

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.
Petitioner

v.

Chian Chiu Li
Patent Owner

Case No. IPR2023-00560
U.S. Patent No. 11,016,564

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,016,564**

TABLE OF CONTENTS

I. INTRODUCTION.....	1
II. SUMMARY OF THE '564 PATENT.....	1
A. DESCRIPTION OF THE ALLEGED INVENTION OF THE '564 PATENT.....	1
B. PROSECUTION HISTORY OF THE '564 PATENT	3
C. LEVEL OF SKILL OF A PERSON HAVING ORDINARY SKILL IN THE ART	3
III. REQUIREMENTS FOR INTER PARTES REVIEW UNDER 37 C.F.R.	
§ 42.104.....	4
A. GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.104(A)	4
B. IDENTIFICATION OF CHALLENGE UNDER 37 C.F.R. § 42.104(B) AND RELIEF REQUESTED.....	4
C. CLAIM CONSTRUCTION UNDER 37 C.F.R. § 42.104(B)(3)	5
IV. THE CHALLENGED CLAIMS ARE UNPATENTABLE	5
A. <u>GROUND 1</u> : <i>RYU</i> IN VIEW OF <i>HODGE</i> RENDERS CLAIMS 1–5, 8, 9, 11, 12, 14–16, 18, AND 20 OBVIOUS	5
B. <u>GROUND 2</u> : <i>RYU</i> IN VIEW OF <i>HODGE</i> , IN FURTHER VIEW OF <i>STALLINGS</i> RENDERS CLAIMS 1, 6, 8, 10, 14, AND 19 OBVIOUS.....	52
V. THE <i>FINTIV</i> FACTORS FAVOR INSTITUTION	61
VI. CONCLUSION.....	64
VII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)	65
A. REAL PARTY-IN-INTEREST	65
B. RELATED MATTERS	65
C. LEAD AND BACK-UP COUNSEL.....	65

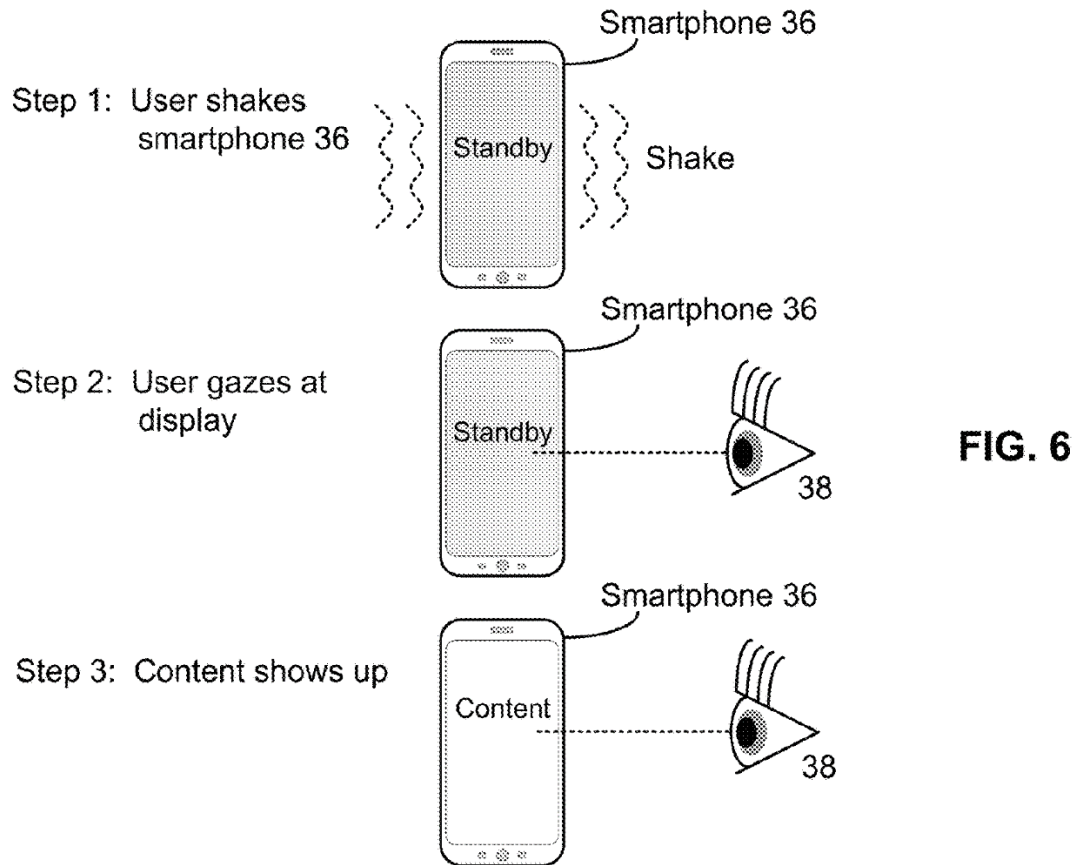
I. INTRODUCTION

Petitioner Apple Inc. (“Petitioner”) requests *Inter Partes* Review (“IPR”) of claims 1–6, 8–12, 14–16, and 18–20 (the “Challenged Claims”) of U.S. Patent No. 11,016,564 (“’564 Patent”).

II. SUMMARY OF THE ’564 PATENT

A. Description of the alleged invention of the ’564 Patent

The ’564 Patent is directed to a system and method for presenting information on an electronic device to a user. Particularly, the ’564 Patent is directed to providing information to a user on an electronic device when the device is in a standby or idle state and makes use of eye tracking technology. ’564 Patent (Ex. 1001) at Abstract, 1:25–30, 2:29–42. The ’564 Patent provides multiple embodiments wherein the electronic device, being in an idle or standby state, detects if a user interacts or begins to gaze at said electronic device. If such a user’s gaze is detected, the electronic device will then begin to display content to the user via a content window. Figures 6 and 7 below depict one embodiment where the electronic device being in an idle state first detects if the user physically interacts with said device and then detects if the user’s gaze is directed to the device before proceeding with the displaying the content items in a content window. *Id.* at 7:7–48.



Id. at Fig. 6; *see also id.* at Fig. 7 (depicting a processing flow diagram of the embodiment depicted in Fig. 6 above).

The end result is an electronic device that is capable of utilizing a user's idle time to opportunistically present content items to the user (e.g., information such as advertisements, breaking news, market news, regular news, photos, email alerts, text messages, video clips, community events, etc.). *Id.* at 4:45–49, 5:27–45. The '564 Patent explains the ability of the electronic device to present content items to the user in this way is beneficial because it is not intrusive and disruptive in nature and would be done at a time when the user was not otherwise engaged and had the time

and attention to devote to watching the presented information. *Id.* at 5:27–45. Furthermore, if the user continued to gaze at the electronic device, the content items may continue to be displayed until the user directs their gaze elsewhere. *Id.* at 7:40–48; *Dec.* 33–36.¹

B. Prosecution history of the '564 Patent

The Application that resulted in the '564 Patent claims priority to U.S. Provisional Application No. 15/917,625, filed on March 10, 2018. For the purpose of this proceeding, Petitioner applies March 10, 2018, as the priority date for the Challenged Claims.

During prosecution of the application issuing as the '564 Patent, the Applicant faced only one rejection based on nonstatutory double patenting with respect to U.S. Patent 9,880,618. (Ex. 1002, *File History for the '564 Patent*, 63–66). Applicant later filed a terminal disclaimer to U.S. Patent 9,880,618, overcoming the double patenting rejection. *Id.* at 90–91.

C. Level of skill of a person having ordinary skill in the art

A person having ordinary skill in the art (PHOSITA) at the time of the '564 Patent would have been a person having at least a bachelor's degree in computer science, software engineering, or an equivalent degree with at least one year of

¹ Citations to “*Dec.*” are to paragraphs in Ex. 1003, Benjamin B. Bederson.

experience in the fields of human computer interaction, software engineering or computer engineering in either a research or work capacity. Additionally, this hypothetical person would have experience with user interface design, user interface/mobile device software, and user interaction techniques, or their equivalent. Additional education may substitute for lesser work experience and vice-versa. *Dec.* 30–32.

III. REQUIREMENTS FOR INTER PARTES REVIEW UNDER 37 C.F.R. § 42.104

A. Grounds for standing under 37 C.F.R. § 42.104(a)

Petitioner is not the owner of the '564 Patent, Petitioner has not filed a civil action challenging the validity of any claim of the '564 Patent, and this Petition is filed less than one year after the Petitioner was served with a complaint alleging infringement of the '564 Patent.

B. Identification of challenge under 37 C.F.R. § 42.104(b) and relief requested

In view of the prior art and evidence presented, the Challenged Claims are unpatentable and should be cancelled. 37 C.F.R. § 42.104(b)(1). Further, based on the prior art references identified below, IPR of the Challenged Claims should be granted. 37 C.F.R. § 42.104(b)(2).

Proposed Grounds of Unpatentability	Exhibits
<u>Ground 1:</u> Claims 1–5, 8, 9, 11, 12, 14–16, 18, and 20 are obvious under § 103(a) over <i>Ryu</i> (Ex. 1004) in view of <i>Hodge</i> (Ex. 1005)	Ex. 1004, Ex. 1005

Proposed Grounds of Unpatentability	Exhibits
Ground 2: Claims 1, 6, 8, 10, 14, and 19 are obvious under § 103(a) over <i>Ryu</i> in view of <i>Hodge</i> , in further view of <i>Stallings</i> (Ex. 1006)	Ex. 1004, Ex. 1005, Ex. 1006

Section IV identifies where each element of the Challenged Claims is found in the prior art. 37 C.F.R. § 42.104(b)(4). The exhibit numbers of the supporting evidence relied upon to support the challenges are provided above and the relevance of the evidence to the challenges raised are provided in Section IV. 37 C.F.R. § 42.104(b)(5). Ex. 1001–Ex. 1009 are also attached.

C. Claim construction under 37 C.F.R. § 42.104(b)(3)

In this proceeding, claims are interpreted under the same standard applied by Article III courts (i.e., the *Phillips* standard). 37 C.F.R. § 42.100(b); 83 Fed. Reg. 197 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). Under this standard, words in a claim are given their plain meaning, which is the meaning understood by a person of ordinary skill in the art in view of the patent and file history. *Phillips*, 415 F.3d 1303, 1312–13. Dictionaries or other extrinsic sources may assist in determining the plain and ordinary meaning but cannot override a meaning that is unambiguous from the intrinsic evidence. *Id.*

IV. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1: *Ryu* in view of *Hodge* renders Claims 1–5, 8, 9, 11, 12, 14–16, 18, and 20 obvious

Overview of Ryu

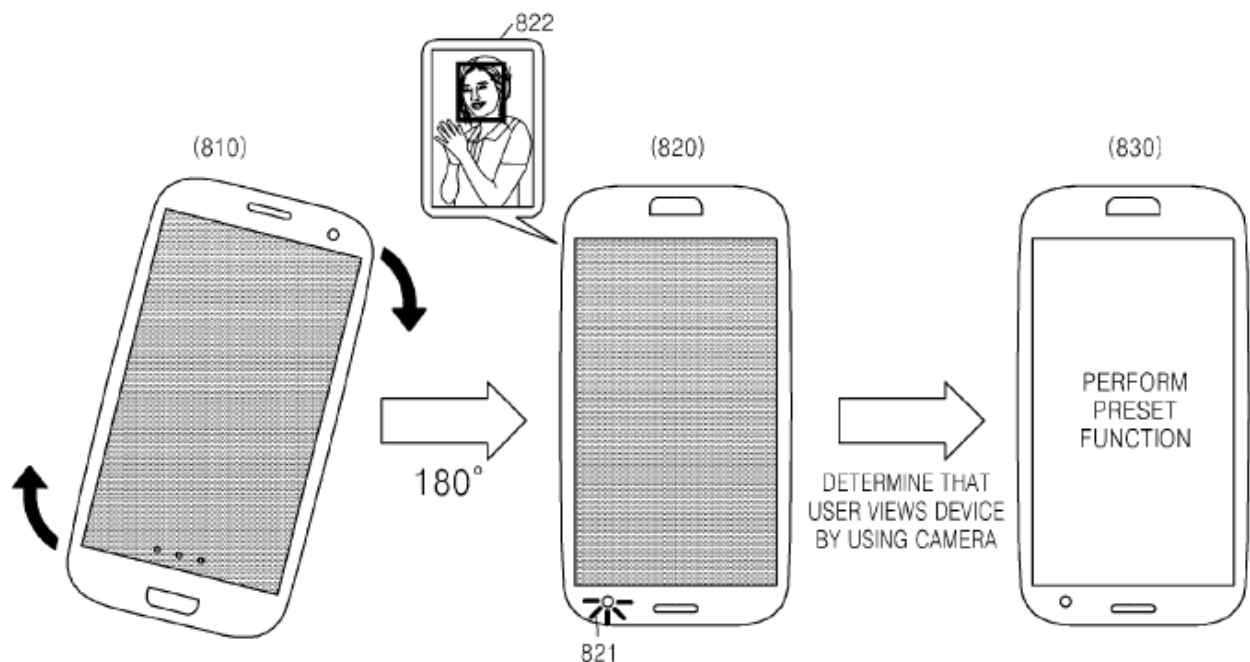
U.S. Patent No. 10,540,013 to Ryu et al. (“*Ryu*”) filed Jan. 29, 2014, and issued on Jan. 21, 2020, qualifies as prior art under 35 U.S.C. § 102(a)(2) (post-AIA) (“§ 102(a)(2)”). *Ryu* (Ex. 1004). *Ryu* was not cited or considered during prosecution of the ’564 Patent.

