
As illustrated in Figure 6, *Park* discloses that executing the image viewer menu is conducted entirely on the touch screen of the mobile terminal. Similar disclosures are made for executing a phonebook menu, executing a video thumbnail viewing menu, executing a message menu, executing a call log view menu, and more. EX1005, ¶¶[0128], [0145], [0156], [0179], [0185]; EX1002, ¶78. A POSITA would have understood that executing a photo-executing menu would be carried out in the same manner, *e.g.*, by input to the touch screen. EX1002; ¶78. Therefore, *Park* discloses a first touch input to execute the photo-executing menu. *Park* discloses that a focus region indicator is displayed on the preview image in

response to the first touch input to execute the photo-executing menu. EX1005, ¶[0228]; EX1002; ¶79. Accordingly, *Park* discloses a first touch input to execute the photo-executing menu, in response to which a preview image and focus region indicator are displayed on the touch screen.

Referring to Figure 25, reproduced in part below with annotations for clarity, *Park* discloses:

[A] first touch operation or a second touch operation is performed on the scroll bar 415, as shown at 25-3 of FIG. 25. Then, the focus region indicator 419 is moved to correspond to the right person of the two people in the preview image. Thus, the device user can easily adjust the focus of the desired member of the picture when taking the picture.

EX1005, ¶¶[0230]-[0231]; EX1002, ¶80. As illustrated by the annotated figure below, the first or second touch operation is illustrated as a left-to-right horizontal touch and drag movement of a finger across the scroll bar. *Id.*



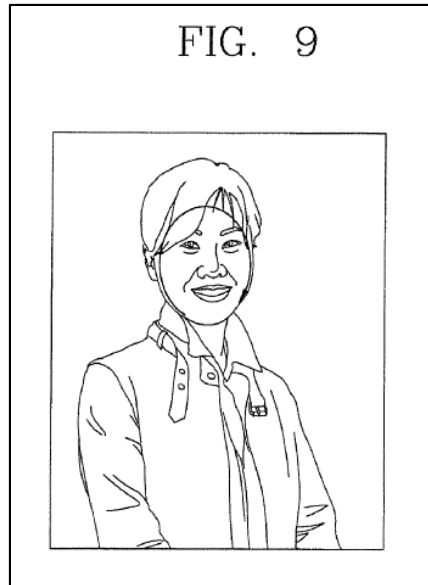
A POSITA would have been motivated to use the existing functionality of Park that displays a guide in response to a touch operation and make a routine modification to cause the guide to appear at a specific point touched on the screen. This is supported by *Kim*. EX1002; ¶84. *Kim* discloses this limitation in a device that aims to solve the same technical problems as *Park*. EX1002; ¶81. See *KSR Int’l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007).

Kim discloses “a portable terminal having a touch sensing based image capture function and image capture method therefore, the method including:

displaying a preview image of an object to be captured on a touch screen; recognizing (sensing) a touch input for the preview image; setting an image capture function based on the recognized touch input; and automatically performing an image capture operation according to the set capture function.”

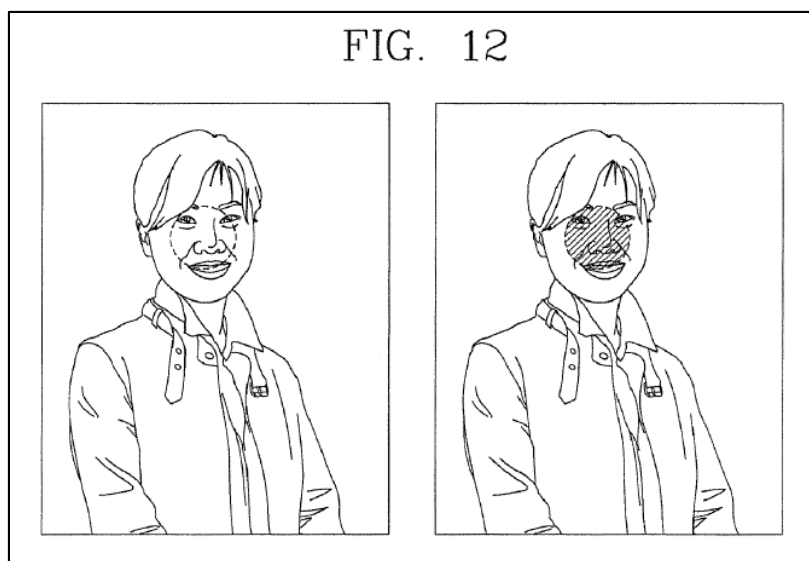
EX1007, Abstract. *Kim* discloses, “When the portable terminal is in the video call mode or the image capturing mode, the display module 151 may display a preview image of an object to be captured by the camera 121 and then displays an image captured by the camera 121, a UI, a GUI, and the like on its screen display.” *Id.*, ¶[0112]; EX1002, ¶91.

Kim discloses, “If the user selects an image-capturing mode in the camera mode, the controller 180 performs a control of the display module 151 such that a preview image of an object to be captured, sensed by an image sensor (not shown), can be displayed on the touch screen (S10).” EX1007, ¶[0141]; EX1002, ¶92. Thus, *Kim* teaches that the controller performs a control of the display module to display, on the touch screen, a preview image of an object to be captured. *Kim* discloses that “when the display module 151 and the touch pad are overlaid in a layered manner to form a touch screen, the display module 151 may function as both an input device and an output device.” EX1007, ¶[0058]; EX1002, ¶92. Thus, *Kim* teaches that the controller performs a control of the display module, which forms the touch screen.



In Figure 9, above, *Kim* discloses an Auto Focus function that “refers to a function which the camera 121 automatically focuses on an object to be captured.” EX1007, ¶[0127]; EX1002, ¶93. *Kim* discloses that “[w]hen the preview image is displayed, **the user selects the focus area by touching a point of the touch screen with his finger**, or sets the focus by drawing a circle with his finger as shown in FIG. 9.” EX1007, ¶[0142] (emphasis added); EX1002; ¶93.

Kim discloses that “the controller 180 recognizes the type of touch inputted by the user, sets an image capture function according to the corresponding touch input, and then displays it on the preview screen display (S30~S32).” EX1007, ¶[0155]; EX1002, ¶94. *Kim* discloses that “while the focus is displayed, the user may move the corresponding focus by using his finger (dragging).” EX1007, ¶[0156]; EX1002; ¶94.



With respect to Figure 12, above, *Kim* discloses that “[i]n the first and second embodiments of the present invention, the controller 180, as shown in FIG. 12, is configured to display on the display module 151 an indication on the screen display (e.g., a semi-transparent color or thickness of a line) representing that the touched object or area has been selected.” EX1007, ¶[0158]; EX1002; ¶195. As shown in Figure 12, above, the indication may appear as a circle with shading around the touched point. EX1007, FIG. 12.

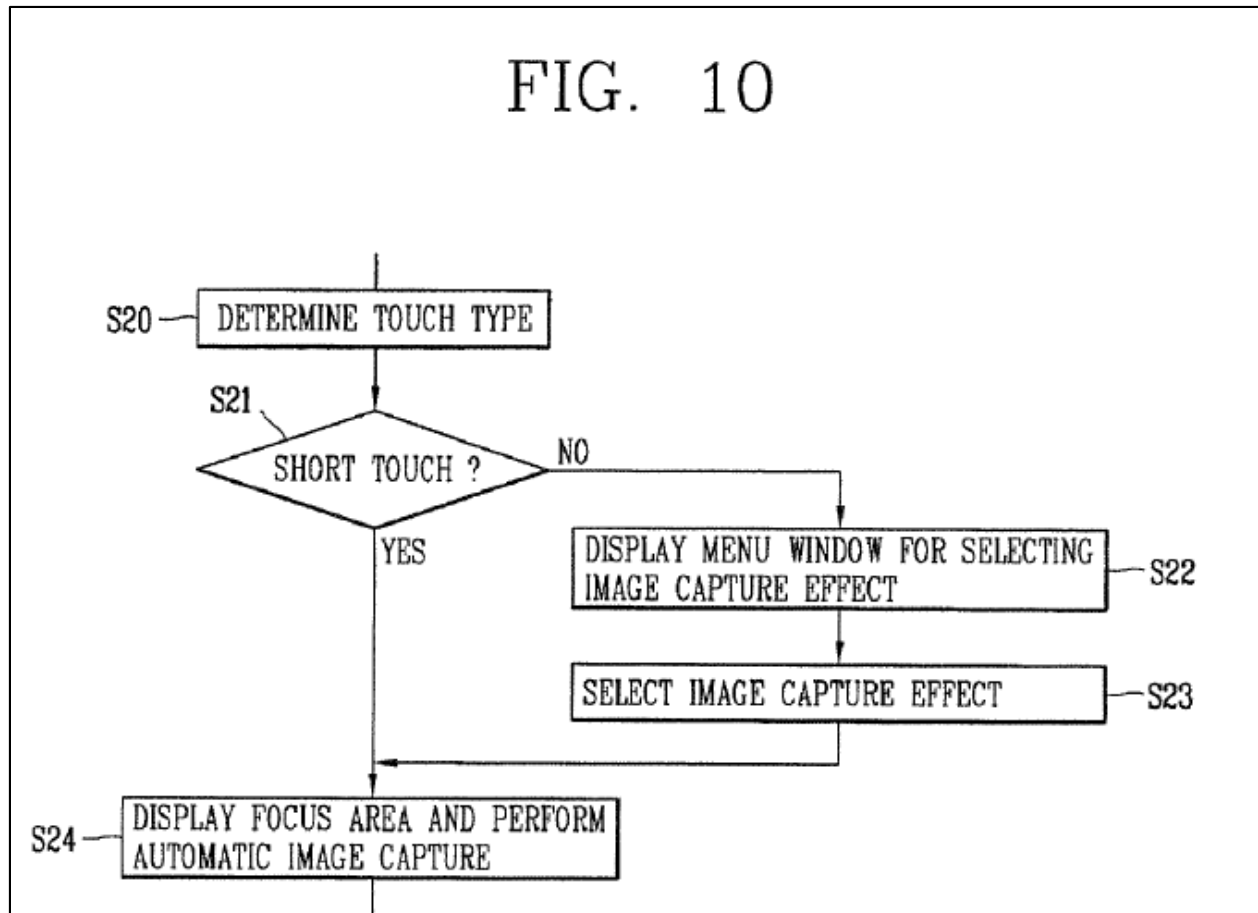
A POSITA would have understood *Kim*’s disclosure of displaying a focus on the preview image to be an AFG because it indicates an area to be auto focused in the preview image in response to a touch input. EX1007, ¶[0155]; EX1002, ¶96. Thus, *Kim* discloses displaying an AFG at a specific point of the touch screen in response to a first touch input to the specific point. EX1002, ¶96.

Park and *Kim* are analogous. Both references are directed to mobile terminals having cameras, as well as touch screens which display preview images to a user while capturing photos. *See* EX1005, ¶¶[0005]-[0006]; EX1007, ¶¶[0005]-[0009]; EX1002, ¶¶82-84.

For example, *Park* discloses “provid[ing] a terminal and a control method thereof that allows a terminal user to easily select a desired function or menu and enter a predetermined command within the selection function or menu as needed, even though various function and menus exist on the terminal.” EX1005, ¶[0006]; EX1002, ¶83. Similarly, *Kim* discloses “a portable terminal, including: a touch screen for displaying a preview image of an object to be captured; and a controller for displaying an image capture function based on a touched position, when a touch for the displayed preview image is inputted, and performing an image capture operation according to the corresponding capture function.” EX1007, ¶[0013]; EX1002, ¶85. *Kim* discloses “an image capture method for a portable terminal that can set and execute a variety of capture functions according to a touch input.” EX1007, ¶[0011]; EX1002, ¶85.