Ryu teaches “[a] method of performing a function of a device based on motion information of the device in a standby mode ...” *Ryu*, Abstract. The “movement based input information may be based on a user gesture (for example, a device shaking, a device rotation, a device pickup, etc.) based on a movement of a device.” *Id.*, 4:41–44. *Ryu* further describes the standby mode of the device as including “at least one of a black screen state of the device 100, an idle state of an application processor included in the device 100, a deactivation state of a function related to a touch screen of the information input/output unit 104, and a screen lock set state of the device 100.” *Id.* at 5:24–29; *see also id.* at 5:29–35 (further describing that the “term ‘black screen state’ is used throughout the present description to indicate a state of the screen in which no information is displayed the screen is thus blank and this is typically experienced by the user as a screen that is substantially black or grey in color[, but that] a ‘black screen state’ is therefore not intended to limit the screen color to black alone.”), 6:25–33 (teaching that “[t]he device 100 may be, for example, a smart phone, a smart TV, a personal computer (PC), a desktop PC, a

notebook, a smart board, a tablet PC, a mobile device, a handheld device or handheld PC ...”).

In addition to performing a function based solely upon motion information, *Ryu* also teaches that the processor of the device may “determine[] whether the user looks at the device 100 before performing the preset function.” *Id.* at 19:4–6. *Ryu*’s Figure 8, depicted below, shows the device 100 in a standby mode with its screen in a black screen state that detects motion information in the form of a user rotating the device 180° in the clockwise direction. Upon sensing this motion, the device’s processor activates a front camera to determine if a user is looking at the device prior to performing a function:

FIG. 8



Id. at Fig. 8; *see also id.* at 19:49–20:3 (discussing the operation of the device as depicted in Fig. 8).

Because both the '564 Patent and *Ryu* are directed to devices that perform verification that a user is looking at said devices prior to presenting information to a user on the device's screen, *Ryu* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the '564 Patent and is therefore analogous art. *Dec.* 37–45.

Overview of Hodge

Hodge et al., U.S. Patent Publication No. 2010/0079508 filed on Sep. 30, 2008, and published on April 1, 2010, qualifies as prior art under 35 U.S.C. § 102(a)(2) (post-AIA) (“§ 102(a)(2)”). *Hodge* (Ex. 1005). *Hodge* was not considered or substantially discussed during prosecution of the '564 Patent.

Hodge also teaches an electronic device that has gaze detection capabilities for determining if a user is looking at the device. *Hodge*, Abstract, ¶¶ 29–30 (teaching that the electronic device may be a portable wireless electronic device like that of a cellular telephone, handheld computers, or hybrid device that combines the functionality of multiple conventional devices.). *Hodge* further teaches that the electronic device “may be used to detect a user's gaze and adjust its behavior according to whether or not the user's gaze is detected.” *Id.* at ¶ 28.

Particularly, *Hodge* teaches “[t]he gaze detection capabilities of device 10

may, if desired include visual user identification capabilities (e.g., face recognition).” *Id.* at ¶ 116. Like *Ryu*, *Hodge* teaches that the electronic device “may have a camera or other optical sensor such as camera 30 that can be used for gaze detection operations[,]” and that the camera would capture an image of a user’s face for the device to process in order to detect where the users gaze is directed. *Id.* at ¶ 36; *see also id.* at ¶ 111 (teaching that the electronic device may activate gaze detection operations to determine if a user is looking at the device in response to detecting motion above that of a threshold level and switching to that of an active mode in which the device’s display is turned on if a user’s gaze is properly detected).

Particularly, *Hodge* teaches that utilizing this type of user identification arrangement (e.g., facial recognition), the device would distinguish between authorized and unauthorized users based on image sensor data thus “making gaze detection specific to particular users, [so that] device 10 will not inadvertently transition from standby mode to active mode if a person in the user’s vicinity happens to glance at the user’s device.” *Id.* at ¶ 116.

Because *Hodge*, like the ’564 Patent, discloses an electronic device that utilizes gaze detection to determine if a user is looking at the electronic device, *Hodge* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the ’564 Patent, and is therefore analogous art. *Dec.* 46–49.

Reasons to Combine Ryu and Hodge

A PHOSITA would have been motivated to combine the teachings of *Ryu* and *Hodge*, such that *Ryu* determines whether the user is recognized via a recognition mechanism.

First, like *Ryu*, *Hodge* teaches an electronic device that has multiple modes including those of an active mode, a standby mode, and a full standby mode. *Hodge*, ¶ 49. When operating in these modes the electronic device would turn its display on or off whenever appropriate in order to conserve power. *Id.* For example, *Hodge* teaches that when operating in an active mode the display “may be at an active brightness, a standby brightness when device 10 is in a partial standby mode and may be turned off when device 10 is in the full standby mode.” *Id.* (further teaching that the standby brightness may be somewhat dimmer than the active brightness). *Hodge* also teaches that the device 10 “may have a camera or other optical sensor such as camera 30 that can be used for gaze detection operations[,]” and that the camera 30 would “be used by device 10 to capture images of a user’s face that are [then] processed by device 10 to detect where the user’s gaze is directed.” *Hodge* at ¶ 36. Particularly, *Hodge* teaches “it is generally desirable for device 10 to be in the active mode whenever a user is actively interacting with device 10[,]” and particularly that “it is desirable for display 16 to be at the active brightness level whenever the user’s gaze is directed towards display 16.” *Id.* at ¶ 49, Fig. 1 below (depicting the device 10 having a display screen 16 and camera 30), ¶ 13 (teaching

the electronic device may use readings from sensors such as motion sensors (e.g., accelerometers) to determine whether or not to perform gaze detection operations).

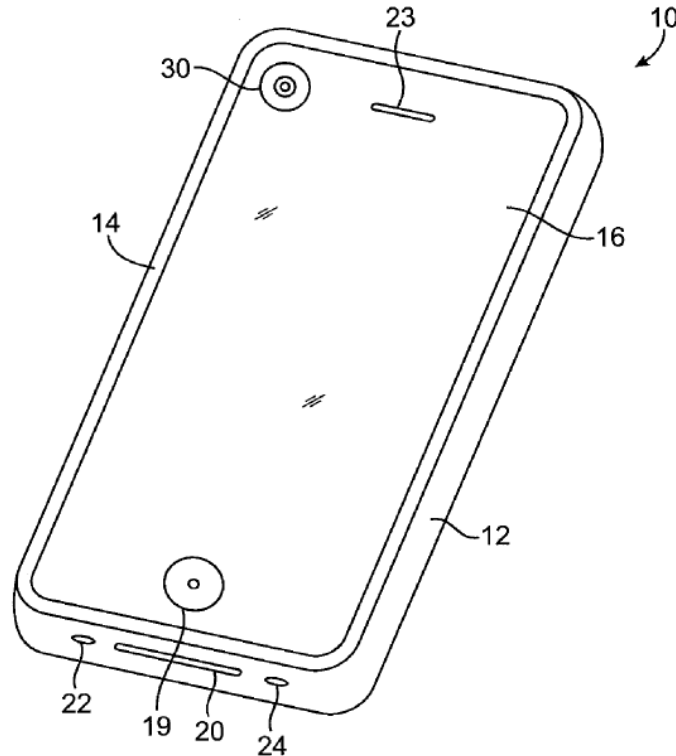


FIG. 1

Id. at Fig. 1.

“The motion of device 10 can be indicative of whether device 10 is being used by a user. ... For example, when device 10 detects motion above a threshold level with an accelerometer, device 10 may activate gaze detection operations to determine if a user is looking at the device. ... With this type of arrangement, device 10 may be in standby mode. ... Device 10 may then activate gaze detection operations and, if the user’s gaze is properly detected, may switch to an active mode

such as mode 68 in which display 16 is turned on.” *Id.* at ¶ 111, ¶ 63 (teaching that “[d]isplay 16 may be at the active brightness level while device 10 is in active mode 68[,]” and that “[i]n mode 68, device 10 may be displaying an application display screen such as a home page, a music playback application screen, a web browsing application screen, an email application screen, etc.”). Moreover, *Hodge* teaches that the “[c]ameras used for gaze detection may, for example, be used by device 10 to capture images of a user’s face that are processed by device 10 to detect where the user’s gaze is directed.” *Id.* at ¶ 36. As one example, *Hodge* teaches “device 10 may be capturing images using camera 30 or other image sensing components at regular intervals and maybe analyzing the images using gaze detection software. Based on this analysis, the device can determine whether the user’s gaze is directed towards device 10 and display 16.” *Id.* at ¶ 53, ¶¶ 66, 77, 103, (same).

Thus, a PHOSITA would have understood that *Hodge* teaches an electronic device that while in a standby mode detects a user physically interacting with the electronic device and performs gaze detection after detecting the physical interaction in order to detect if the user’s gaze is directed to the electronic device at least because *Hodge* teaches an electronic device 10 having a camera 30 for performing gaze detection operations and activating gaze detection operations while device 10 is in a standby mode in response to detecting motion of the device by the user. *Dec.*, 50–51.

Furthermore, *Hodge* expressly teaches that gaze detection capabilities of device 10 “include **visual user identification capabilities (e.g., face recognition)**.” *Hodge*, ¶ 116. Specifically, *Hodge* explains “device 10 may distinguish between authorized users and unauthorized users based on image sensor data. For example, device 10 **may recognize an authorized user** and may unlock itself whenever the authorized user is detected by the device’s gaze detection circuitry (e.g., camera 30).” *Id.* Further, *Hodge* explains that “[i]f desired, when device 10 detects that the authorized user’s gaze has been diverted from device 10, device 10 may lock itself to prevent unauthorized users from using device 10. ... By making gaze detection specific to particular users, device 10 will not inadvertently transition from standby mode to active mode if a person in the user’s vicinity happens to glance at the user’s device.” *Id.*

A PHOSITA would have been motivated and found it obvious to modify *Ryu* to perform gaze detection to recognize only an authorized user of the device, as taught by *Hodge*, at least because doing so would improve the security and privacy of *Ryu*’s device. *Dec.*, 52. Such an addition uses *Hodge*’s well-known technique of performing facial recognition to perform both gaze detection and determine whether the user is recognized via a facial recognition mechanism, with *Ryu*’s electronic device that determines whether the user is looking at the device by performing feature value detection on an image captured by a front facing camera of a user’s

face. The modification of *Ryu*'s system would improve the electronic device's functionality in the same way as *Hodge* and accomplish *Hodge*'s stated improved security measures "[b]y making gaze detection specific to particular users, device 10 will not inadvertently transition from [a] standby mode to [an] active mode if a person in the user's vicinity happens to glance at the user's device." *Hodge*, ¶ 116. The modified *Ryu* system would be improved with increased privacy and security, by reducing the chances of an unauthorized user gaining access to the electronic device and by only presenting information to an authorized user. *Dec.*, 52. Indeed, as *Hodge* expressly notes, utilizing user-specific gaze detection ensures the phone does not transition into active mode when an unauthorized user looks at the device. *Hodge*, ¶ 116. Further still, *Hodge* recognizes the value of locking the device when it is determined the authorized user's gaze has been diverted from the device. *Id.* A PHOSITA would have recognized *Hodge*'s functionality safeguarded the user's privacy and security and that *Ryu* would likewise benefit from employing this gaze detection to recognize only authorized users. *Dec.*, 52.

There would have been a reasonable expectation of success in modifying *Ryu*'s electronic device, because the modification would have required only simple programming techniques well within a PHOSITA's expertise, and *Ryu* already teaches determining whether a user's face is contained in a captured image by detecting feature values of the user's face such as distance between eyes, nose width,

forehead proportions, and shape of a cheekbone. *Ryu*, 19:13–22; *Dec.*, 53. A PHOSITA would have understood that such facial values were commonly used in the identification of a person and would be unique to every individual. Thus, a PHOSITA would have understood that such extracted facial feature values would be used to compare with the facial features of a registered user of *Ryu*'s electronic device for the purpose of recognizing the registered user (i.e., determining whether the user is recognized via a recognition mechanism). *Id.*

Claim 1

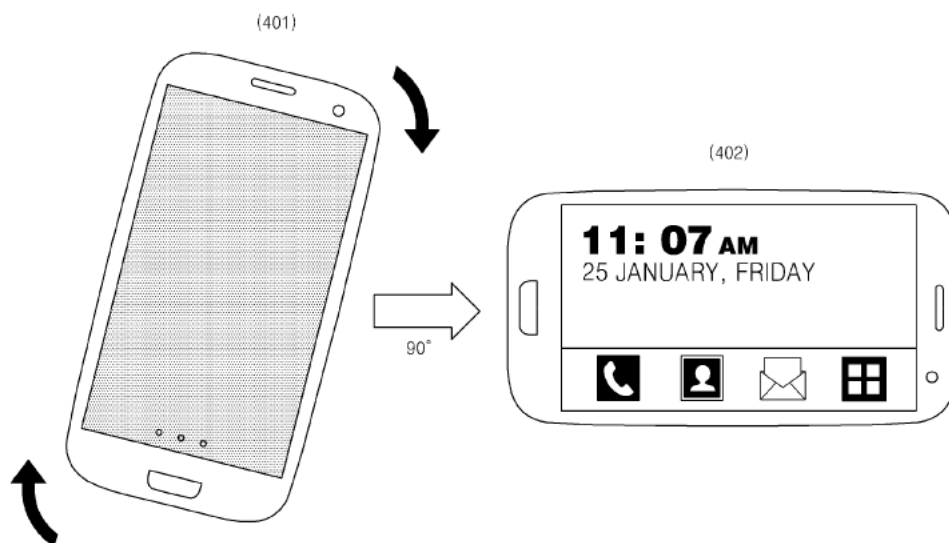
[1(Pre)] A method for presenting information at an electronic device, comprising:

To the extent the preamble is limiting, *Ryu* discloses a method for presenting information on an electronic device. Specifically, *Ryu* teaches “[a] method of performing a function of a device based on motion information of the device in a standby mode ...” *Ryu*, Abstract (further teaching that the device contains “storage configured to store motion information based on information related to the movement and at least one piece of function information corresponding to the motion information; and a processor configured to control the device to perform a function corresponding to the motion information ...”). The device is described as being “a smart phone, a smart TV, ..., and a **digital consumer electronics (CE) device** having a function of sensing a movement of the device, but is not limited thereto.” *Id.* at 6:25–33 (emphasis added). *Ryu* teaches that the device further

includes an “information input/output unit 104 [that] include[s] a display that may display a screen.” *Id.* at 5:17–18.

In one embodiment, *Ryu* teaches that “[a] standby mode of the device 100 may be changed to an active mode according to motion information detected in the standby mode of the device 100.” *Id.* at 8:52–54, 8:55–67 (further teaching that the information input/output unit 104 may be in a deactivated state when the device 100 is in the standby mode (e.g., a black screen) and in an active state when the device 100 is in an active mode). For example, in Figure 4A, *Ryu* depicts the device 100 in a standby mode with the information input/output unit 104 displaying a black screen, but upon detecting movement indicating a 90° rotation, the device’s processor performs the function of checking the time and changes the input/output unit 104 to an active state to display a screen 402 including time information.

FIG. 4A



Id., at Fig. 4A; *see also id.* at 9:51–10:10 (discussing Fig. 4A).

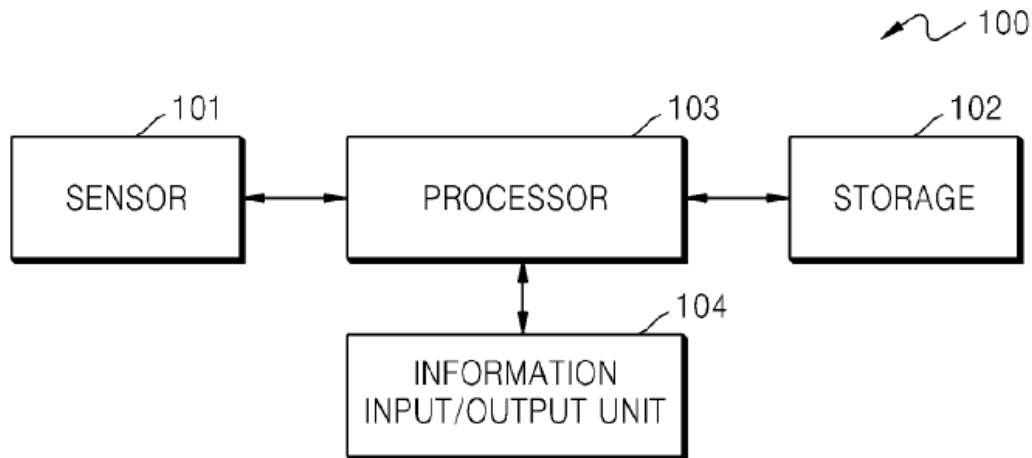
Accordingly, *Ryu* teaches a method for presenting information on an electronic device, at least because *Ryu* teaches an electronic device containing a screen that is capable of activating said screen and displaying information in response to receiving a user's input (e.g., motion input).

[1(a)] detecting an act made by a user involving physical contact with the electronic device or physical movement of the electronic device when a display of the electronic device has an idle screen or a screen in standby mode, inactive mode, or screen-saver mode;

Ryu teaches that “**the device 100 includes a sensor 101,**² a storage 102, a processor 103, and an information input/output unit 104 ...” *Ryu*, 4:63–65. Further, the “sensor 101 may include a plurality of sensors of various types **to sense movement of the device 100.**” *Id.* at 5:15–16, 6:61–7:10 (further teaching that the sensor 101 may include a gyro for sensing rotation, an accelerometer for sensing direction based movement and movement distances, a magnetic field sensor for sensing rotation direction, an orientation sensor for detecting an inclination direction, a GPS sensor for detecting location, a gravity sensor for detecting a gravity direction, and a rotation number sensor for detecting the number of rotations the device may perform.). Fig. 1, depicted below, shows a block diagram of device 100 as including a sensor 101:

² All emphasis added unless otherwise noted.

FIG. 1



Id. at Fig. 1.

Particularly, *Ryu* teaches that information may be input into the device 100 in a number of ways such as touch based input information, **movement based input information**, or vision based input information. *Id.*, 4:37–40. With respect to movement based input, *Ryu* expressly teaches that “movement based input information may be based on **a user gesture (for example, a device shaking, a device rotation, a device pickup, etc.)** based on a movement of a device.” *Id.* at 4:29–44. Thus, *Ryu* teaches detecting an act made by a user involving physical movement of the device, as claimed, at least because *Ryu* expressly teaches an electronic device to which a user inputs information by shaking or rotating (i.e., physically moving), and said device further contains a sensor (e.g., a gyro, an accelerometer, and/or a magnetic field sensor) for detecting said user input.

Ryu also teaches that the device 100 includes the operating modes of both a **standby mode** and an activation mode. *Ryu*, at 5:21–23. With respect to the standby mode, *Ryu* expressly teaches that “[t]he standby mode of the device 100 may include at least one of a **black screen state** of the device 100,” where “the term ‘black screen state’ is used throughout the present description to **indicate a state of the screen in which no information is displayed the screen is thus blank and this is typically experienced by the user as a screen that is substantially black or grey in color** ...” *Id.* at 5:24–35. Thus, *Ryu* teaches an electronic device having a screen (i.e., a display) that is inactive particularly when the device 100 is in a standby mode, at least because *Ryu* expressly teaches an electronic device having a standby mode in which the device’s screen is in a black screen state (i.e., a screen state in which no information is displayed).

Additionally, *Ryu* teaches that when the device 100 is in a standby mode, the sensor 101 is still active and able to detect user input in the form of movement-based input:

The **standby mode of the device 100 may include a low power state in which only the sensor 101, the storage 102, and the processor 103 operate**. That is, the **standby mode of the device 100 may include the low power state in which power is consumed by the sensor 101, the storage 102, and the processor 103**. The low power state may be, for example, in the range of power consumption of several of mW and several μ W but is not limited thereto.

Ryu, 5:52–59, 7:29–33 (teaching the sensor 101 is a movement sensor “for detecting the movement of the device 100.”). *Ryu* further teaches the sensor may sense motion while in the standby mode. Specifically, with respect to Fig. 4A (reproduced above), *Ryu* teaches that **“when the device 100 is in a standby mode, the information input/output 104 displays the black screen 401, and a sensing value (information regarding a movement) indicating a 90° rotation of the device 100 in a clockwise direction is received from the sensor 101, [...]”** *Id.* at 9:51–59; *see also id.* at 10:1–10; 10:41–58; 10:65–11:6; 19:49–63.

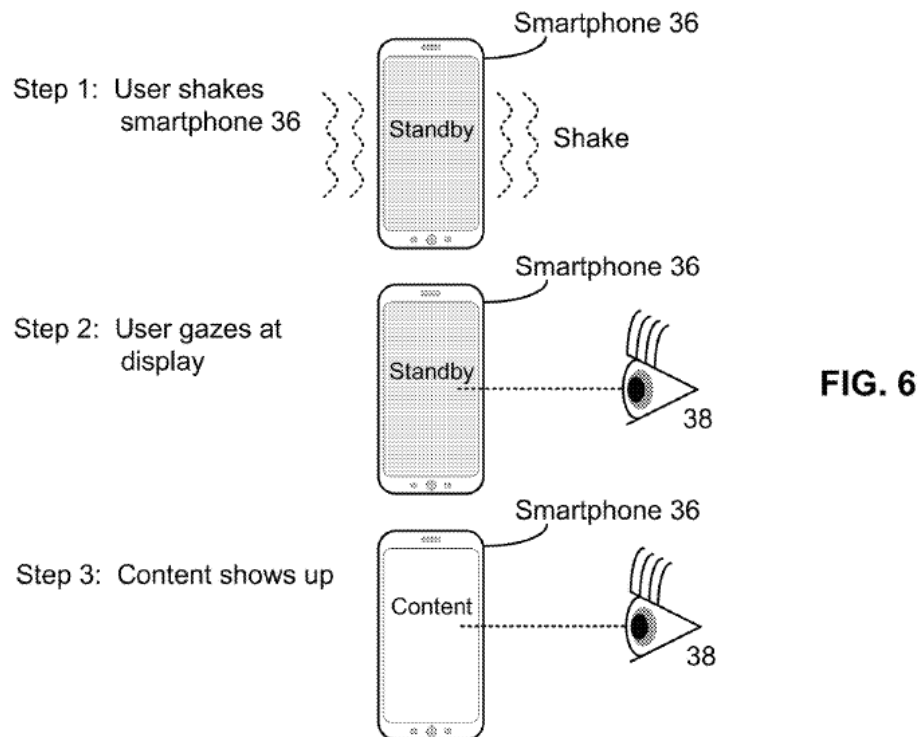
Thus, *Ryu* expressly teaches an electronic device that detects an act (i.e., physical movement) made by a user while the device’s screen (i.e., display) is inactive at least because *Ryu* teaches an electronic device being in a standby state whose motion sensor detects movement and further teaches that when said device is in standby mode the screen of said device is in a black state and not displaying any information (i.e., inactive).