Park discloses a focus area indicator displayed on the preview image which a POSITA would have understood to be an AFG displayed on the preview image. EX1005, ¶[0228]; EX1002, ¶86. Similarly, *Kim* discloses that an indication of the focus area or object selected by a user may be displayed in response to a touch

input by the user. EX1007, ¶[0146]; EX1002, ¶87. Referencing Figure 10, below, *Kim* describes the controller determining that the user has input a short touch (S21), controlling the display to generate a focus on the touched position (S24) while controlling the camera to automatically capture the image (S24). *Id. Kim* discloses “in a case of the short touch, the recognition technique (object or area), the depth of field adjustment, the focus shape, etc., which are set as a default setting, may be displayed or initially set from the menu by the user.” *Id.*



A POSITA would have been motivated to substitute the first or second touch operation on the scroll bar of *Park* to move the AFG with *Kim*'s touch on the

preview image, to make a device that allows a user to conveniently adjust the settings of an image during the capturing of the image. EX1002, ¶88. The POSITA would have recognized that the implementation of *Kim*'s touch to focus technology is simpler than the technology in *Park* which implicitly requires face recognition. *Id.*, ¶89. A POSITA would have had a reasonable expectation of success in doing so, at least because the combination would have used known technologies (for example, the mobile terminal of *Park* which displays an AFG on a preview image) according to a known method (for example, displaying the AFG in response to a first touch input as in *Kim*) to yield predictable results (for example, displaying an AFG on a preview image in response to a first touch input). *Id.* Thus, the modification of *Park* with *Kim* would have amounted to nothing more than use of a known technique to improve a similar device, and the results of such routine modification would have been predictable. EX1002, ¶90. *See* KSR, 550 U.S. at 417.

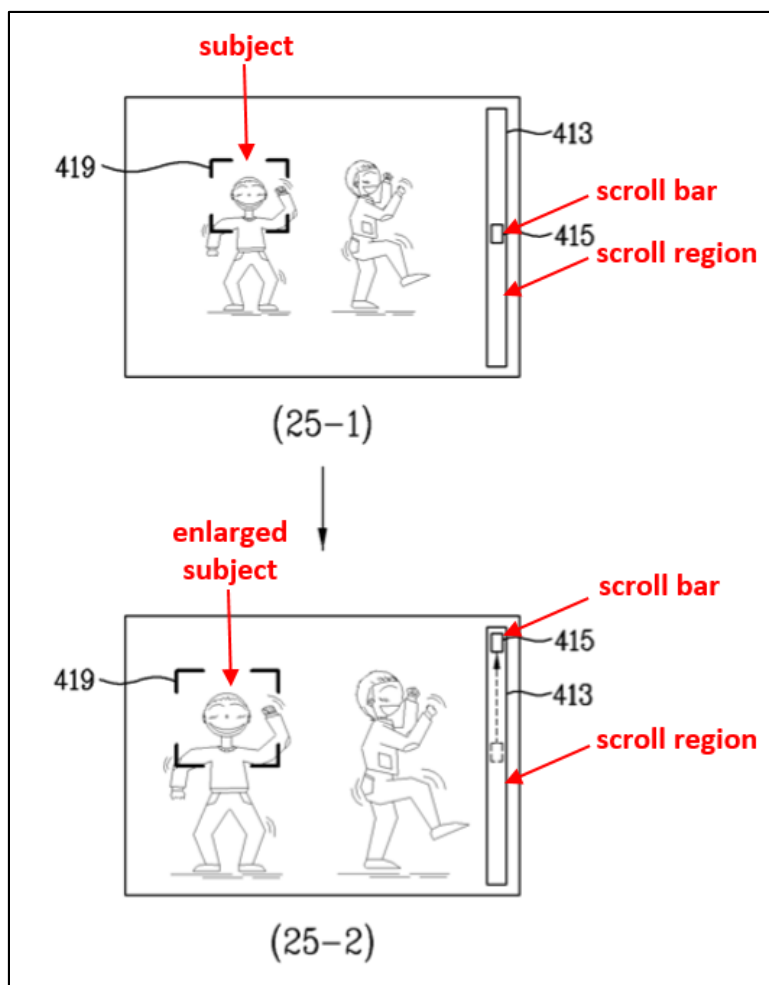
g. Element 1f

Park discloses a focus region indicator which, as set forth above, is an “auto focus guide.” EX1005, ¶[0228]; EX1002, ¶97. *Park* discloses that “the focus region indicator 419 is for indicating [a] region that is focused when taking a photo via the camera module 121 on the mobile device 100.” *Id.* After a touch operation, “the focus region indicator 419 is moved to correspond to the right person of the

two people in the preview image. Thus, the device user can easily adjust the focus of the desired member of the picture when taking the picture.” EX1005, ¶¶[0230]-[0231]; EX1002, ¶97. A POSITA would have understood from this disclosure that moving the focus region indicator adjusts the focus of the picture to the member of the picture on which the region indicator is placed, and therefore, that *Park* discloses focusing the preview image based on a location of the AFG. EX1002, ¶97.

h. Element 1g

Park discloses that “the touch screen 400 has a scroll region 413 extending in an upward and downward direction and a scroll bar 415 displayed within the scroll region 413.” EX1005, ¶[0228]; EX1002, ¶298. *Park* describes touching and dragging the scroll bar from bottom to top to increase or decrease the zoom of the preview image. EX1005, ¶[0229]; *see also id.*, ¶¶[0234]-[0235]; EX1002, ¶98. *Park* describes changing the zoom of the preview image by touching and dragging the scroll bar from top to bottom. *Id.* Figure 25, below, illustrates a user dragging the scroll bar upward to increase zoom of the preview image. *Park* discloses that “the first touch operation and the second touch operation on the scroll bar may be configured to adjust exposure, adjust brightness, select flash on/off, select whether to save the captured photo, etc.” EX1005, ¶[0232], claim 3; EX1002, ¶98.

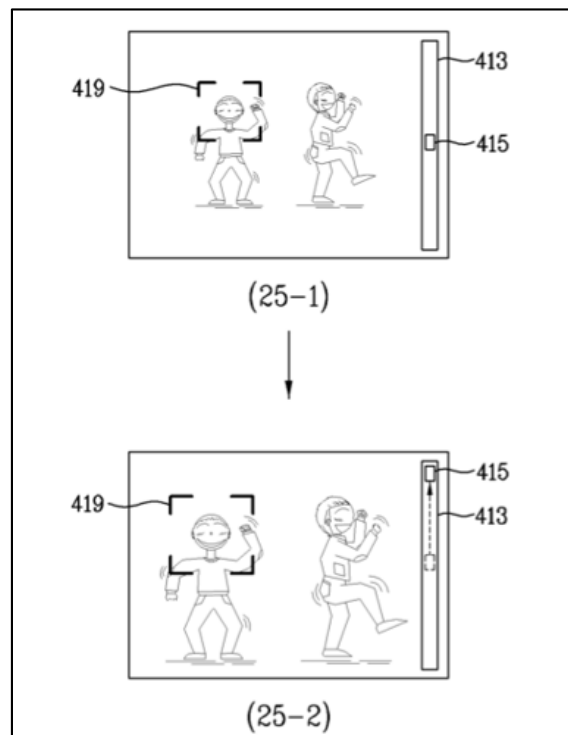


A POSITA would have understood that zoom, exposure, and brightness are image capturing settings. Claims 16-18 of the '654 patent expressly state that brightness, position of the lens, and zoom are image capture settings. EX1001, 25:32-41; EX1002, ¶99. Each of these can be adjusted and set to varying values, and each affects the way in which the image is captured. *Id. Park* discloses that scroll bar may be configured to determine and increase or decrease an image capturing settings, including zoom, exposure, and brightness, in response to a

finger being dragging up or down along the scroll bar. EX1005, ¶¶ [0229], [0232]; EX1002, ¶103.

i. Element 1h

As illustrated in Figure 25, *Park* discloses that when a preview image is displayed on the touch screen, the touch screen displays the scroll bar in its position within the scroll region and displays a focus region indicator. *See* EX1005, ¶[0228]; EX1002, ¶¶102-103. As set forth above, a POSITA would have understood the relative position of the box, number 415, on the scroll bar, number 413, to be an image capture setting indicator, and the focus region indicator, labeled 419, to be a displayed AFG. *See id.* Thus, the displayed AFG is maintained while an indicator for indicating the current image capture setting is displayed.



While not required by the claim⁴, *Park* discloses the preview image may be “enlarged” when “the scroll bar 415 is touched and dragged from bottom to top”, and the image may “collapse” when the scroll bar is “touched and dragged from bottom to top.” EX1005, ¶¶[0228]-[0229]; EX1002, ¶104. Panels 25-1 and 25-2 of Figure 25 display the same preview image at two different zoom values and display a focus area indicator centered at the same point in the preview image. EX1005, FIG. 25; EX1002, ¶104. Thus, the focus area indicator is maintained at the same point in the preview image even as the position of the scroll bar changes.

j. Element 1i

Park discloses “[the] camera 121 may be implemented as appropriate to capture images or video of the user or the like.” EX1005, ¶[0071]; EX1002, ¶105. *Park* discloses that “[the] camera 121 may be implemented as appropriate to capture images or video of the user or the like.” EX1005, ¶[0071]; EX1002, ¶106.

⁴ For the avoidance of doubt, Petitioner maintains that adjusting a setting while maintaining the displayed AFG is not a requirement of the claims, as addressed in the Claim Construction section. Petitioner identifies disclosures of the prior art that establish that even under the incorrect position PO has previously taken, this is still disclosed in the prior art.

Park discloses that “it is illustrated that a photo-taking menu is executed on the mobile device 100[.]” EX1005, ¶[0228]; EX1002, ¶106. Additionally, as set forth above, *Park* discloses adjusting an image capturing setting, such as zoom, by touching and dragging the scroll bar displayed on the preview image. EX1005, ¶¶[0228]-[0232]; EX1002, ¶107. *Park* discloses that the preview image is “for taking a photo displayed on the touch screen,” and thus the photo taken corresponds to what is displayed in the preview image on the touch screen. EX1005, ¶[0228]; EX1002, ¶108-09. APOSITA would therefore have understood that *Park* discloses capturing an image according to the current image capturing setting.

This is disclosed by *Park* and *Kim*. EX1002, ¶110. *Kim* discloses that the controller is configured to display an indication that “the current image is to be captured[.]” EX1007, ¶[0158]; EX1002, ¶111. Thus, *Park* and *Kim* disclose the entirety of this limitation. EX1002, ¶¶112.

2. Claim 3

Park and *Kim* disclose claim 3. *Park* discloses that when a photo-taking menu is executed on the mobile terminal, “a preview image for taking a photo is displayed on the touch screen 400,” “the touch screen 400 has a scroll region 413 extending in an upward and downward direction and a scroll bar 415 displayed within the scroll region 413,” and “[a] focus region indicator [419] is displayed on

the preview image.” EX1005, ¶[0228]; EX1002, ¶113. A POSITA would have understood the scroll bar and scroll region to be an indicator for indicating the current image capturing setting. *See* EX1005, ¶[0228]; EX1002, ¶¶114-15. Thus, *Park* discloses displaying both a preview image and an image capturing setting indicator in response to a touch executing a photo-taking menu, without requiring additional touch inputs to display the image capturing setting indicator.

Kim discloses setting an image capture function according to a corresponding touch input, displaying the image capture function on the preview screen display, and displaying an AFG which could be further adjusted. EX1007, ¶[0155]; EX1002, ¶¶116-17. It would have been obvious to a POSITA to combine displaying the AFG at the specific point, as taught by *Kim*, and displaying scroll region indicator, as taught by *Park*, in response to the same touch input based on the disclosures of *Kim* and because it was common to adjust these settings and because doing so would increase the efficiency of adjusting the image capturing settings and focus when capturing an image. *Id.*, ¶117-18.