[1(b)] performing gaze detection only after detecting the act;

The ’564 Patent discloses that “the device detects a user’s gaze and analyzes whether the user looks at its display by sensor 10...” ’564 Patent, 5:2–4. For example, “sensor 10 [] tracks the eye of a user using mature eye-tracking technologies. The sensor may be arranged very close to the screen of a display and designed to obtain a picture of the facial part of the user. The system may recognize

whether a user's gaze is in such a direction that the eye sight may fall on the display screen[.]” *Id.* at 3:65–4:4. To recognize whether the gaze is in the direction of the display, the '564 Patent discloses that the sensor may employ “proper algorithms[.]” be built with imaging technologies that analyze an image of the user's eye “to decide which direction the user is looking at[,]” or may employ both visible and infrared light for eye tracking. *Id.* at 4:4–10.

The '564 Patent provides an example of gaze detection in conjunction with a user's act in Figure 6:



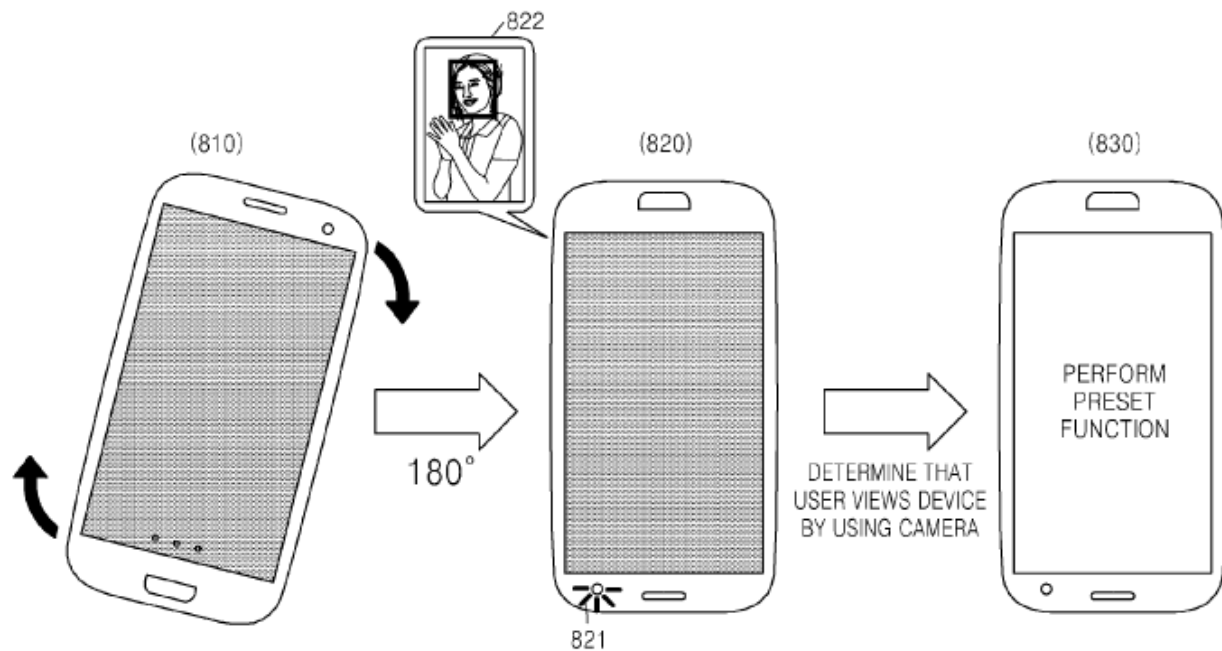
Id. at Fig. 6, 6:56–66 (disclosing after “[t]he shaking act is caught by the detector, which may send a signal to **trigger a sensing process to ascertain whether the user gazes at the phone**. For instance, a circuitry may be configured such that

shaking may activate a gaze sensing system.”), 6:66–7:2 (disclosing that “[t]hen in Step 2, the user may look at the phone screen or an eye 38 may gaze at it as shown in the figure, which is detected and next in Step 3, content items may show up on the screen.”). The ’564 Patent further discloses that a user does not necessarily need to look at the screen, but “may also look at things located outside a display but close to its edge, instead of looking at the display directly.” *Id.* at 12:15–17, 12:27–30 (further disclosing that “[i]n cases of smartphone and tablet computers, gazing at a device is almost equivalent to gazing at a display, because for these devices, a display may cover[] the whole area of one side.”). Thus, a PHOSITA would have understood that the ’564 Patent’s gaze detection includes at least triggering a process to ascertain whether the user gazes at the device (e.g., its screen, an area outside the screen, or the device as a whole) using algorithms or imaging technologies and analysis. *Dec.*, 54–57.

Ryu teaches triggering a sensing process to determine if a user gazes at a device (i.e., performing gaze detection). *Ryu* teaches that when the electronic device 100 is in standby mode, and after the electronic device 100 has sensed a user’s movement of said device, the device 100 will temporarily change its operating mode to an active mode while still maintaining the black screen of the input/output unit 104 (i.e., the inactive mode of the display). Furthermore, like the ’564 Patent’s use of imaging technologies and imaging analysis, *Ryu* teaches that upon changing the

operating mode of the device 100 to an active mode, the device 100 will execute an application related to a front camera to capture an image for the purpose of determining if a user looks (i.e., gazes) at the device 100. *Ryu* depicts this triggering and executing of an application related to the front camera (i.e., performing gaze detection) in Fig. 8:

FIG. 8



Id. at Fig. 8, 19:49–56 (teaching the “when the device 100 is in the standby mode and a screen 810 is in a black screen state as shown in Fig. 8, when it is determined that the device 100 has rotated by 180° in a clockwise direction by using a sensing value, the processor 103 activates a function of a front camera 821.”). *Ryu* further explains that processor 103 determines “whether a user looks at the device 100 [by

performing face recognition or eye estimation] regarding an image 822 obtained by using the front camera 821.” *Id.* at 19:64–67.

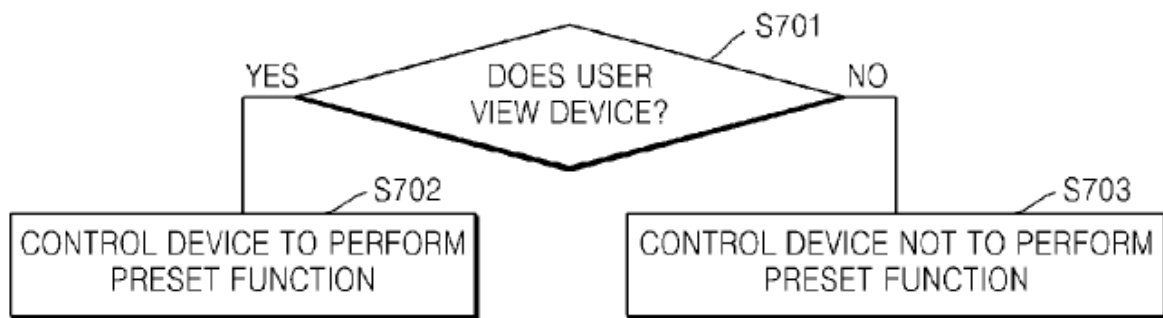
Because *Ryu* teaches in response to sensing rotation of the device 100, the processor 103 activates a function of the front camera to obtain an image of the user (i.e., performs gaze detection after detecting the act), and then determines whether the user is looking at the device 100 by performing either face recognition or eye estimation on an image taken by the front camera, a PHOSITA would have understood that *Ryu* teaches that gaze detection is performed only after detecting the act as claimed. *Dec.*, 58–59.

[1(c)] ascertaining whether the user looks at a direction toward the electronic device;

As noted for limitation 1(b), *Ryu* teaches the processor 103 activates a function of a front camera to capture an image of the user (i.e., performs gaze detection after detecting the act) and then performs either facial recognition or eye estimation in an attempt to determine whether the user is looking at the device 100 (i.e., ascertaining whether the user looks at a direction towards the electronic device). Furthermore, as discussed above a PHOSITA would have understood that a user looking at a direction towards the electronic device would have at least included a user looking at the screen/display, at things located outside a display but close to its edge, or at the device itself. *See supra* limitation 1(b).

Ryu expressly teaches that its gaze detection process using processor 103 determines whether a user looks at the device 100 (i.e., ascertaining whether the user looks at a direction towards the electronic device). *Ryu* depicts the process of the processor 103 determining whether the user looks in a direction towards the device 100 in Fig 7:

FIG. 7



Ryu, Fig. 7, *see also id.* at Fig. 8, 18:65–19:6 (teaching that the Fig. 7 is a flowchart of a process performed by the processor 103 and that particularly operation S701 is the step where the processor 103 “determines whether the user looks at the device 100 before performing the preset function.”), 19:64–67 (teaching the “processor 103 may determine whether a user looks at the device 100 according to the above-described face recognition or eyes estimation regarding an image 822 obtained by using the front camera 821.”).

Particularly, *Ryu* teaches multiple ways by which it may be determined if a user looks at the device, including “whether a user’[s] face is included in an image obtained by using a camera included in the device 100[,]” by determining “whether

the user's face included in the obtained image is oriented toward the device 100[,]” or by “detecting the user's eyes from the obtained image and estimating the eyes' movements.” *Id.* at 19:6–12, 19:26–29. Specifically, *Ryu* teaches that determination is made by “using a face region extraction technology[,]” where “[t]he processor 103 may determine whether the user's face included in the obtained image is **oriented toward the device 100** by using a feature value detecting method.” *Id.* at 19:13–18. Using the feature value detecting method, “[t]he processor 103 may estimate an orientation direction of the user's face included in the obtained image by using the detected feature value and **determine whether the user looks at the device 100.**” *Id.* at 19:22–25. Alternatively, “it may be determined whether the user looks at the device 100 by detecting the user's eyes from the obtained image and estimating the eyes' movements. *Id.* at 19:26–29.

Additionally, *Ryu* teaches that the device 100 would have stored within its storage 102 “at least one related application program[,]” and would further “provide the processor 103 with the related application program according to a request of the processor 103[,]” thus allowing the processor 103 to “execute the related application program ... and determine whether the user looks at the device 100 ...” *Id.* at 19:40–48.

Thus, *Ryu* expressly teaches that electronic device 100 ascertains whether the user looks at a direction towards the electronic device at least because *Ryu* teaches

that the mobile device 100 would use face region extraction technology and feature value detection or, alternatively, estimate the user's eye movements, to determine if the user looks at the device 100.

[1(d)] determining whether the user is recognized via a recognition mechanism; and

The '564 Patent discloses that the electronic device “may be equipped with a facial recognition system to create an extra layer of protection[,]” by at least “recogniz[ing] a device owner, which may protect a user's privacy ...” *'564 Patent*, 11:66–12:4. Furthermore, the '564 Patent discloses that a user may be identified by comparing against “given facial criteria” and that the electronic device may “employ facial recognition algorithms to identify a user.” *Id.* at 12:4–14.

The feature value detection method taught by *Ryu* for determining whether a user is looking in a direction towards the device 100 “detects feature values such as **a distance between the eyes, a [nose]³ width, a height and shape of a cheekbone, a proportion of a forehead** (an area based on a breadth and a height of forehead) on a face, etc.” *Ryu*, 19:18–22; *Dec.*, 61–63 (discussing the features of eye distance, nose width, height and shape of cheekbones, and forehead proportions were well known facial measurements (i.e., facial criteria) used to uniquely recognize a user).

³ The original spelling is ‘noise,’ however a PHOSITA would have understood this was a misspelling of the word ‘nose’ when taken in context. *Dec.*, 58.

Moreover, *Ryu* is clear that its face detection processes **recognize the user's face**. *Ryu*, at 4:51–57 (“[I]nformation obtained by **recognizing a user's face** ...”); 19:26–29 (“Instead of the above-described **user's face recognition method** ...”); 23:60–63 (“The front camera may operate so as to **recognize a user's face** ...”). However, *Ryu* does not expressly disclose whether its face detection processes actually recognize the user's specific face such that it could recognize *the user* as well as the user's face, or if the processes only recognize that *a face* of *a user* is recognized.

As explained above, *Hodge* expressly teaches its gaze detection detects only **authorized users** and will even lock the device when the authorized user's gaze is diverted, and a PHOSITA would have been motivated and found it obvious to modify *Ryu* to determine whether the user is recognized via a recognition mechanism, in view of *Hodge*. *Hodge*, ¶ 116; *see supra* IV.A (Reasons to Combine *Ryu* and *Hodge*); *Dec.*, 50–53, 64–67. Specifically, a PHOSITA would have been motivated and found it obvious to modify *Ryu* to utilize *Hodge's* authorized user-specific gaze detection because it would have imparted *Hodge's* stated benefits of increased security and privacy to *Ryu's* device. Thus, a PHOSITA would have found it obvious to modify *Ryu* in view of *Hodge*, and the combination discloses this limitation. *Dec.*, 64–67.

[1(e)] presenting a plurality of content items when the user is recognized via the recognition mechanism and it is ascertained that the user looks at a direction toward the electronic device.

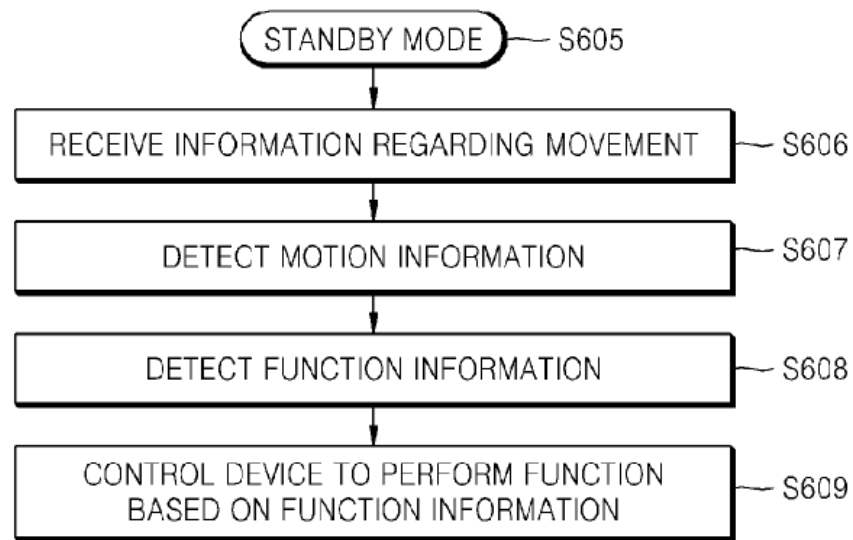
As discussed above for claims 1(c) and 1(d), *Ryu* in view of *Hodge* teaches ascertaining if the user looks at a direction towards the electronic device (i.e., device 100) and determining if the user was recognized via a recognition mechanism.

Ryu further teaches that only after determining if the user was looking at the device 100 and performing feature value detection will the device 100 then change from a standby mode to an active mode in which the information input/output unit 104 (i.e., display screen) enters an active state and performs a preset function (e.g., displays information to the user). *Ryu*, Figs. 7–8, 19:1–20:3 (teaching the device 100 starting in a standby state and a user physically interacting with the device (e.g., rotating device by 180°) resulting in the processor of the device changing the operating mode of the device to that of the active mode and activating a front camera to determine if the user looks at the device via feature value detection, and if it is determined the user is looking at the device performing a preset function), 4:59–61 (teaching the device 100 performs “a preset function based on motion information regarding a movement of the device 100 ...”), 8:52–54 (teaching the standby mode of the device 100 is changed to an active mode according to the motion information detected while in the standby mode), 5:17–18 (teaching the “information input/output unit 104 may include a display that may display a screen”).

The '564 Patent discloses that the “[c]ontent items presented on an idling device may include **any category of information** such as breaking news, regular news, market updates, newly-arrived shared photos, email alert, text messages, video clips, advertisements, community events, sports, and so on.” *'564 Patent*, 4:45–49. The '564 Patent further discloses that “[t]he content items may have video, audio, or **another format** ...” *Id.* at 8:28–30. A PHOSITA would have thus understood that presenting a plurality of content items would at least include displaying more than one piece of information to a user in a format that was capable of imparting information to said user at least because the '564 Patent discloses that the content items may be any category of information having various types of formats. *Dec.*, 74.

Ryu's Fig. 8 shows the activation of a “preset function performed by the device 100 in operations S701 and S702 of Fig. 7 ...” *Ryu*, 19:49–51. Likewise, *Ryu* teaches “Fig. 7 is a flowchart of a process that may be performed in operation [...] S609 of Fig. 6B, according to an exemplary embodiment.” *Id.* at 18:65–67. “Fig. 6B is a flowchart of a method of performing a function of a device, according to another exemplary embodiment [...] where the device 100 is in the standby mode.” *Id.* at 18:23–26.

FIG. 6B



Id. at Fig. 6B. Thus, a PHOSITA would have understood that Fig. 6B (shown above) depicts the process flow the device 100 depicted in Fig. 8 that starts out in standby mode and receives user input in the form of rotational movement (e.g., 180° rotation), determines which preset function correlates with the detected rotational movement, and performs the process of checking if a user is looking at device 100 before controlling the device to perform the determined preset function (i.e., performing the processing steps of Fig. 7 at processing step 609 of Fig. 6B). *Dec.*, 70–73.

Furthermore, *Ryu* expressly teaches that “[i]n operation S609, the processor 103 may **display a gateway screen as shown in FIGS. 17 and 18A through 18F** that will be described later **before the function is performed.**” *Ryu*, 18:61–64. Thus, a PHOSITA would have understood that with respect to Fig. 8 prior to the electronic device performing the preset function the processor of the device 100

would display a gateway screen (i.e., present a plurality of content items). *Dec.*, 75. Particularly, gateway screen 18F would have been understood to teach a plurality of content items:

FIG. 18F



Id. at Fig. 18F, 37:54–60 (teaching that “[t]he gateway screen of FIG. 18F includes **manufacturer identification information** of the device 1400, a **lock release message**, the **information (the content/advertisement region)** that may be selected by the user as to whether to perform a preset function, and the **information (icons)** used to select at least one executable application”), 37:33–37 (teaching that the “[i]nformation displayed through the content/advertisement region may be a size-

reduced image or a part of an image (for example, a thumbnail image or a key image or a representative image) indicating the preset function that may be performed but is not limited thereto”). Thus, a PHOSITA would have understood that the gateway screen 18F that would be displayed on the electronic device after verifying the user was: (1) looking at the device, and (2) recognized as the user of the device. *Dec.*, 77 (discussing motivation to implement the facial recognition mechanism of *Hodge* at the same time as *Ryu*’s gaze detection step). Additionally, a PHOSITA would have understood that the device would display to the user (i.e., present) a plurality of pieces of information (i.e., a plurality of content items) at least because the gateway screen 18F, which contained multiple pieces of information such as a lock release message (i.e., a content item providing information about a locked state of the device), manufacturer identification information (i.e., a content item providing information about the manufacturer of the device), and app icons (i.e., a content item providing information about applications that may be executed), would be displayed to the user. *Dec.*, 75–77.

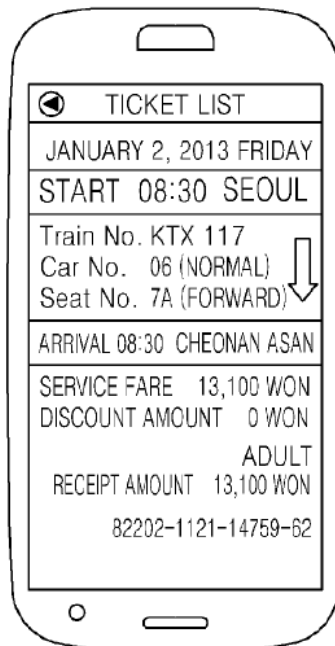
Claim 2

[2] The method according to claim 1 wherein the plurality of content items is unrelated to content presented before a state of the idle-screen, the inactive mode, or the screen-saver mode.

Ryu teaches this limitation to a PHOSITA. As explained for limitation 1(e) above, *Ryu* teaches after presenting a plurality of content items (i.e., a gateway

screen) the device 100 then performs a preset function. One such example of a preset function that is performed after the displaying of a gateway screen is shown in Figure 20 (e.g., the displaying of train ticket information):

(2030)

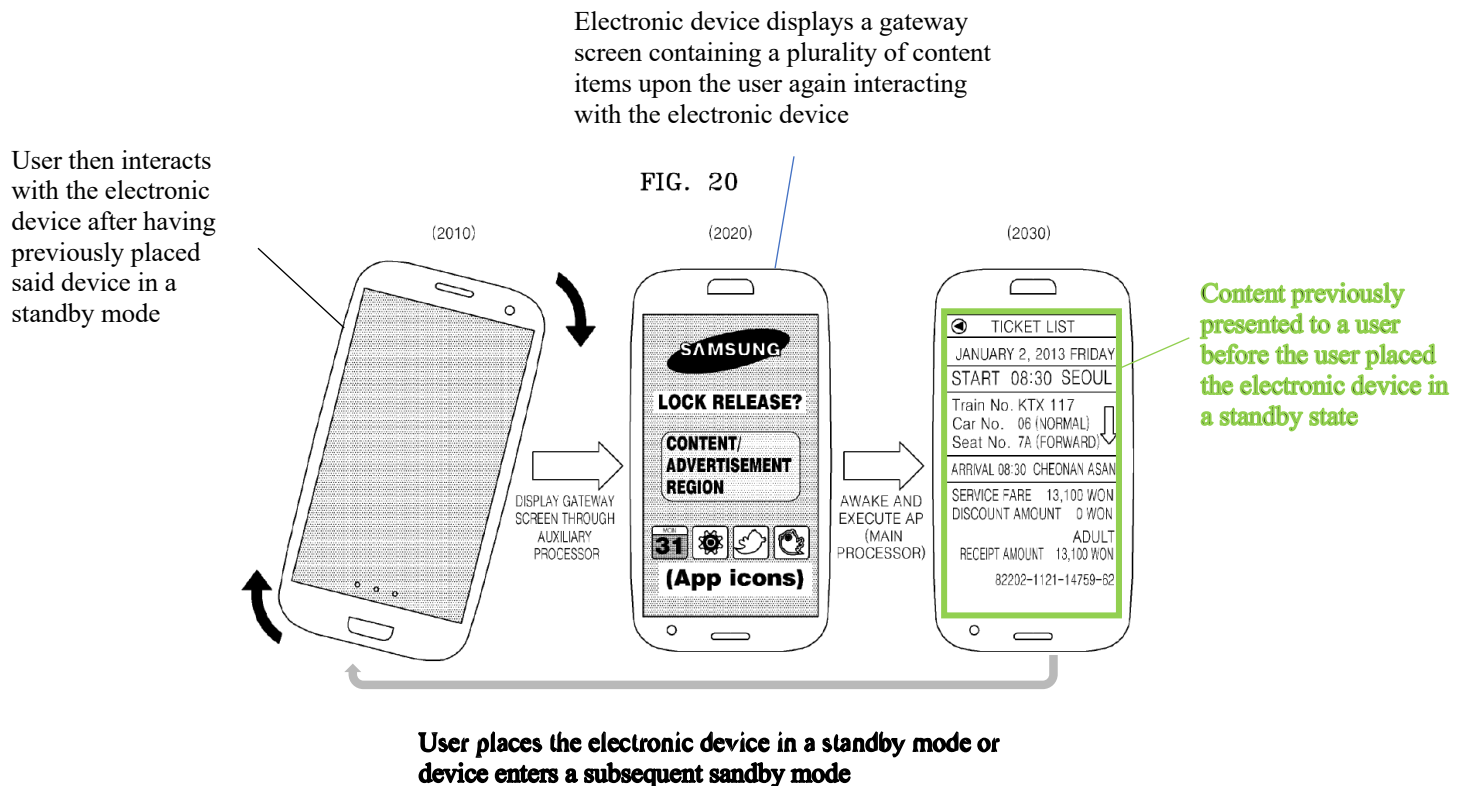


Ryu, Fig. 20 (excerpt showing screen 2030 displaying train ticket information), 39:19–31 (teaching that when the device is in standby mode and motion is detected a gateway screen is displayed, and “[t]he screen 2030 including train ticket information is displayed when the content/advertisement region is selected on the gateway screen 2020.”). Thus, a PHOSITA would have understood that *Ryu* teaches ultimately displaying train ticket information on a screen to a user after displaying a plurality of content items (i.e., the gateway screen) at least because *Ryu* teaches that

upon displaying a gateway screen and a user selecting the content/advertisement region of the display screen, a screen that includes train ticket information is then ultimately displayed to the user. *Dec.*, 78. A PHOSITA would have also understood the displaying of the train ticket information as being content presented to a user while the electronic device was in an active mode and prior to the electronic device entering a future standby mode (i.e., content presented before a state of the idle/inactive mode of the screen). *Dec.*, 79–80. Additionally, a PHOSITA would have understood that a user of *Ryu*'s electronic device would be able to cause the electronic device to enter a standby mode after viewing the train ticket information or that the electronic device would subsequently enter a standby state on its own. *Id.*