3. Claim 9

Park and *Kim* disclose claim 9. As set forth above, *Park* discloses touching and dragging a scroll bar within a scroll region extending in an upward and downward direction, and discloses that image capture settings, such as zoom, of the preview image may be adjusted to by dragging the scroll bar up or down.

EX1005, ¶¶[0228]-[0229]; EX1002, ¶¶119-20.

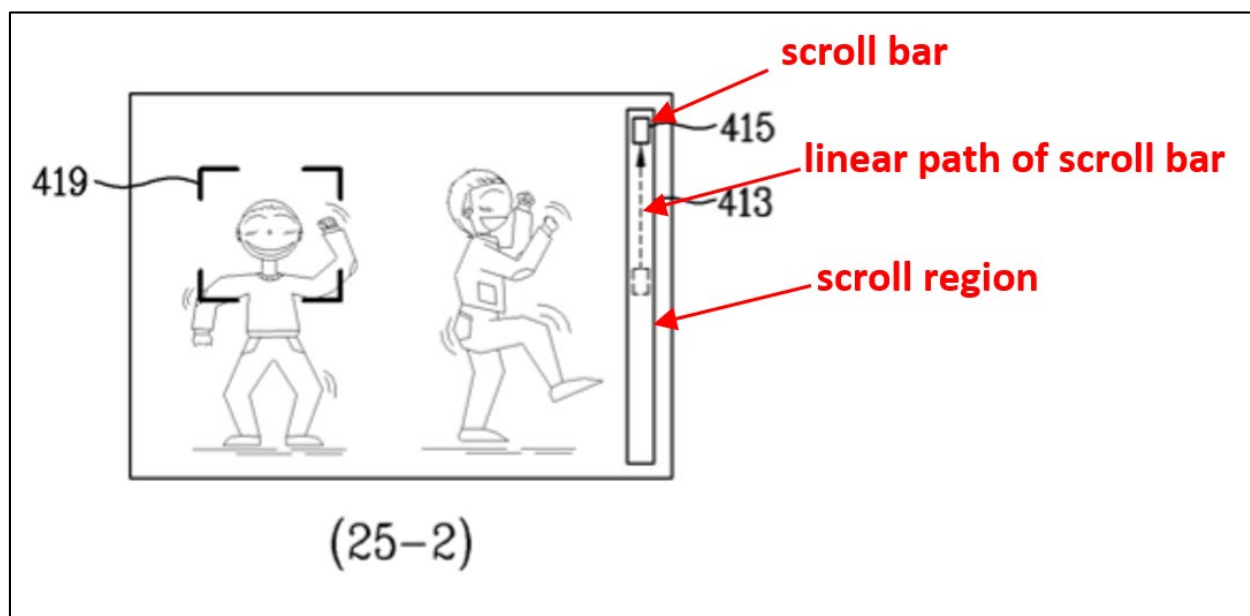
4. Claim 10

Park and *Kim* disclose claim 10. As set forth above, zoom of an image is an image capturing setting. EX1005, ¶[0229]; EX1002, ¶121. In one embodiment, *Park* discloses “the scroll bar 415 is touched and dragged from bottom to top. Then, the preview image is enlarged. [The] scroll bar 415 may also be configured to collapse the preview image when touched and dragged from bottom to top.” EX1005, ¶[0229]; EX1002, ¶121. By contrast, an alternate embodiment, *Park* discloses using flick-style touches on a scroll bar, instead of dragging, to zoom in and out on an image. EX1005, ¶¶[00112]-[0113]; EX1002, ¶122. Thus, a POSITA would have understood that, unlike a flick-style touch, dragging the scroll bar would allow for changing the value of zoom based on the distance the scroll bar is dragged within the scroll region. EX1002, ¶122.

5. Claim 15

Park and *Kim* disclose claim 15. *Park* discloses “the touch screen 400 has a scroll region 413 extending in an upward and downward direction and a scroll bar 415 displayed within the scroll region 413” and that “the scroll bar 415 is touched and dragged from bottom to top. Then, the preview image is enlarged. [The] scroll bar 415 may also be configured to collapse the preview image when touched and dragged from bottom to top.” EX1005 ¶¶[0228]-[0229]; EX1002, ¶123. As

illustrated in Figure 25, an annotated portion of which is below, the scroll region is a rectangular shape, and the scroll bar is moved along a linear axis of the scroll region. EX1002, ¶123.



Park discloses that touch operations on the scroll bar can be used “to adjust exposure, adjust brightness, select flash on/off, select whether to save the captured photo, etc.” EX1005, ¶¶[0230], [0232], claim 3; EX1002, ¶¶126. APOSITA would have understood that the scroll bar is dragged in a first direction (*e.g.*, upward) and in a second direction (*e.g.*, downward) along the linear axis within the scroll region, causing the zoom (or other parameters) to increase or decrease. EX1002, ¶124.

6. Claim 16

Park and *Kim* disclose claim 16. *Park* discloses that “a preview image for taking a photo is displayed on the touch screen 400. The touch screen 400 has a

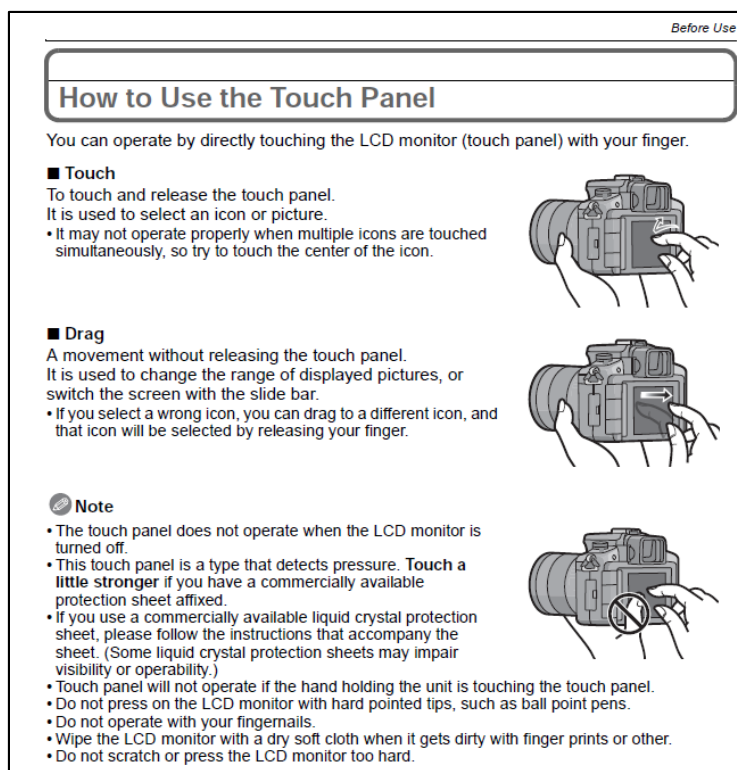
scroll region 413 extending in an upward and downward direction and a scroll bar displayed within the scroll region.” EX1005, ¶[0228]; EX1002, ¶125. *Park* discloses that touch operations on the scroll bar can be used “to adjust exposure, adjust brightness, select flash on/off, select whether to save the captured photo, etc.” EX1005, ¶¶[0230], [0232], claim 3; EX1002, ¶126. *Kim* describes showing on the display “a variety of information necessary to perform the image capture operation,” including “at least one of focus area, exposure, illumination, [and] lightness.” EX1007, ¶[0115]; EX1002, ¶126. Thus, *Kim* discloses displaying one of *and more than one of* a focus area and a brightness-related setting such as exposure, illumination, and/or lightness. Accordingly, *Park* in view of *Kim* discloses wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

B. Ground 2: *Panasonic* renders claims 1, 3, 9, 10, 15, and 16 anticipated/unpatentable.

1. Claim 1

a. Preamble

Petitioner maintains that the preamble is not limiting, and PO has not disputed this in related proceedings. *Panasonic* discloses a mobile terminal within the scope of the claim 1 by disclosing a handheld digital camera. Throughout its contents, *Panasonic* repeatedly illustrates the intended use of its camera to be carried in a user’s hands, such as at page 15 below. EX1008, 15; EX1002, ¶128.



EX1008, 15. *Panasonic* discloses that its digital camera has the functionality of a mobile terminal as contemplated by the '654 patent, including capturing images and video. EX1008, 1, 40; EX1002, ¶129.⁵

⁵ PO has acknowledged *Panasonic* discloses a mobile terminal in related proceedings. In the ITC investigation relating to the '654 patent, PO's expert agreed "mobile terminal" is a broad term encompassing a wide range of mobile devices. EX1022, 270:1-3 ("Q. And we can agree 'mobile terminal' is a broad term that encompasses a wide range of mobile devices, right? A. That is correct.").

b. Element 1a

Panasonic discloses a digital camera capable of taking pictures. EX1008, 1, 40; EX1002, ¶130. *Panasonic* discloses that its camera is capable of displaying the pictures. EX1008, 59; EX1002, ¶130.

c. Element 1b

Panasonic discloses an LCD monitor touch panel that a user may operate with a finger or stylus pen. EX1008, 15; EX1002, ¶131. *Panasonic* discloses examples of operations performed using the touch panel, as described on page 16, below. EX1008, 16; EX1002, ¶131.

Before Use

What can be done by touch operation

By using the touch panel, you can move the AF area by touching the subject to focus on, or change the setting directly by touching the icons, making it easier to operate during recording or setting.

Following are examples of what can be done by touch operation.

When recording

A screenshot of a camera's video recording interface. A hand with a white glove is shown touching a person in the center of the frame. The camera's viewfinder shows a green field and a building in the background.

Touch Tracking (P48, 81)
 Touch 1-area AF (P82)
 Face Recognition Touch
 1-area AF (P79)
 Touch Multi AF Area
 Selection (P82)
 Touch MF Assist Enlarge
 (P83)

A line drawing of a hand holding a camera. The index finger is touching the LCD screen, which displays a small image of a person.

Touch Shutter (P54)
 During recording, a picture is
 taken automatically after
 focusing on the subject that is
 touched.

A screenshot of a camera's LCD screen showing a grid of yellow guide lines. A hand with a white glove is shown touching one of the lines.

Guide Line Position
 Movement (P65)
 Histogram Position
 Movement (P66)

When recording

A screenshot of a camera's LCD screen showing a video recording interface. A hand with a white glove is shown touching a menu icon on the right side of the screen.

Touch Quick Menu (P33)
 LCD Recording Information Display Touch Operation (P34)

When playing back

A screenshot of a camera's LCD screen showing a still image of a person. A hand with a white glove is shown touching the image. A red double-headed arrow indicates the zoom function.

Picture Playback (P57)
 Playback Zoom (P60)

Thus, *Panasonic*'s touch panel is, and has the functionality of, a touch screen.

EX1002, ¶131.

d. Element 1c

Panasonic inherently discloses a controller. *Panasonic*'s digital camera includes, among other things, a camera and a touch screen. Such components require a hardware and software capable of controlling their operation. EX1002, ¶133. Thus, a POSITA would recognize that a controller is inherently disclosed in *Panasonic*. *Id.*

e. Element 1d

Panasonic discloses controlling the touch screen to display a preview image received via the camera. *Panasonic* discloses taking pictures with a desired defect “by previewing the subject on the LCD monitor.” EX1008, 106; EX1002, ¶133. When discussing how a user may check depth of field for an image before taking a picture, *Panasonic* repeatedly refers to a “preview screen” showing the image before it's taken. EX1008, 97, EX1002, ¶133. Thus, *Panasonic* discloses displaying an image on its touch screen before the image is captured. EX1002, ¶133. *Panasonic* also inherently discloses a controller for controlling the device to display preview images as a POSITA would have understood such a feature to be necessary for the device of *Panasonic* to perform its disclosed functions, including those recited by the challenged claims. EX1002, ¶133.

f. Element 1e

Panasonic discloses controlling the touch screen to display an AFG at a specific point of the touch screen in response to a first touch input to the specific point. *Panasonic* discloses a user can “set the focus and exposure to a subject specified on the touch panel.” EX1008, 78; EX1002, ¶134. *Panasonic* describes several methods for setting focus, including using “1-area-focusing” mode and “Face Detection” mode. *Id.*

In 1-area-focusing mode, *Panasonic* discloses that “[t]he camera focuses on the subject in the AF area on the screen” and that “[p]osition and size of the AF area can be changed.” *Id.* As shown in the page below, *Panasonic* teaches that the user can move the AF area by touching a subject. EX1008, 82; EX1002, ¶134.

About [] (1-area-focusing)

AF area can be moved when [] is selected. The size of AF area can also be changed.

- 1 Touch the subject to move the AF area.**
 - AF area setting screen is displayed.
 - Press and hold the [Q.MENU] button until the AF area setting screen is displayed. AF area can then also be moved by pressing the cursor button toward ▲/▼/◀/▶.
 - You can set to arbitrary position of the screen. (It cannot be set to edge of the screen)
 - The AF area returns to the centre when [] is pressed.
 - When the [FOCUS AREA SET] is set to [Fn BUTTON SET] (P138), AF area setting screen can also be displayed by pressing ▼.
- 2 Touch the slide bar to change the size of AF area frame.**
 - For details on enlarging the AF area frame, read step 2 of "About [] (Face Detection)" procedure on P79.
- 3 Touch [SET].**

■ Move the AF area easily with button operations

When the [DIRECT FOCUS AREA] (P140) in the [CUSTOM] menu is set to [ON] while [], [] or [] is selected, it is possible to move the AF area directly with ▲/▼/◀/▶. It is also possible to change the size of the AF area frame by rotating the rear dial in the screen to set the position for [] or [].

- [SENSITIVITY] (P91), [Fn BUTTON SET] (P138), [FILM MODE] (P93), or [WHITE BALANCE] (P87) cannot be set with ▲/▼/◀/▶. Make the setting with the Quick Menu (P33).

Note

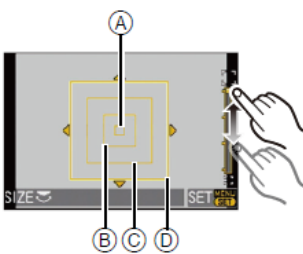
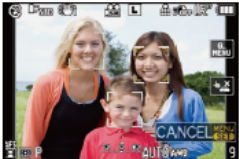
- The spot metering target can also be moved to match the AF area when using []. (P130)
- Set the size of AF area to "normal", "large", or "extra large" when it is hard to focus using the "spot".
- [DIRECT FOCUS AREA] is fixed to [OFF] in My Colour Mode.



Similar disclosures are taught for “Face Detection” mode, in which “[t]he focus and exposure can then be adjusted to fit that face no matter what portion of the picture it is in.” EX1008, 78; EX1002, ¶135. In Face Detection mode, *Panasonic* teaches that “AF area can be moved when [Face Detection] is selected,” and describes how a user may select an area for auto focusing by touching a subject to move the AF area, as shown in the page below. EX1008, 80; EX1002, ¶135.

AF area can be moved when [Q.MENU] is selected. The size of AF area can also be changed.

- 1 Touch the subject.**
 - AF area setting screen is displayed.
 - Press and hold the [Q.MENU] button until the AF area setting screen is displayed. AF area can then also be moved by pressing the cursor button toward ▲/▼/◀/▶.
 - The AF area can be set freely at a position on the screen. (It cannot be set to edge of the screen)
 - The AF area returns to the centre when [Q.MENU] is pressed.
 - When the [FOCUS AREA SET] is set to [Fn BUTTON SET] (P138), AF area setting screen can also be displayed by pressing ▼.
- 2 Touch the slide bar to change the size of AF area frame.**
 - It can be changed to 4 different sizes of “spot” (A), “normal” (B), “large” (C), and “extra large” (D).
 - It is also possible to rotate the rear dial to the right to make it larger. Rotate it to the left to make it smaller.
- 3 Touch [SET].**
 - AF area with same function as [Q.MENU] is displayed in the touched position, with the face recognition frame still displayed.
 - AF area will turn yellow, and face recognition frame will turn white.
 - Setting of the AF area frame is cancelled when [CANCEL] is touched.

Both pages above include figures adjacent to the text describing the “AF area”, the figures illustrating the touch screen displaying a preview image with a yellow box overlaid on the image. EX1008, 82, 80; EX1002, ¶136. Based on the placement of these figures next to text aimed solely at describing an AF area and how it can be moved, a POSITA would have understood the yellow box to be the AF area frame displayed on the image. EX1002, ¶136.

Both figures include a cartoon illustration of a human finger positioned such that the tip of the finger is overlaid directly on the face of the subject framed in the AF area frame. EX1008, 82, 80; EX1002, ¶¶135-136. Both figures are adjacent to text describing how a user may move the AF area frame, and AF area indicted by

the frame, by touching the image and, when viewed in this context, a POSITA would have understood that the finger illustrates touching a point on the preview image to display the AF area frame at that point. *Id.* Thus, *Panasonic* teaches displaying an AFG on the preview image, and teaches that in at least two various auto focusing modes, the AFG can be moved to be displayed at a point touched by a user.⁶ *Id.*

g. Element 1f

Panasonic discloses several auto focusing modes that allow a user “to set the focus and exposure to the subject specified on the touch panel.” EX1008, 78; EX1002, ¶137. When discussing the “1-area-focusing” auto focusing mode,

⁶ PO acknowledged *Panasonic* discloses this limitation in related proceedings. In the ITC investigation relating to the ’654 patent, PO’s expert agreed *Panasonic* shows an AFG at the specific point the user touched, and specifically in response to a first touch input. EX1023, 909:1-17 (“Q. And it shows an auto focus guide at the specific point that the user touched, correct? A. That’s correct. Q. And the auto focus guide appears in response to a first touch, correct? A. That is correct.”) In the ITC, the full product was at issue.

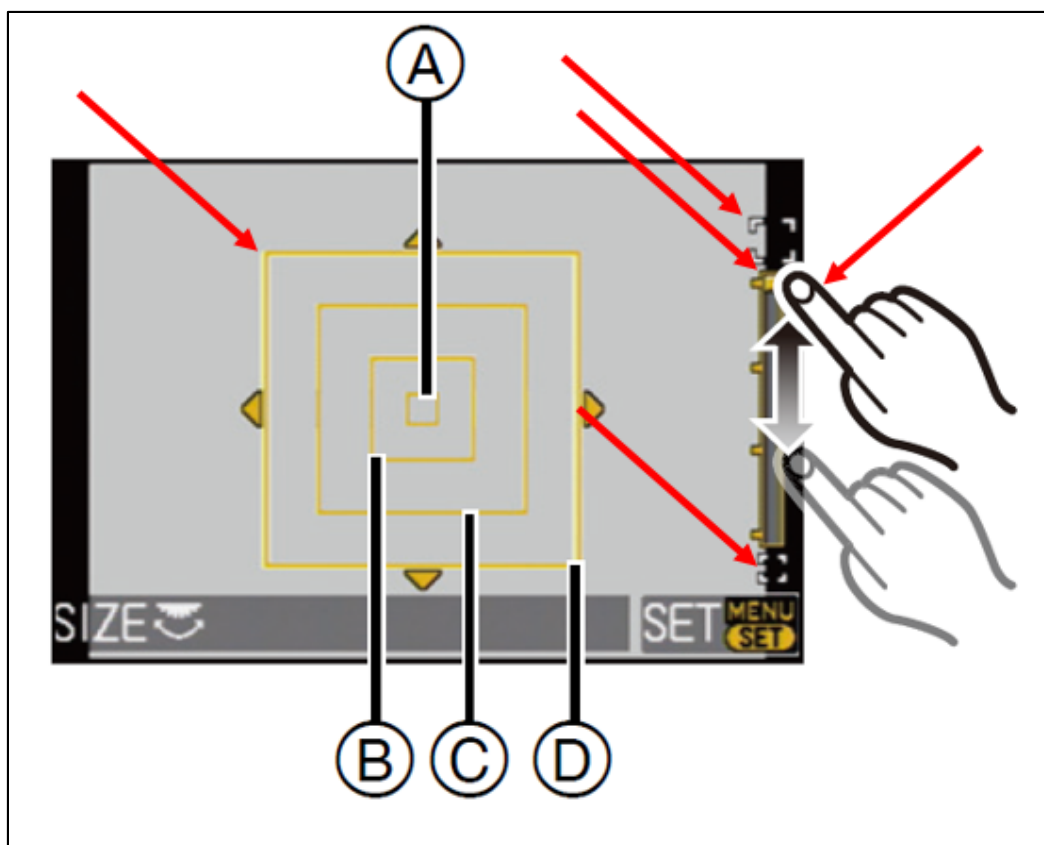
Panasonic discloses its digital camera “focuses on the subject in the AF area on the screen.” *Id.* *Panasonic* discloses the image is focused within the AFG displayed on the screen. *Id.* Thus, *Panasonic* teaches focusing the preview images based on a location of the AFG.

h. Element 1g

Panasonic discloses how a user may determine an area for auto focusing by dragging a slide bar displayed on the touch screen. EX1008, 80; EX1002, ¶138. For both auto focusing modes of “1-area-focusing” and “Face Detection”, *Panasonic* discloses figures that include, on the right sides of the screens, identical vertical rectangles filled with a gray color and outlined in a yellow color. EX1008, 82, 80; EX1002, ¶138. The screens also include identical white dashed-line boxes above the vertical rectangles. EX1008, 82, 80; EX1002, ¶139. As shown in a figure illustrating operating Face Detection mode, the screen also includes a second white dashed-line box below the vertical rectangle, which is relatively smaller than the first white dashed-line box. EX1008, 80; EX1002, ¶¶140-142. The screen includes a solid yellow square inside the vertical rectangle. *Id.* This figure, displaying a preview image of three subjects on the touch screen, is below with annotations. *Id.*



Directly below that figure, *Panasonic* discloses a second figure (below), illustrating a human finger dragging the yellow square up or down within the vertical rectangle. EX1008, 80; EX1002, ¶141. Four boxes labelled (A), (B), (C), and (D) are shown on the screen. EX1008, 80; EX1002, ¶142.

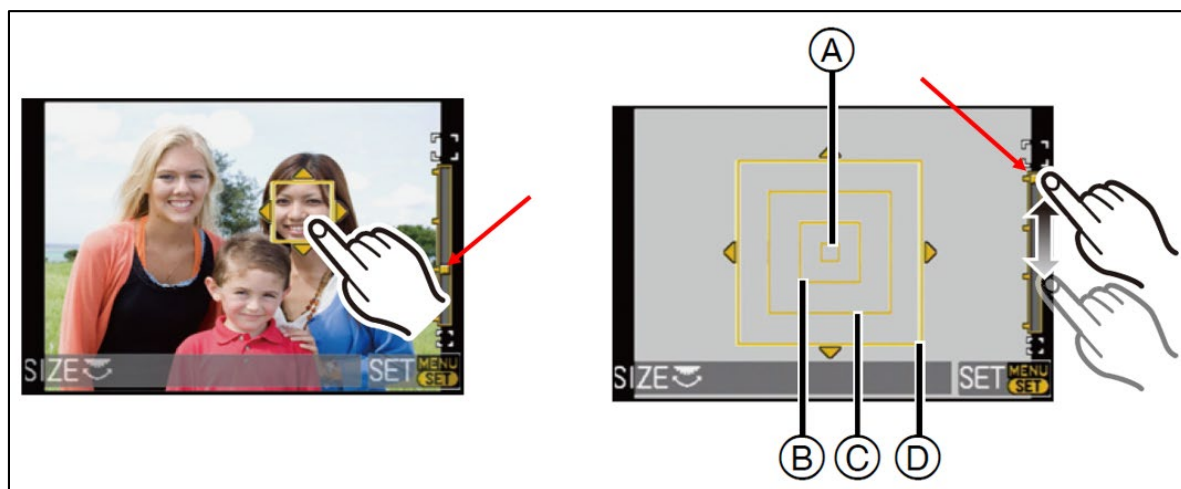


In text directly adjacent to this figure (below), *Panasonic* discloses the size of the auto focus frame “can be changed to 4 different sizes of ‘spot’ (A), ‘normal’ (B), ‘large’ (C), and ‘extra large’ (D).” EX1008, 80; EX1002, ¶142. Thus, a POSITA would have understood the four labelled boxes are AF areas corresponding to four *sizes* of the AF area, defined as (A), (B), (C), and (D) in the adjacent text. EX1008, 80; EX1002, ¶¶142-143.