Once back in standby mode, a PHOSITA would have understood that the electronic device would perform its gaze detection and user recognition process the next time the user interacted with the device, as explained above with respect to Claim 1. *See supra* Claim 1. When that occurs, the gateway screen would be displayed prior to the electronic device performing the preset function. *Dec.*, 80. A PHOSITA would have understood that the plurality of content items on the gateway screen to be unrelated to the content that was presented to the user before the electronic device entered a standby mode (e.g., the train ticket information). *Dec.*, 81–82.

As depicted in Fig. 20 below, *Ryu* shows the subsequent displaying of the gateway screen on an electronic device in a standby mode prior to the displaying of train ticket information (i.e., content previously displayed before a user prior to the electronic device entering or being placed in a standby mode):



Ryu, Fig. 20 (annotated to depict a subsequent displaying of the gateway screen after previously displaying train ticket information and the electronic device entering a subsequent standby mode), *Dec.*, 81. A PHOSITA would have thus understood that once a user is finished with the preset function (i.e., the train ticket), the device would return to the standby state after the user had finished utilizing the device for a specific function (e.g., either via user instruction or via the device's sleep settings) and, the

next time the device sensed motion, it would operate as explained with respect to Claim 1 and again present the gateway screen, as described for limitation 1(e). *See supra* Claim [1(e)]; *Dec.*, 79–81.

While the '564 Patent does not describe what constitutes the plurality of content items being “unrelated” to the content presented before a state of the standby mode, a PHOSITA would have understood *Ryu*’s train ticket to be “unrelated” to the plurality of icons on its gateway screen. *Dec.*, 82. Specifically, the “content” of the train ticket relates to a unique, specific train ride, such as train number, car and seat number, departure and arrival time, and fare amount:



Ryu, at Fig. 20 (excerpt of screen 2030). In contrast, the “plurality of content items”

on the gateway screen have no relation to that specific train ride, or train rides more generally. Specifically, *Ryu* explains that the gateway screen in the train ride example at least includes manufacturer information, a lock release, and app icons. *Dec.*, 82. Thus, a PHOSITA would have understood the plurality of content items shown on the gateway screen bears no relation to the content that was shown on the device prior to returning to the standby state (e.g., the train ticket). *Id.* As such, a PHOSITA would have understood that *Ryu* discloses this limitation.

Claim 3

[3] The method according to claim 1, further including stopping presenting the plurality of content items when it is detected that the user looks at a direction other than the one toward the electronic device.

Ryu in view of *Hodge* teaches this limitation. Specifically, *Hodge* teaches that “[i]n general, it is generally desirable for device 10 to be in the active mode whenever a user is actively interacting with device 10.” *Hodge*, ¶ 50. *Hodge* expressly teaches that “when the device detects the user is no long[er] looking at the device, **the device may dim or turn off the display.**” *Id.* at ¶ 28 (emphasis added), ¶ 53 (teaching that “[w]hile device 10 is in the active mode, device 10 may be performing gaze detection operations.”). *Hodge* teaches that “[a]n advantage of turning off the display when the user is not looking at the display is this may help prevent unauthorized users from viewing information on the display, thereby enhancing device security.” *Id.* at ¶ 28, ¶ 14 (further teaching that “[i]t may therefore

be helpful to turn off a display when the lack of a user's gaze indicates that the user is not present to guard the device.”).

Additionally, *Hodge* teaches that “[a] device such as device 10 that has gaze detection capabilities may use gaze detector data in implementing a power management scheme.” *Id.* at ¶ 48; *see also id.* at ¶ 28 (teaching that “[w]ith one suitable arrangement, ... the electronic device may accelerate the shutdown of device components when the user's gaze is not detected.”).

For example, the electronic device may operate in an active mode when the electronic device determines, using gaze detection sensors, that the user's gaze is directed towards the electronic device and may operate in one or more standby modes when the device determines that the user's gaze is not directed towards the electronic device. When the electronic device is operating in one of the standby modes, circuitry and components such as a display screen, touch screen components, gaze detection components, and a central processing unit or CPU in the electronic device may be powered down or operated in a low-power mode to minimize power consumption in the electronic device.

Id. at ¶ 9 (emphasis added).

Thus, a PHOSITA would have understood that *Hodge* teaches monitoring if a user continues to gaze at an electronic device while in an active mode, and if it is determined that a user no longer looks at the electronic device, transitions to a standby mode in which the display of the electronic device is powered off. *Dec.*, 83–85.

A PHOSITA would have found it obvious and been motivated to modify *Ryu*'s system to include *Hodge*'s method of continuing to perform gaze detection while in the active mode and powering the display off if the user's gaze is no longer detected. *Dec.*, 86–87. Such an addition uses *Hodge*'s powering down of the display of an electronic device when detecting that a user no longer looks at the display with *Ryu*'s electronic device that determines if a user is looking at the electronic device before presenting a plurality of content items. *Id.* The modification of *Ryu*'s system would improve the electronic device in the same way as *Hodge* and accomplish *Hodge*'s stated advantages of preventing unauthorized users from viewing information on the display and minimizing power consumption. *Hodge*, ¶¶ 9, 28. There would have been a reasonable expectation of success in modifying *Ryu*'s system, because the modification requires only simple programming techniques well within a PHOSITA's expertise. *Dec.*, 86–87.

Claim 4

[4] The method according to claim 1 wherein the recognition mechanism includes a facial recognition method.

As explained for limitation 1(d), *Ryu* as modified by *Hodge* teaches the use of a facial recognition method as its recognition mechanism. *See supra*, Claim 1(d).

Claim 5

[5] The method according to claim 1 wherein the plurality of content items includes at least one of the following items: news, alert, update, email, text message, sponsored content, and other information.

As explained for limitation 1(e), *Ryu* teaches wherein the plurality of content items includes at least one of news, alert, update, email, text message, sponsored content, and other information. See *supra* Claim 1(e). Particularly, *Ryu* teaches the displayed gateway screen as displaying a lock release message, manufacturer identification information, and app icons (i.e., other information). *Ryu*, 37:54–60, Fig. 18F.

Claim 8

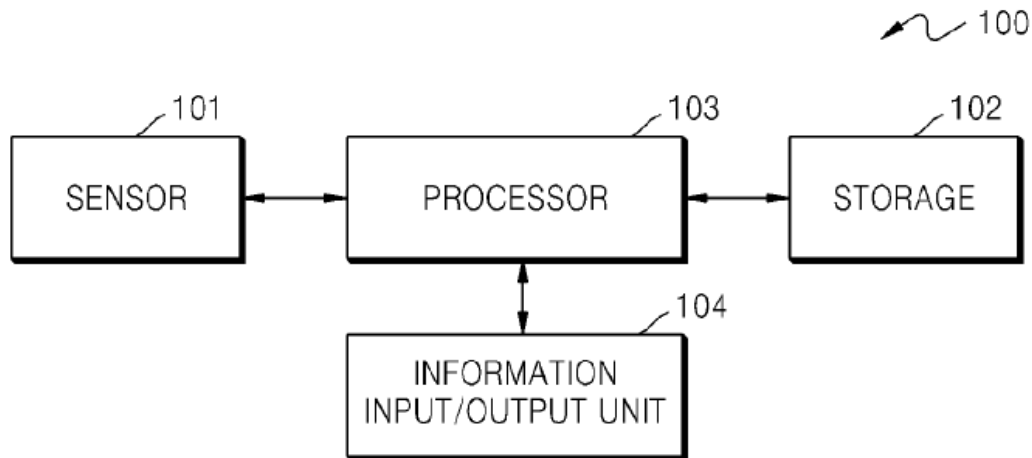
[8(Pre)] A method for presenting information at an electronic device, comprising:

See supra, Claim 1(Pre).

[8(a)] monitoring the electronic device or physical movement of the electronic device to sense an act made by a user when a display of the electronic device has an idle screen or a screen in standby mode, inactive mode, or screen-saver mode;

As explained for limitation 1(b), *Ryu* teaches an electronic device that detects an act such as the physical movement of the electronic device by a user when the display of the electronic device is in an idle, standby, or inactive mode. *See supra*, Claim 1(b). Furthermore, *Ryu* expressly teaches monitoring the physical movement of the electronic device to sense an act made by the user. Specifically, *Ryu* teaches the electronic device 100 as including a sensor 101 “to sense movement of the device 100.” *Ryu*, 4:63–65, 5:15–16. Fig. 1 below depicts the sensor 101 within the electronic device 100:

FIG. 1



Id. at Fig. 1. *Ryu* teaches that when the electronic device 100 is in a standby mode, “the device 100 may include a low power state in which only the sensor 101, the storage 102, and the processor 103 operate.” *Id.* at 5:52–54. Furthermore, *Ryu* expressly teaches that “[t]he sensor 101 detects movement of the device 100[,]” which includes “rotation based movement such as an upside-down movement of the device 100, a rotation direction based movement (for example, a clockwise direction movement, a counter clockwise direction movement, a +z axial direction movement, and a -z axial direction movement, a perpendicular direction based movement ...” *Id.* at 6:47–60, 6:61–67 (teaching that the sensor 101 may be a gyro or an accelerometer sensor). A PHOSITA would have understood that by detecting 180-degree rotation of the device that it was movement by the user, rather than movement to the device from some other action (e.g., vibrations, movement while in a car,

being dropped, etc.). In other words, a PHOSITA would have understood that because Ryu is detecting an intentional 180-degree movement of the device it indicates an act made by the user and distinguishes that act from other acts not made by the user. *Dec.*, 88–89.

Thus, *Ryu* teaches monitoring the electronic device to sense the act made by a user when the display is in a standby mode, at least because *Ryu* expressly teaches that the electronic device 100 contains a sensor 101 (e.g., a gyro or accelerometer) that remains powered on when the device 100 is in a standby mode for the purpose of detecting movement of the device. *Dec.*, 90.

[8(b)] performing gaze detection only after sensing the act;

See supra, Claim 1(b).

[8(c)] determining whether the user is recognized via a recognition mechanism;

See supra, Claim 1(d).

***[8(d)] detecting whether the user looks at a direction toward the electronic device;
and***

See supra, Claim 1(c).

[8(e)] presenting a plurality of content items when the user is recognized via the recognition mechanism and it is detected that the user looks at a direction toward the electronic device.

See supra, Claim 1(e).

Claim 9

[9] The method according to claim 8 wherein the plurality of content items is unrelated to content presented before a state of the idle screen, the inactive mode, or the screen-saver mode.

See supra, Claim 2.

Claim 11

[11] The method according to claim 8 wherein the plurality of content items includes at least one of the following items: news, alert, update, email, text message, sponsored content, and other information.

See supra, Claim 5.

Claim 12

[12] The method according to claim 8 wherein the recognition mechanism includes a facial recognition method.

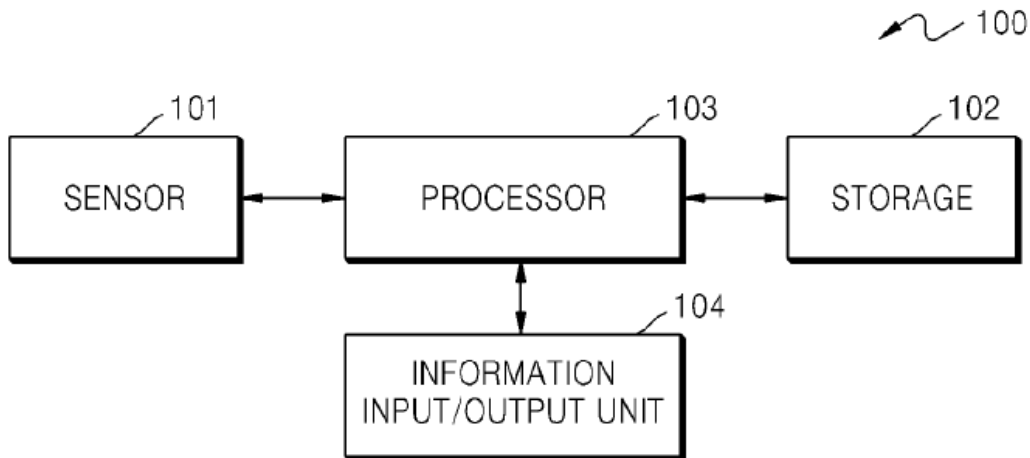
See supra, Claim 1(d).

Claim 14

[14(Pre)] An electronic device comprising: a processor, a recognition mechanism, and a memory or memory unit coupled to the processor, the processor operable when executing certain instructions to:

As explained above, Ryu in view of Hodge teaches an electronic device that contains a recognition mechanism. *See supra*, Claim 1(d). Furthermore, Ryu teaches an electronic device that contains a processor and storage (i.e., a memory unit) coupled to the processor. Particularly, Ryu teaches the electronic device 100 includes a processor 103 and storage 102:

FIG. 1



Ryu, Fig. 1, 4:63–65 (teaching the device 100 includes storage 102 and a processor 103), 16:34–39 (teaching that the “processor 103 may be one or more processors for controlling a general operation of the device 100[,]” and that “[t]he processor 103 may be a controller, a microprocessor, a digital signal processor, etc.”).

Furthermore, *Ryu* teaches that “[t]he storage 102 stores at least one program and data related to the at least one program[]” (e.g., a program to control the device to perform a function based on detected motion information) *Id.* at 7:34–41. Thus, a PHOSITA would have understood that *Ryu* teaches an electronic device that comprises a processor and memory unit coupled to the processor at least because *Ryu* expressly teaches an electronic device 100 that contains a processor 103 connected to storage 102 (i.e., a memory unit) wherein the storage 102 further stores

at least one application program that may be used to control the device. *Dec.*, 91–93.

Additionally, a PHOSITA would have been motivated and found it obvious to include any necessary programming instructions and data for implementing Hodge’s facial recognition mechanism within Ryu’s memory 102 as this would have only required the implementation of simple programming techniques well within a PHOSITA’s expertise, and Ryu expressly teaches that storage 102 was capable of storing programs and data related to said programs for controlling the electronic device. *Dec.*, 53.

[14(a)] detect an act made by a user involving physical contact with the electronic device or physical movement of the electronic device when a display of the electronic device has an idle screen or a screen in standby mode, inactive mode, or screen-saver mode;

As described above, *Ryu* teaches detecting 180-degree rotation of the device performed by the user, rather than movement to the device from some other action, and a PHOSITA would have understood that because *Ryu* is detecting an intentional 180-degree movement of the device such a movement indicates an act made by the user and distinguishes that act from other acts not made by the user. *See supra*, Claim 8(a).

Ryu teaches the processor 103 is operable when executing instructions to detect an act made by the user involving physical movement of the electronic device 100 when a display is in a standby mode. As explained above, *Ryu* teaches the

electronic device 100 includes a sensor 101 (e.g., a gyro or an accelerometer) for sensing movement of the device 100 while in a standby mode wherein the standby mode of the device 100 has a black screen state. *See supra*, Claim 1(a).

Ryu further teaches that “[t]he electrical signals output by the sensor 101 may be referred to as a sensing value of the movement of the device 100 or information regarding the movement of the device 100.” *Ryu*, 7:30–33. *Ryu* teaches that when in the standby mode and displaying a black screen, the device 100 would receive a sensing value from the sensor 101 indicating rotation of the device (e.g., a 180° clockwise rotation) and that “the processor 103 recognizes the motion information of the device 100 ...” *Id.* at 10:46–52. Particularly, *Ryu* teaches that “[t]he recognizing of the motion information by the processor 103 according to the sensing value may be based on an operation of detecting the motion information from the storage 102 by using the received sensing value. **Thus, the recognizing of the motion information by the processor 103 may be referred to as detecting of the motion information** but is not limited thereto.” *Id.* at 10:52–58.

Thus, a PHOSITA would have understood that *Ryu* teaches the processor of the electronic device is operable when executing instructions to detect an act made by the user involving physical movement of the electronic device when a display is in a standby mode at least because *Ryu* teaches the electronic device 100 (when in a standby mode and displaying a black screen) receives a sensing value from the

sensor 101 (i.e., motion information regarding the user's movement of the device 100) and the processor 103 of the device 100 recognizes said motion information (i.e., detects an act by the user). *Dec.*, 94–96.

[14(b)] perform gaze detection only after detecting the act;

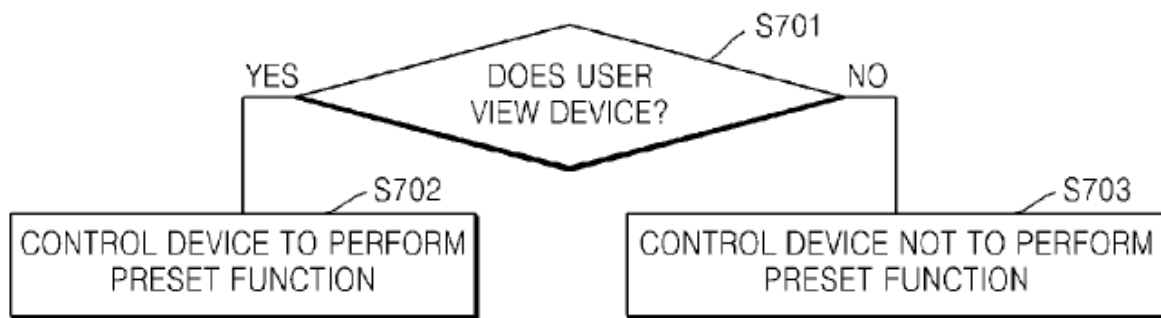
As explained above, *Ryu* teaches the electronic device 100 only performs gaze detection after detecting the user's physical movement of the device 100 (i.e., the act). *See supra*, Claim 1(b). Particularly, *Ryu* teaches that the processor 103 of the device 100 then attempts to determine whether a user looks at the device 100 (i.e., gaze detection) by performing face recognition (e.g., feature value detection) on an image taken by the front camera wherein the processor 103 is provided a facial recognition application that is stored in storage 102 (i.e., a memory unit) and executes said application program for determining if a user looks at the device 100. *Id.* at 19:40–67, Fig. 8.

Thus, a PHOSITA would have understood that *Ryu* teaches the processor is operable when executing instructions of performing gaze detection after detecting the act at least because *Ryu* teaches the processor 103 of device 100 executes a facial recognition application provided by storage 102 for the purpose of determining if a user looks at the device 100 after detecting physical movement of the device 100 by the user (i.e., detecting the act). *Dec.*, 97–98.

[14(c)] determine whether the user looks at a direction toward the electronic device;

As explained above, *Ryu* teaches that after running the facial recognition, the processor 103 then determines whether a user looks at the device 100 (i.e., determines whether the user looks at a direction towards the electronic device). *See supra*, Claim 1(c). *Ryu* depicts the process of the processor 103 determining whether the user looks at the device 100 in Fig 7:

FIG. 7



Ryu, Fig. 7, *see also id.* at Fig. 8, 18:65–19:6 (teaching that the Fig. 7 is a flowchart of a process performed by the processor 103 and that particularly operation S701 is the step where the processor 103 “determines whether the user looks at the device 100 before performing the preset function.”). Thus, *Ryu* teaches the processor is operable when executing instructions of determining if the user looks at a direction towards the electronic device at least because *Ryu* teaches the processor of the device 100 performs the operation step S701 which determines whether the user looks at the device 100.

***[14(d)] determine whether the user is recognized via the recognition mechanism;
and***

As explained above, *Ryu* in view of *Hodge* teaches recognizing a user of the device 100 via a recognition mechanism. *See supra*, Claim 1[d]. Furthermore, as explained above a PHOSITA would have found it obvious and been motivated to include any necessary programming instructions and data for implementing *Hodge*'s facial recognition mechanism within *Ryu*'s memory 102. *See supra*, Claim 14(Pre).

Thus, *Ryu in view of Hodge* teaches the processor of the electronic device would be operable when executing instructions for determining if the user is recognized via a recognition mechanism at least because *Ryu* in view of *Hodge* teaches recognition of a user via a recognition mechanism and a PHOSITA would have found it obvious to include the necessary programming instructions/data within *Ryu*'s memory 102 for execution by the processor 103 for performing said recognition mechanism. *Dec.*, 99–100.

[14(e)] present a plurality of content items when it is determined that the user looks at a direction toward the electronic device and the user is recognized via the recognition mechanism.

As discussed above *Ryu* teaches that only after determining if the user was looking at the device 100 and performing feature value detection will the device 100 then change from a standby mode to an active mode in which the information input/output unit 104 (i.e., display screen) enters an active state and performs a preset function (e.g., displays information to the user). *See supra*, Claim 1(e). Additionally, as discussed above *Ryu* further teaches that the processor 103 of device 100 may

display a gateway screen containing a plurality of content items before performing the preset function. *Id.*

Thus, *Ryu* teaches the processor of the electronic device is operable when executing instructions of presenting a plurality of content items at least because *Ryu* teaches that the processor 103 during operation step S609 of Fig. 6B will display a gateway screen containing a plurality of content items. *Dec.*, 101.

Claim 15

[15] The electronic device according to claim 14 wherein the plurality of content items is unrelated to information presented before a state of the idle screen, the inactive mode, or the screen-saver mode.

See supra, Claim 2.

Claim 16

[16] The electronic device according to claim 14 wherein presentation of the plurality of content items is stopped when it is detected that the user looks at a direction other than the one toward the electronic device.

See supra, Claim 3.

Claim 18

[18] The electronic device according to claim 14 wherein the plurality of content items includes at least one of the following items: news, alert, update, email, text message, sponsored content, and other information.

See supra, Claim 5.

Claim 20

[20] The electronic device according to claim 14 wherein the recognition mechanism includes a facial recognition method.

See supra, Claim 4.