Touch the slide bar to change the size of AF area frame.

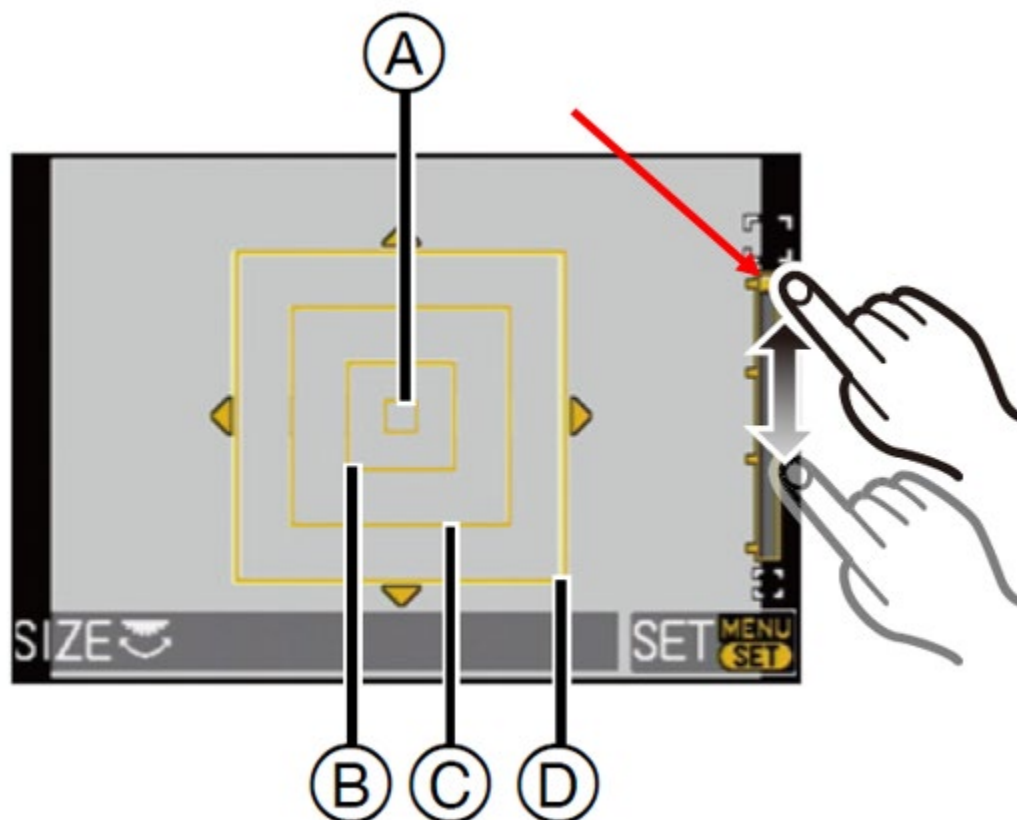
- It can be changed to 4 different sizes of “spot” (A), “normal” (B), “large” (C), and “extra large” (D).
- It is also possible to rotate the rear dial to the right to make it larger. Rotate it to the left to make it smaller.

To change the size of the AF area to one of these exemplary sizes, *Panasonic* discloses the user may “[t]ouch the slide bar to change the size of the AF area.” EX1008, 80; EX1002, ¶144. Both the first and second figures (below with annotation) include the solid yellow square inside the gray vertical rectangle, but the position of the yellow square has changed. *Id.*



Based on these figures, a POSITA would have understood the position of the solid yellow square can be moved inside the vertical rectangle, and it could only move up and down within the vertical rectangle. EX1008, 80; EX1002, ¶145. Because *Panasonic* directs the user to “[t]ouch the slide bar,” a POSITA would have understood “the slide bar” to refer to a bar-shaped object that can be moved in a “sliding”, linear motion, which is satisfied by the solid yellow square. *Id.*

Panasonic discloses dragging the slide bar. EX1002, ¶146. As illustrated in the figure below annotation, the slide bar is positioned at the top of the vertical rectangle. *Id.*



The illustration of a finger, drawn in solid-black lines, is positioned so the tip of the finger is over the slide bar. EX1008, 80; EX1002, ¶146. Another illustration of a finger, drawn in faded-color lines, is positioned so the tip of the finger is at a lower position in the vertical. *Id.* A double-sided arrow between the two fingers indicates movement in both linear directions from the position of one

finger to the other. *Id.* A POSITA would have understood this arrangement to illustrate movement of the finger from one position to the other. *Id.*

Near the solid-black finger, the double-sided arrow is solid black, but its color fades as it approaches the faded-color finger. EX1008, 80; EX1002, ¶146. A POSITA would have understood the faded-color finger to represent a previous position of the finger, and the solid-black finger to represent a current position of the finger, indicating the finger has moved from the lower position to the higher position. *Id.* Because the current position of the finger is overlaid on the slide bar, a POSITA would have understood this schema to illustrate a finger which has touched and dragged the slide bar to its current position at the top of the vertical rectangle.⁷ *Id.* Viewing the above figure in context, a POSITA would have

⁷ This understanding is supported by a video published online on March 7, 2010 at YouTube.com by PanasonicUK, to demonstrate use of a DMC-G2 digital camera, *available at* https://www.youtube.com/watch?v=01q7gr2_TQQ. At time 1 minute, 3 seconds to 1 minute, 14 seconds, the video shows a user touching the slide bar on the right side of the screen and dragging the slide bar upwards to increase the size of the AF area on the screen, all while the preview image is shown simultaneously on the screen.

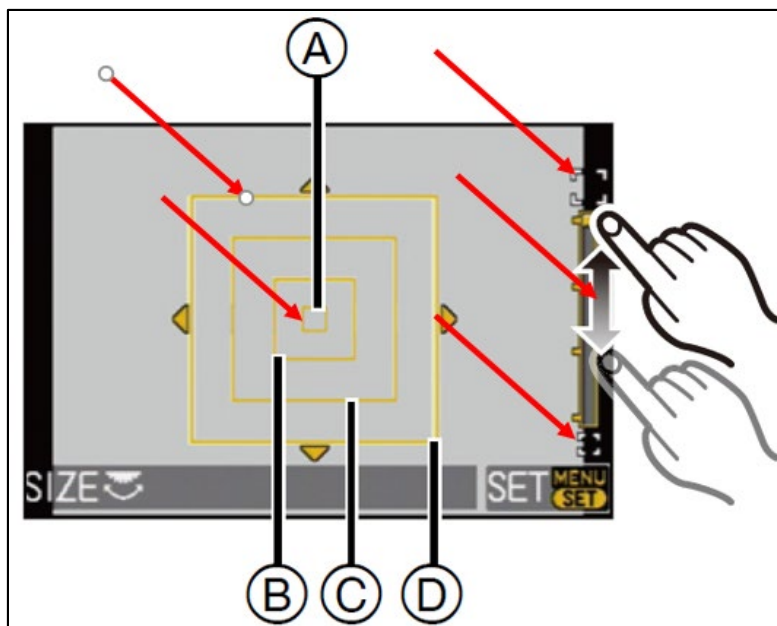
understood that the position to which the slide bar has been dragged determines the size of the AF area. EX1002, ¶146. A POSITA would have understood the size of the AF area as determining an area to be focused in the captured image, and therefore, the size of the AF area is an image capturing setting. *Id.*, ¶147.

Panasonic discloses other image capture settings, such as color, brightness, shutter speed, and aperture value, and displaying a slide bars for these settings, as shown in the figures below. EX1008, 107, 98, 94-96; EX1002, ¶148.



Thus, *Panasonic* discloses determining an image capturing setting of the camera responsive to dragging an object (e.g., a finger) along the slide bars displayed on the touch screen. EX1002, ¶148. *Panasonic* discloses “wherein the value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction.” EX1002, ¶149.

As illustrated in the figure below with annotations, the slide bar is dragged in a linear direction along the vertical rectangle. EX1008, 80; EX1002, ¶149. As set forth above, the position of the slide bar is associated with the size of the AF area. *Id.* Above the vertical rectangle is a white dashed-line frame, and below the vertical rectangle is a relatively smaller white dashed-line frame. *Id.* As set forth above, the figure illustrates the slide bar can be moved in opposite linear directions as indicated by the double-sided arrow. *Id.* Thus, a POSITA would have understood the position of the slide bar determines the size of the AF area, that the slide bar can be dragged in two, bilateral directions. EX1002, ¶149. A POSITA would view the white dashed-line frames above and below the vertical rectangle as indicating relatively larger and relatively smaller sizes of the AF area. EX1008, 80; EX1002, ¶150.



Thus, *Panasonic* discloses dragging a slide bar in an upward direction to increase the size of the AF area, and dragging the slide bar in a downward direction to decrease the size of the AF area.⁸ EX1002, ¶150. *Panasonic* also

⁸ This understanding is supported by a video published online on March 7, 2010 at YouTube.com by PanasonicUK, to demonstrate use of a DMC-G2 digital camera, available at https://www.youtube.com/watch?v=01q7gr2_TQQ. At time 1:03 – 1:14, the video shows a user touching the slide bar on the right side of the screen and dragging the slide bar upwards to increase the size of the AF area on the screen, all while the preview image is shown simultaneously on the screen.

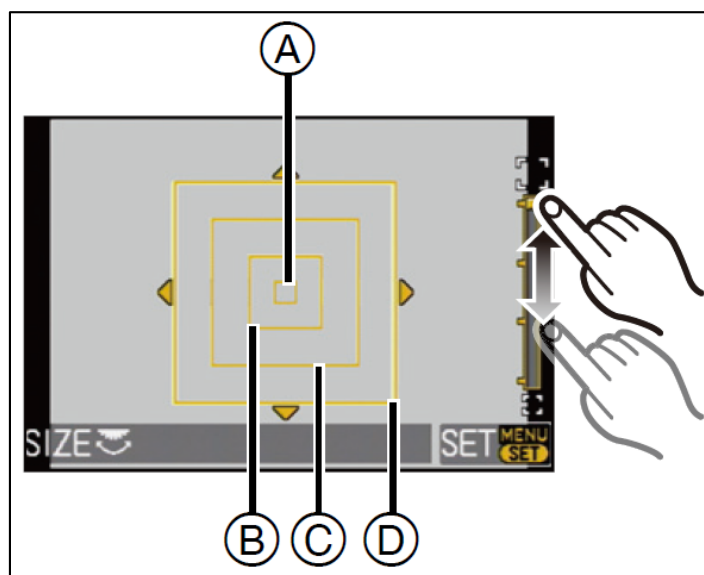
discloses by dragging an object in opposite directions along the respective slide bars, brightness, saturation, and color can be increased or decreased between values of -5 to +5, *id.*, 107, and shutter speed and aperture value can be adjusted between values of 60 seconds to 1/4000th of a second, *id.*, 206, and F3.5 to F5.6, *id.*, 209, respectively.

i. Element 1h

Panasonic discloses controlling the touch screen to display the indicator for the current image capturing setting while maintaining the displayed AFG at the specific point. In the figure below, the AF area remains centered at the same point even as the size of the AF area changes. EX1008, 80; EX1002, ¶151. Because the position of the slide bar within the vertical rectangle indicates the size of the AF area, a POSITA would have understood the displayed position of the slide bar to indicate the current size of the AF area. *Id.* Additionally, even though not required,

PO acknowledged that that *Panasonic* discloses this limitation in the ITC investigation relating to the '654 patent. EX1023, 912:21-913:1 (“[*Panasonic*] show[s] that the user can drag their finger up and down the slide bar to change the size of the focus area, correct? A. Correct.”).

it discloses changing the AF area while maintaining the AFG centered at the same specific point, thus teaching the claim language even under PO's interpretation.⁹ It would have been obvious to a POSITA to use the displayed slide bar to adjust other settings, such as brightness which *Panasonic* teaches is also adjusted using a slide bar, which would have no effect on the size of the displayed AFG.



⁹ In the related ITC proceeding, PO has previously taken the position that the size of the AFG must stay the same while the image capturing setting is changed. This is not required by the claim language and is inconsistent with the intrinsic record wherein the PO explained maintaining the AFG at the specific point was added to the claim language to distinguish moving the location of the AFG to different points.

Panasonic discloses indicating other image capture settings: color, brightness, saturation, shutter speed, and aperture value, while the AFG is maintained at the specific point. EX1008, 107, 98; EX1002, ¶152. As an example, and as shown in the images below, *Panasonic* teaches that numerical indicators are displayed to indicate the current shutter speed and aperture value settings and symbolic indicators are displayed for indicating the current color, brightness, and saturation settings while the AFG is maintained at the specific point. EX1002, ¶153.

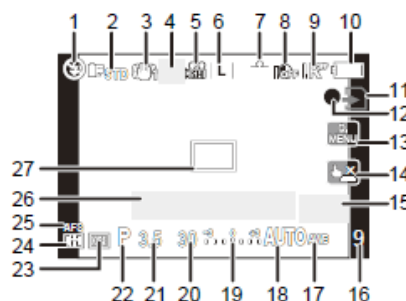
LCD Monitor Display/Viewfinder Display

• The following images are examples of when the display screen is set to [LCD] (LCD monitor style) in the LCD monitor.

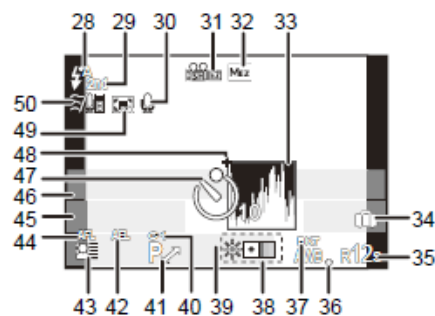
■ In recording

Recording in Program AE Mode [P] (Initial setting)

- 1 Flash Mode (P66)
- 2 Film Mode (P91)
- 3 Optical Image Stabilizer (P129)/[O.I.S.]: Jitter alert (P53)
- 4 [S]: Single*1 (P51)
[B]: Burst (P73)
[A.B.]: Auto Bracket (P75)
[S.T.]: Self-timer (P77)
- 5 REC MODE (when recording motion pictures) (P113)/Recording quality (P113)
- 6 Picture size (P126)
- 7 Quality (P127)
- 8 Intelligent Exposure (P131)
- 9 Intelligent Resolution (P130)
- 10 Battery indication (P25)
- 11 Card (P29) (displayed only during recording)
- 12 Recording state (Flashes red.)
Focus (P53) (Lights green.)
- 13 Touch Quick Menu*2 (P33)
- 14 Touch Shutter*2 (P54)
- 15 Dial operation guide (P142)/
Elapsed recording time (P111)
- 16 Number of recordable pictures*3 (P201)
- 17 White Balance (P86)
- 18 ISO sensitivity (P89)
- 19 Exposure compensation value (P72)/Manual Exposure Assistance (P95)
- 20 Shutter speed (P53)
- 21 Aperture value (P53)
- 22 Recording Mode (P43)
- 23 Metering mode (P128)
- 24 AF Mode (P78)
- 25 Focus Mode (P52)
- 26 Exposure Meter (P139)
- 27 AF area (P53, 78)



- 28 Flash output adjustment (P70)
- 29 2nd curtain synchro (P71)
- 30 Audio recording (P134)
- 31 Extended Optical Zoom (when recording motion pictures) (P55, 132)
- 32 Extended Optical Zoom (when taking still pictures) (P55, 132)
- 33 Histogram (P65)
- 34 Travel date (P123)
AF tracking operation (P48, 81)
- 35 Available recording time*3 (P111): R8m30s
- 36 White Balance Fine Adjustment (P88)
- 37 White Balance Bracket (P89)
- 38 My Color Mode adjustment (P106)



Thus, *Panasonic* discloses controlling the touch screen to display indicators for indicating current image capturing settings while maintaining the displayed AF guide at the specific point. EX1002, ¶154.¹⁰

j. Element 1i

Panasonic discloses capturing an image according to the current image setting. As discussed above, *Panasonic* discloses a digital camera capable of taking pictures. EX1008, 1, 40; EX1002, ¶198. As another example, *Panasonic* directs a user, after selecting the AF area, to “[t]ouch [SET],” and discloses that the “[s]etting of the AF area is cancelled when [CANCEL] is touched.” EX1008, 80; EX1002, ¶155. A POSITA would have understood that by “setting” the size of the AF area, the size of the AF area will be maintained. EX1002, ¶155. Thus, *Panasonic* discloses capturing an image according to the current size of the AF area. *Id.* Similarly, *Panasonic* discloses capturing images according to brightness, color, saturation, shutter speed, and aperture value. For example, *Panasonic* likewise directs the user to “[t]ouch set” to confirm these settings and describes

¹⁰ Under the correct interpretation of the claim language, PO has admitted that *Panasonic* discloses the elements of this limitation. EX1023, 913:2-5, 921:18-922:1, 923:20-25, 924:17-925:2.

that these settings can be adjusted to achieve desired effects in an image. *See* Ex. 1008, 94-96, 107.

2. Claim 3

Panasonic discloses that an “AF area setting screen is displayed” after directing the user to “[t]ouch the subject” in an image on the screen. EX1008, 80; EX1002, ¶156. As set forth above, the figure directly adjacent to this text illustrates the AF area setting screen. *Id.* This figure displays, as the AF area setting, the AF area and the slide bar as discussed above. *Id.* Thus, a POSITA would have understood that the slide bar is displayed as part of the AF area setting screen, along with the AF area, in response to a user’s single touch. *Id.* Therefore, *Panasonic* discloses the slide bar for indicating the current the size of the AF area is displayed in response to the first touch input.¹¹ EX1002, ¶156.

¹¹ This understanding is supported by a video published online on March 7, 2010 at YouTube.com by PanasonicUK, to demonstrate use of a DMC-G2 digital camera, *available at* https://www.youtube.com/watch?v=01q7gr2_TQQ. At time 1:03 – 1:14, the video shows that in response to a user touching screen displaying a preview image, the slide bar is displayed along with the yellow AF area.

3. Claim 9

Panasonic discloses a slide bar that can be dragged to different positions in a vertical or horizontal rectangle to determine the image capturing settings discussed above. EX1008, 80, 94-96, 107; EX1002, ¶157. A POSITA would have understood up/down and right/left, to be opposite directions along the touch screen. EX1002, ¶157. Thus, *Panasonic* discloses the first direction and the second direction are opposite direction along the touch screen.

4. Claim 10

Panasonic discloses that the size of its AF area can be changed based on dragging the slide bar up or down the vertical rectangle. *Panasonic* discloses four sizes of AF area, from “spot” to “extra large,” and demonstrates via a figure that “extra large” is relatively larger than “spot.” EX1008, 80; EX1002, ¶158. As set forth above, *Panasonic* discloses that dragging the slide bar along the vertical rectangle changes the size of the AF area. *Id.* A POSITA would have understood that the extent to which the size of the AF area is changed corresponds to the extent to which the slide bar is dragged within the vertical rectangle. EX1002, ¶158. Thus, *Panasonic* discloses the value of the image capturing setting is changed based on a distance the slide bar is dragged along the touch screen.

Similarly, *Panasonic* discloses that the values of the brightness, saturation, color, shutter speed, and aperture value can be determined by dragging along slide

bars displayed on the touch screen. For example, *Panasonic* discloses that brightness, saturation, and color can be adjusted between values of -5 to +5, *id.*, 107, and that shutter speed and aperture value can be adjusted between values of 60 seconds to 1/4000th of a second, *id.*, 206, and F3.5 to F5.6, *id.*, 209, respectively. A POSITA would have understood that the extent to which these settings are adjusted between these ranges corresponds to the extent to which (i.e., the distance) the respective slide bars are dragged. EX1002, ¶158.

5. Claim 15

Panasonic discloses that the size of the AF area is increased when the slide bar is dragged in a first direction and decreased when the slide bar is dragged in a second direction. EX1008, 80; EX1002, ¶159. Because the width of the slide bar is the same as the width of the vertical rectangle, the slide bar can only move in a direction parallel to the left and right sides of the vertical rectangle, and perpendicular to the top and bottom sides of the vertical rectangle – in other words, the slide bar can only move up and down the vertical rectangle. *Id.* A POSITA would have understood the dragging of the slide bar along a linear axis to be dragging along a line. EX1002, ¶159. Thus, *Panasonic* discloses that the controller is configured to increase the value of the size of the AF area when the slide bar is dragged in the first, upward direction along a line, and to decrease the value of the size of the AF area when the slide bar is dragged in the second, downward

direction. EX1002, ¶159.

Similarly, *Panasonic* discloses that brightness, color, saturation, shutter speed and aperture value can be determined by dragging an object along linear, horizontal slide bars displayed on the touch screen. Ex. 1008, 94-96, 107. Thus, *Panasonic* discloses that the controller is configured to increase the value of these image capture setting when an object is dragged in the first direction along a line, e.g. rightward on a horizontal linear axis of the horizontal rectangle, and to decrease the value of the image capture setting when the object is dragged in the second direction along the line, e.g. leftward on the horizontal linear axis of the horizontal rectangle.

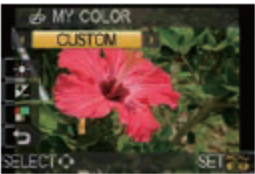
6. Claim 16

Panasonic discloses “you can take pictures with colour, brightness and saturation adjusted to desired levels.” EX1008, 107; EX1002, ¶160. At page 107, below, *Panasonic* directs a user in “Custom” mode to “[t]ouch the item” in the preview image desired to be determined using a slide bar, said items including color, brightness, and saturation, which may affect the brightness of objects in the image to be captured. *Id.*

Adjusting the custom settings to achieve desired effects

By selecting [CUSTOM], you can take pictures with color, brightness and saturation adjusted to desired levels.

- 1** Touch [◀]/[▶] to select [CUSTOM].
- 2** Touch the item.



Item	Adjustment contents
 [COLOR]	This will adjust the color of the image from red light to blue light. (11 steps in ± 5)
 [BRIGHTNESS]	This will adjust the brightness of the image. (11 steps in ± 5)
 [SATURATION]	This will adjust the color intensity of the image from black and white to vivid color. (11 steps in ± 5)
 [RESET]	Return all settings to default

- 3** Touch the slide bar.
- 4** Touch [SET].
 - You can also press the shutter button halfway to set.
 - Recording screen is displayed.



■ Return [CUSTOM] settings to default

- 1** Select [RESET] in above step 2.
- 2** Touch [YES].
 - Adjusted value for each item returns to standard (center point).

Note

- Adjustments made with [CUSTOM] are not in effect in other Recording Modes.
- Icons for the adjusted items are displayed in the screen when the [CUSTOM] are adjusted. Displayed icon is the one for direction of adjustment.
- AF tracking may not function if you adjust [SATURATION] to make the color lighter.

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VQT2S30 **107**

At pages 94-96, *Panasonic* discloses slide bars to adjust aperture value/shutter speed while in touch operation. EX1008, 94-96; EX1002, ¶153.



For example, as shown in figure above, *Panasonic* discloses a slide bar labeled “SS” for shutter speed displayed on the preview image, which can be dragged in opposite directions along a line to determine the shutter speed, which may affect the brightness of the captured image. EX1008, 107; EX1002, ¶194. Thus, a POSITA would have understood that *Panasonic* discloses all of the elements of claim 16 with respect to the image capturing setting being brightness, as well as various other settings which may be said to affect brightness, such as color, shutter speed, and aperture value. EX1002, ¶194.

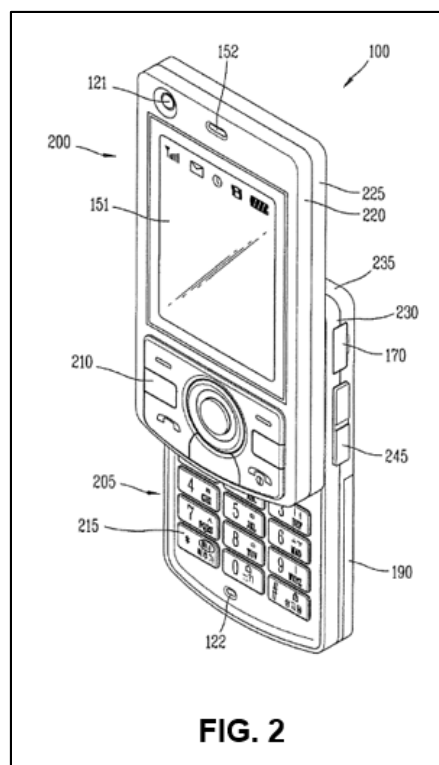
C. Ground 3: *Kim* in view of *Panasonic* renders claims 1, 3, 9, 10, 15, and 16 unpatentable.

Panasonic alone discloses or renders obvious each and every element of the challenged claims for at least the reasons stated above. The challenged claims are also obvious in view of *Panasonic* and *Kim*. *Kim* and *Panasonic* disclose each and every element of claim 1.

1. Claim 1

a. Preamble

The preamble is not limiting, and PO has not disputed this in related proceedings. *Kim* discloses “[a] portable terminal may be configured to perform a variety of functions. Examples of such functions may include data/voice communications, capturing images or videos via a camera, recording audio, playing music files via a speaker system, and displaying images or videos.” EX1007, ¶[0005]; EX1002, ¶163. *Kim* discloses that “[a]mong the various functions of the portable terminal, the function of capturing images or videos via a camera refers to a function that allows a user to capture videos or still images by using an image capture operation using the camera function[.]” EX1007, ¶[0006]; EX1002, ¶163. *Kim* discloses “[e]xamples of such terminals include mobile phones, user equipment, smart phones, notebook computers, digital broadcast receiver terminals, personal digital assistants (PDA), portable multimedia players (PMP) and mobile navigation units.” EX1007, ¶[0036]; EX1002, ¶163. An exemplary portable terminal is illustrated in Figure 2, below.



Thus, a POSITA would have recognized that *Kim* discloses a mobile terminal. EX1007, ¶[0036]; EX1001, 4:3-7; EX1002, ¶¶164-165.

b. Element 1a

Kim discloses that its portable terminal may include “an A/V (Audio/Video) input unit 120.” EX1007, ¶[0037]; EX1002, ¶148. “The A/V input unit 120 is configured to input an audio or video signal. The A/V input unit 120 may include a camera 121 and a microphone 122. The camera 121 processes image frames of still pictures or videos obtained by an image capture device in a video call mode or an image-capturing mode.” EX1007, ¶[0049]; EX1002, ¶¶166-167.

c. Element 1b

Kim discloses “a portable terminal, including: a touch screen for displaying a preview image to be captured.” EX1007, ¶[0013]; EX1002, ¶168. *Kim* discloses “[a] touch pad may be overlaid in a layered manner on the screen of the display module 151 to allow the display module 151 to function as a touch screen to enable the inputting of information by a user’s touch.” EX1007, ¶[0076]; EX1002, ¶168. *Kim* discloses “the user input units can be implemented with a dome switch or touch pad that can receive user commands or information according to a user’s pressing, pushing or touching.” EX1007, ¶[0082]; EX1002, ¶168. A POSITA would have understood that a touch screen is capable of displaying an image and receiving input from a user’s touch. EX1002, ¶169. Thus, *Kim* discloses a touch screen.

d. Element 1c

Kim discloses that its portable terminal may include “a controller” and states:

The controller 180 typically controls the general operations of the portable terminal. For example, the controller 180 performs controlling and processing associated with voice calls, data communications, video calls, and the like. In addition, the controller 180 may include a multimedia module 181 for reproducing multimedia data. The multimedia module 181 may be implemented integrally within the

controller 180 or by software executed therein, or may be configured separately from the controller 180.

EX1007, ¶[0063]; EX1002, ¶170. *Kim* discloses that “the display module 151 according to one embodiment of the present invention is configured to display information processed in the portable terminal under the control of the controller 180.” EX1007, ¶[0112]; EX1002, ¶170. *Kim* discloses that “[t]he memory 160 may store software programs or the like used for general operation of the portable terminal, and the processing and controlling performed by the controller 180[.]” EX1007, ¶[0114]; EX1002, ¶170. Thus, *Kim* teaches a controller which controls general operations of the portable terminal, including making calls, reproducing multimedia, and displaying information on the display module. EX1007, ¶¶[0037], [0063], [0012], [0014].

Kim also teaches that the controller may be capable of executing software. EX1007, ¶[0063]; EX1002, ¶170. APOSITA would have understood a controller to be a device’s hardware and software capable of controlling operations of other components within the device or other devices, and by executing coded instructions. EX1002, ¶72.

e. Element 1d

Kim discloses that when the portable terminal is in “the image capturing mode, the display module 151 may display a preview image of an object to be

captured by the camera 121 and then displays an image captured by the camera 121, a UI, a GUI, and the like on its screen display.” EX1007, ¶[0112]; EX1002, ¶171. *Kim* discloses that “[i]f the user selects an image-capturing mode in the camera mode, the controller 180 performs a control of the display module 151 such that a preview image of an object to be captured, sensed by an image sensor (not shown), can be displayed on the touch screen (S10).” EX1007, ¶[0141]; EX1002, ¶171. Thus, *Kim* teaches that the controller performs a control of the display module to display, on the touch screen, a preview image of an object to be captured.

Kim discloses that “when the display module 151 and the touch pad are overlaid in a layered manner to form a touch screen, the display module 151 may function as both an input device and an output device.” EX1007, ¶[0058]; EX1002, ¶171. Thus, *Kim* teaches that the controller performs a control of the display module, which forms the touch screen.

f. Element 1e

Kim discloses controlling the touch screen to display an AFG in response to a first touch input to a specific point on the screen. *Kim* discloses an “Auto Focus” function in which “the camera 121 automatically focuses on an object to be captured.” EX1007, ¶[0127]; EX1002, ¶172. *Kim* discloses that “[w]hen the preview image is displayed, the user selects the focus area by touching a point of

the touch screen with his finger.” EX1007, ¶[0142]; EX1002, ¶172. Thus, a POSITA would have understood that the user selects a focus area by touching a point of the touch screen, and the camera automatically focuses on the object to be captured as shown in the focus area displayed on the touch screen. EX1002, ¶172.

The plain claim language does not require that the AFG is not displayed prior to the first touch input on the specific point. Even if this limitation were to be imposed on the claims, to the extent that *Kim* is interpreted as silent regarding said imposed limitation, *Panasonic* discloses this limitation in a device analogous to *Kim*. EX1002, ¶173. Like *Kim*, *Panasonic* discloses a mobile terminal with a touch screen and a camera, capable of taking and displaying pictures. EX1008, 1, 40, 59; EX1002, ¶¶173-176. Also like *Kim*, *Panasonic* discloses displaying a preview image on the touch screen of its device, and displaying an AFG on the preview image at a point touched by the user. EX1008, 78; EX1002, ¶¶173-176. Also like *Kim*, *Panasonic* discloses that the AFG can be moved. EX1008, 80; EX1002, ¶¶173-176. *Kim* and *Panasonic* are analogous. EX1002, ¶¶173-176. As discussed *supra* at Section IX.B.1.f, *Panasonic* discloses controlling the touch screen to display an AFG in response to a first touch input to a specific point on the screen, and discloses displaying the AFG after the user’s touch.

g. Element 1f

Kim discloses automatically focusing the preview image on a selected focus area, which a POSITA would have understood to be an AFG. EX1007, ¶¶[0127], [0142]; EX1002, ¶177.

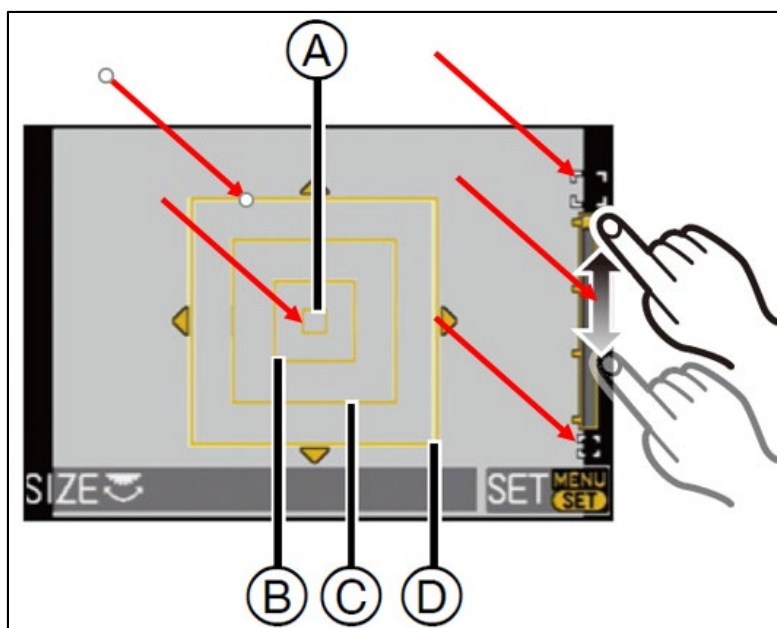
h. Element 1g

Kim and *Panasonic* disclose determining an image capture setting responsive to dragging an object along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction. EX1002, ¶178. As described *supra* in Section IX.B.1.h, *Panasonic* discloses the entirety of this limitation. *See also* EX1002, ¶¶178-179.

A POSITA would have been motivated to add *Panasonic*'s slide bar for image capture settings and AF area to *Kim*'s mobile terminal touch display and auto focus area to streamline the process of adjusting image settings, including focus and other settings, before capturing an image. EX1002, ¶179. They would have had a reasonable expectation of success in doing so, at least because the combination would have used known technologies (for example, the mobile terminal of *Kim* which displays an AFG on a preview image) according to a known method (for example, displaying slide bar indicator to adjust auto focus area and other image settings as in *Panasonic*) to yield predictable results. *Id.* Thus, the

modification of *Panasonic* with *Kim* would have amounted to nothing more than use of a known technique to improve a similar device, and the results of the modification would have been predictable. *Id.*; *See KSR*, 550 U.S. at 417.

To the extent *Kim* is interpreted as not disclosing “wherein the value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction,” *Panasonic* discloses this element. EX1002, ¶¶178-179. As illustrated in the figure below with annotation, the slide bar is dragged in a linear direction along the vertical rectangle. EX1008, 80; EX1002, ¶¶178-179. As set forth above, the position of the slide bar is associated with the size of the AF area. *Id.* Above the vertical rectangle is a white dashed-line frame, and below the vertical rectangle is a relatively smaller white dashed-line frame. *Id.* As set forth above, the figure illustrates the slide bar can be moved in opposite linear directions as indicated by the double-sided arrow. *Id.* Thus, a POSITA would have understood the position of the slide bar determines the size of the AF area, that the slide bar can be dragged in two, bilateral directions. EX1002, ¶¶178-179.



A POSITA would have viewed the white dashed-line frames above and below the vertical rectangle as indicating relatively larger and relatively smaller sizes of the AF area. EX1008, 80; EX1002, ¶150. Thus, *Panasonic* discloses dragging a slide bar in an upward direction to increase the size of the AF area, and dragging the slide bar in a downward direction to decrease the size of the AF area. EX1002, ¶150. Similarly, *Panasonic* discloses determining brightness, color, saturation, shutter speed, and aperture value by dragging an object in opposite directions (e.g., right/left) to increase or decrease the value those settings.

i. Element 1h

Kim and *Panasonic* disclose controlling the touch screen to display an indicator for the current image capturing setting while maintaining the displayed AFG at the specific point. EX1002, ¶¶180-181. As described *supra* in Section

IX.B.1.i, *Panasonic* discloses the entirety of this limitation. *See also* EX1002, ¶¶151-154.

j. Element 1i

Kim discloses capturing an image that has been auto focused as shown in a preview image. EX1007, ¶[0141]. *Kim* and *Panasonic* disclose this element, as *Panasonic* directs a user, after adjusting the AF area, to “[t]ouch [SET],” and discloses the “[s]etting of the AF area is cancelled when [CANCEL] is touched.” EX1008, 80; EX1002, ¶¶182-183. A POSITA would have understood by “setting” the size of the AF area, the size of the AF area will be maintained. *Id.* ¶¶182-183. As set forth above, *Panasonic* discloses capturing an image by taking a picture. *Id.* Thus, *Kim* and *Panasonic* disclose capturing an image according to the current size of the AF area. *Id.*

2. Claim 3

Kim and *Panasonic* teach claim 3. As described *supra* at Section IX.B.2, *Panasonic* discloses claim 3. *See also* EX1002, ¶¶184-185.

3. Claim 9

Kim and *Panasonic* teach claim 9. As described *supra* at Section IX.B.3, *Panasonic* discloses claim 9. *See also* EX1002, ¶¶186-187.

4. Claim 10

Kim and *Panasonic* teach claim 10. As described *supra* at Section IX.B.4, *Panasonic* discloses claim 10. *See also* EX1002, ¶¶188-189.

5. Claim 15

Kim and *Panasonic* teach claim 15. As described *supra* at Section IX.B.5, *Panasonic* discloses claim 15. See also EX1002, ¶¶190-191.

6. Claim 16

Kim and *Panasonic* teach claim 16. As described *supra* at Section IX.B.6, *Panasonic* discloses claim 16. See also EX1002, ¶¶192-193.

X. SECONDARY CONSIDERATIONS

There are no known secondary considerations. Any PO argument regarding teaching away is wrong at least because the subject matter of the challenged claims is disclosed in the prior art and because PO has not criticized or disparaged the art. In any event, the Board, at the institution phase, has repeatedly held evidence of secondary considerations presented by the Patent Owner should be addressed in a trial where the parties may develop, and the Board may consider, a full record. See, e.g., *Tristar Products, Inc. v. Choon's Design, LLC*, IPR2015-01883, Paper 6, 26 (P.T.A.B. Mar. 9, 2016).

XI. ARGUMENTS FOR DISCRETIONARY DENIAL SHOULD BE REJECTED

A. Section 325(d) is inapplicable because the asserted art was never evaluated during examination.

The Board should not deny institution under §325(d) because the art asserted here was not before the Examiner and is not cumulative of art that was. As set forth

below, the Examiner either (1) was not presented with the same or substantially the same art or arguments as Petitioner's, or (2) materially erred in allowing the challenged claims. *See Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6 at 8 (P.T.A.B. Feb. 13, 2020) (citing *Becton, Dickinson, & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (P.T.A.B. Dec. 15, 2017)).

Advanced Bionics Analysis Step 1 (Becton, Dickinson Factors (a), (b), (c) and (d)). Neither “the same [nor] substantially the same” art or arguments were previously presented to the Office during prosecution of the challenged claims. *Advanced Bionics*, IPR2019-01469, Paper 6 at 8. *Park* and *Panasonic* were never cited during prosecution of the '654 patent, let alone considered by the Examiner or made the subject of a rejection. *See generally* EX1003. These references are also not substantially the same or cumulative of references considered during examination. During examination, the pending claims were rejected solely for non-statutory double patenting. No prior art rejections were made.

Advanced Bionics Analysis Step 2 (Becton, Dickinson Factors (e) and (f)). As explained above, the answer to the first inquiry of *Advanced Bionics*—whether the same or substantially the same art or arguments were previously presented to the Office—is a definitive “no.” Accordingly, analysis of Examiner error is unnecessary. Nevertheless, to the extent the Board determines the

Advanced Bionics Analysis Step 1 does not favor institution, discretionary denial still is not warranted because the Examiner must have necessarily overlooked anticipatory disclosures of the art examined, constituting material error. *See Advanced Bionics*, IPR2019-01469, Paper 6, 10 (listing silence as evidence of error). As stated above in detail, *Park* in view of *Kim*, *Panasonic*, and *Kim* in view of *Panasonic*, teach or suggest every element of the challenged claims. To the extent any examined reference could be considered cumulative of *Park*, *Kim*, and *Panasonic*, the Examiner should have rejected the challenged claims as anticipated and/or obvious under sections 102/103, and maintained the rejections.

Accordingly, the Board should reach the merits of this petition, and institute review of all challenged claims, especially in light of the accompanying expert testimony which was not before the Office during prosecution.

B. Institution is proper under Section 314(a) and *Fintiv*

The merits of this Petition are strong, which alone requires institution. On 06/21/2022, Director Vidal issued an interim procedure regarding application of the *Fintiv* factors clarifying “the PTAB will not deny institution...under *Fintiv*...when a petition presents compelling evidence of unpatentability.” Director Vidal, Memorandum, “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation,” 9 (June 21, 2022). Here, each ground in the Petition presents compelling evidence of unpatentability for the

reasons detailed above. For example, Ground 1 is an obviousness-ground explaining how *Park* and *Kim* disclose each and every limitation of all of the challenged claims. Each of the other grounds is directed to all of the challenged claims. This evidence, “if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable,” (*Id.*, 4), and accordingly the Board must decline to exercise its discretion under § 314(a). *Id.*; *PopSockets LLC v. Flygrip, Inc.*, IPR2022-00938, Paper 8 (P.T.A.B. Nov. 1, 2022).

The *Fintiv* framework favors institution of IPR. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (P.T.A.B. Mar. 20, 2020). Each of the *Fintiv* factors either weighs against discretionary denial or is at least neutral. The Board therefore should institute IPR.

Factor 1 favors institution. The District Court has not yet scheduled a date for trial, or even for claim construction. Instead, the proceedings have been stayed since 2/4/2024, and are expected to remain so until at least 3/19/2025. A further stay is possible.

Factor 2 favors institution, or at most is neutral. As stated, the District Court has stayed the proceeding, and the stay is expected to continue at least until 3/2025. At this time, there is no indication the District Court will begin trial prior to the Board’s projected statutory deadline for a Final Written Decision. Thus, proximity of the court’s trial date to the date of the Board’s Written Decision is

speculative, and the trial date is likely to be after the Board’s decision. Simply put, currently almost the entirety of the litigation lies ahead. Accordingly, this factor favors institution, or at most is neutral. *Halliburton Energy Servs., Inc. v. U.S. Well Servs., LLC*, IPR2021-01037, Paper 12 at 10 (P.T.A.B. Jan. 19, 2022) (“district court trial dates are often delayed by several months”). *Micron Tech., Inc. v. Godo Kaisha IP Bridge 1*, IPR2020-01008, Paper 10 at 14 (P.T.A.B. Dec. 7, 2020) (“due to the uncertainty as to this trial date, this factor is, at most, neutral to whether we should exercise our discretion”); *Google LLC et al. v. Parus Holdings, Inc.*, IPR2020-00846, Paper 9 at 12-14 (P.T.A.B. Oct. 21, 2020) (“where...there is at least some persuasive evidence that delays are possible...this factor is, at best, neutral”).

Factor 3 favors institution. As stated, the District Court has stayed the proceeding, has not scheduled a trial date, and has not scheduled a date for claim construction. The District Court has not issued any substantive orders. Also as stated, almost the entire litigation lies ahead. To date, the District Court has invested nominal resources in the dispute. *See, e.g., Hulu LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 13 (P.T.A.B. May 19, 2021).

Factor 4 favors institution. Only a subset of the challenged claims is being asserted (and at issue) in the co-pending litigation. There is very little overlap

between the issues in the IPR and the litigation, and thus the Board's efforts would not be duplicative.

Factor 5 is neutral. Little weight is afforded to the fact Petitioner and PO are also parties in the co-pending litigation. *Weatherford U.S., L.P., v. Enventure Global Tech., Inc.*, IPR2020-01684, Paper 16 at 11-13 (P.T.A.B. Apr. 14, 2021).

Factor 6—As discussed in detail above, every element of the Challenged Claims of the '654 patent is either expressly shown in the prior art or obvious in view of well-known art, as established by each of the three grounds in this Petition. The strong merits of the grounds presented in this Petition support institution. *Fintiv*, Paper 11 at 14–15.

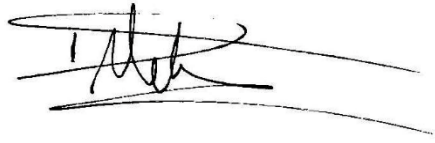
XII. PRESERVATION OF RIGHTS

Petitioner reserves all rights to any benefit of changes resulting from challenges based on the recent Supreme Court decision in *Loper Bright. Loper Bright Enters. v. Raimondo*, 144 S.Ct. 2244, 2272-73 (2024).

XIII. CONCLUSION

For the reasons above, Petitioner requests institution of IPR of the challenged claims based on all grounds.

Respectfully submitted,



Dated: October 11, 2024

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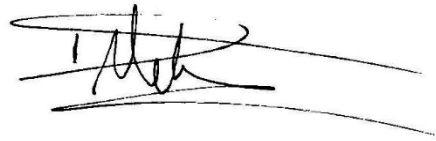
Attorneys for Petitioner
LENOVO (UNITED STATES) INC.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,972,654 B2 contains, as measured by the word-processing system used to prepare this paper, 13,930 words. This word count does not include the items excluded by 37 C.F.R. § 42.24 as not counting towards the word limit.

Dated: October 11, 2024

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. Melwani', is written over a horizontal line.

By: _____
Dinesh N. Melwani (Reg. No. 60,670)
Attorney for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105(a), I hereby certify that on October 11, 2024, I caused a true and correct copy of the foregoing “PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,972,654 B2” and supporting exhibits to be served via Federal Express on the Patent Owner at the following correspondence address of record as listed on PAIR:

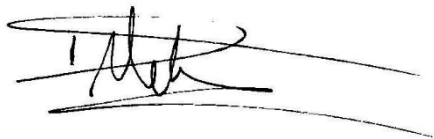
Sage Patent Group/Telefonaktiebolaget LM Ericsson
P.O. BOX 30789
RALEIGH, NC 27622-0789
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Courtesy copies were also served on Patent Owner’s counsel of record in Civil Action No. 5:23-cv-570 in the Eastern District of North Carolina:

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Dated: October 11, 2024

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Dinesh N. Melwani', with a horizontal line drawn underneath it.

By: _____
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