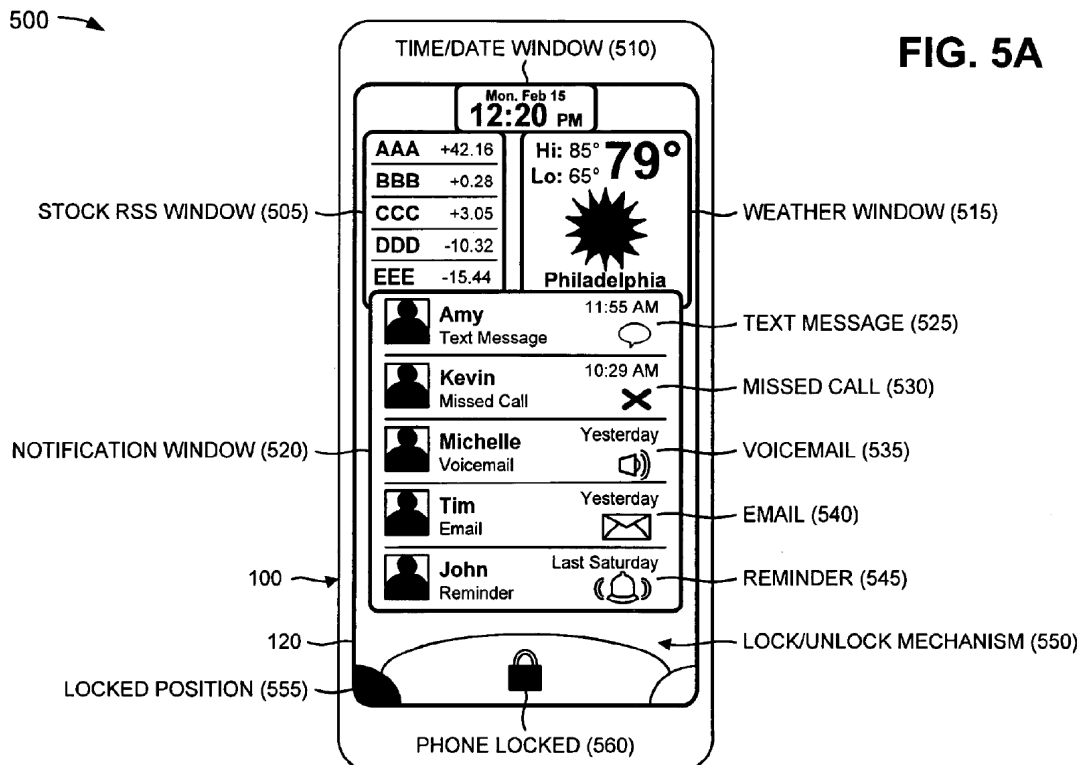
B. Ground 2: Ryu in view of Hodge, in further view of Stallings renders Claims 1, 6, 8, 10, 14, and 19 obvious

Overview of Stallings

Stallings et al., U.S. Patent No. 8,331,992 filed on Dec. 19, 2008, and granted on December 11, 2012, qualifies as prior art under 35 U.S.C. § 102(a)(2) (post-AIA) (“§ 102(a)(2)”). *Stallings* (Ex. 1006). *Stallings* was not cited or considered during prosecution of the ’564 Patent.

Like *Ryu*, *Stallings* teaches a mobile communication device that while in a sleep or locked state may receive information and then displays one or more windows containing the information upon receiving an input from a user to wake up. *Stallings* (Ex. 1006), Abstract, 2:1–16 (teaching that the mobile device may receive current information while in a sleep (or locked) state and associate one or more pieces of that information with one or more corresponding windows and further displays said windows after receiving an input from a user to wake up), 2:26–30 (teaching that the “term ‘sleep state,’ as used herein, is intended to be broadly interpreted to include a low power mode for a mobile communication device ...”), 7:17–20 (teaching a “user provides an input to wake up device 100 (e.g., via selecting a portion of display 120), device 100 may receive the input and may wake up (e.g., may illuminate display 120) in a locked state.”).

Particularly, *Stallings* teaches that upon the mobile device receiving the user input to wake up, “[d]evice 100 may display (e.g., via display 120 and while still in a locked state) one or more of stock RSS window 505, time/date window 510, weather window 515, and/or notification window 520, as well as any associated current information 400.” *Id.*, 7:20–24. *Stallings* depicts this displaying of multiple RSS windows on a display in response to a user input to ‘wake up’ said device in Fig. 5A below:



Id., Fig. 5A, see also 6:52–7:1 (teaching that display 120 displaying RSS windows 505, 510, 515, etc. And that the term “‘window,’ as used herein, is intended to be broadly interpreted to include any display mechanism (e.g., a window, a menu, etc.)

capable of being displayed by display 120 and of displaying current (or live) information (e.g., current information 400) received by device 100 when device 100 is in the locked state.”).

Thus, a PHOSITA would have understood that *Stallings* teaches an electronic device that while in a standby mode detects a user physically interacting with the electronic device and in response to detecting input to the device by the user displaying upon the device’s screen a plurality of windows with each window containing content (e.g., stock information, time/date information, weather information, and notifications). *Dec.*, 102–103.

Furthermore, *Stallings* teaches that Really Simple Syndication (RSS) feeds are used to provide the content (e.g., the stock information, weather, etc.) displayed by the RSS windows. *Stallings*, 5:51–62, *see also* Fig. 4. A PHOSITA would have understood that the RSS feeds used to provide the information to the RSS windows as being a service. *Stallings* expressly teaches that “[a] user of device 100 may subscribe to RSS feeds 410 by entering uniform resource locators (URLs) associated with RSS feeds 410 into the RSS reader. The RSS reader may check the user’s subscribed to RSS feeds 410 regularly for new content, and may download any updates (e.g., to device 100).” *Id.*, 5:62–67. Thus, a PHOSITA would have understood that the RSS feeds of *Stallings* was a “service” that provided a plurality of content to be displayed on the mobile device. *Dec.*, 102–103.

Because *Stallings*, like the '564 Patent, discloses an electronic device that displays a plurality of content items to a user of a device after the user interacts with said device, *Stallings* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the '564 Patent, and is therefore analogous art. *Dec.*, 104.

Reasons to Combine Ryu/Hodge and Stallings

A PHOSITA would have been motivated to combine the teachings of *Ryu* as modified by *Hodge* (“*Ryu/Hodge*”) with those of *Stallings*, such that *Ryu/Hodge* would display a plurality of RSS windows upon a user interacting with a mobile device as taught by *Stallings* prior to ultimately performing the function corresponding to the user’s motion at least because doing so would improve the functionality of *Ryu/Hodge*’s device. *Dec.*, 105–106. Such an addition uses *Stallings*’s well-known technique of displaying RSS windows in response to a user’s interaction, with *Ryu/Hodge*’s electronic device that determines whether the user is both looking at the device and a recognized user prior to displaying an intermediate screen (e.g., a gateway screen) and ultimately performing a function corresponding to the user’s interaction. The modification of *Ryu/Hodge*’s system would improve the electronic device’s functionality in the same way as *Stallings* and allow for a user to be presented with various pieces of information (content) on the gateway screen that the user would find relevant prior to performing a function. The modified

Ryu/Hodge system would thus provide a user with a plurality of windows on a display screen each containing up-to-date information relating to areas of interest to a user. *Id.* Indeed, as *Stallings* expressly notes, a user would be able to configure the RSS windows presented to be those windows which a user was interested in. *Stallings*, 6:63-7:1. A PHOSITA would have recognized *Stallings*'s functionality allowed the user to be presented with a quick and concise overview of pertinent information that would allow a user to be informed or notified of any changes. *Dec.*, 105.

There would have been a reasonable expectation of success in modifying *Ryu/Hodge*'s electronic device because the modification would have required only simple programming techniques well within a PHOSITA's expertise, and *Ryu/Hodge* already teaches displaying a gateway screen that contains multiple pieces of information to a user prior to ultimately performing a function that correlates to a user's input. *Ryu*, 18:61-64, *Dec.*, 106. A PHOSITA would have understood that replacing the information presented to a user in *Ryu/Hodge*'s gateway screen with that of the RSS windows taught by *Stallings* would have allowed for the user to select various types of information that they would like to stay informed about and be presented with said information in a concise and easy to understand format prior to performing a function that they wished to perform. Thus, a PHOSITA would have understood that displaying such RSS windows (i.e., a plurality of content items) on

Ryu/Hodge's gateway screen would have kept a user up-to-date and notified of any changes that were pertinent. *Id.*

Claim 1

[1(Pre)] A method for presenting information at an electronic device, comprising:

See supra Ground I, Claim 1(Pre).

[1(a)] detecting an act made by a user involving physical contact with the electronic device or physical movement of the electronic device when a display of the electronic device has an idle screen or a screen in standby mode, inactive mode, or screen-saver mode;

See supra Ground I, Claim 1(a).

[1(b)] performing gaze detection only after detecting the act;

See supra Ground I, Claim 1(b).

[1(c)] ascertaining whether the user looks at a direction toward the electronic device;

See supra Ground I, Claim 1(c).

[1(d)] determining whether the user is recognized via a recognition mechanism; and

See supra Ground I, Claim 1(d).

[1(e)] presenting a plurality of content items when the user is recognized via the recognition mechanism and it is ascertained that the user looks at a direction toward the electronic device.

As explained in Ground I, *Ryu* in view of *Hodge* teaches displaying an intermediate gateway screen (e.g., *Ryu's* Figure 18F) on the electronic device prior to performing a function yet after determining if a user is both gazing at the

electronic device and recognized. *See supra* Ground I, Claims 1(d) and 1(e). However, a PHOSITA would have been motivated and found it obvious to modify *Ryu*'s gateway screen to display RSS windows that a user had configured for display, in view of *Stallings*. As explained above, *Stallings* expressly teaches a user configures the number of, arrangement, and the types of information provided in the RSS windows. *Stallings*, 6:55–7:1. Moreover, a PHOSITA would have recognized and found it obvious to modify *Ryu*'s gateway screen to include *Stallings*'s RSS windows containing their corresponding information (i.e. a plurality of content items) after a user wakes up said device because it would have improved *Ryu*'s electronic device by presenting to a user a quick and concise overview of information that a user wished to remain informed about (e.g., updating the user of any changes to weather, stocks, calls, emails, texts, etc.). *See supra* IV.B (Reasons to Combine *Ryu*/Hodge and *Stallings*). Thus, a PHOSITA would have found it obvious to modify *Ryu* in view of *Stallings* and the combination discloses this limitation. Dec., 107–108.

Claim 6

[6] The method according to claim 1 wherein the plurality of content items is arranged by a service.

Stallings expressly teaches that the content provided in the RSS windows is provided by RSS feeds, and that the device 100 will regularly check the RSS feeds for new content and download any updates to the device 100. *Stallings* 5:56–67.

Stallings further teaches that the RSS feeds are subscribed to by the user “by entering uniform resource locators (URLs) associated with RSS feeds 410 into the RSS reader.” *Id.* A PHOSITA would have thus understood that the RSS windows displayed a plurality of content items arranged by a service at least because the content displayed in each of the RSS windows was downloaded from a corresponding URL to which the user had subscribed. *Dec.*, 109-111.

Claim 8

[8(Pre)] A method for presenting information at an electronic device, comprising:

See supra, Ground I, Claim 8(Pre).

[8(a)] monitoring the electronic device or physical movement of the electronic device to sense an act made by a user when a display of the electronic device has an idle screen or a screen in standby mode, inactive mode, or screen-saver mode;

See supra Ground I, Claim 8(a).

[8(b)] performing gaze detection only after sensing the act;

See supra, Ground I, Claim 8(b).

[8(c)] determining whether the user is recognized via a recognition mechanism;

See supra, Ground I, Claim 8(c).

***[8(d)] detecting whether the user looks at a direction toward the electronic device;
and***

See supra, Ground I, Claim 8(d).

[8(e)] presenting a plurality of content items when the user is recognized via the recognition mechanism and it is detected that the user looks at a direction toward the electronic device.

See supra, Ground II, Claim 1(e); *Dec.*, 112.

Claim 10

[10] The method according to claim 8 wherein the plurality of content items is arranged by a service.

See supra, Ground II, Claim 6; *Dec.*, 113.

Claim 14

[14(Pre)] An electronic device comprising: a processor, a recognition mechanism, and a memory or memory unit coupled to the processor, the processor operable when executing certain instructions to:

See supra, Ground I, Claim 14(Pre).

[14(a)] detect an act made by a user involving physical contact with the electronic device or physical movement of the electronic device when a display of the electronic device has an idle screen or a screen in standby mode, inactive mode, or screen-saver mode;

See supra, Ground I, Claim 14(a).

[14(b)] perform gaze detection only after detecting the act;

See supra, Ground I, Claim 14(b).

[14(c)] determine whether the user looks at a direction toward the electronic device;

See supra, Ground I, Claim 14(c).

[14(d)] determine whether the user is recognized via the recognition mechanism; and

See supra, Ground I, Claim 14(d).

[14(e)] present a plurality of content items when it is determined that the user looks at a direction toward the electronic device and the user is recognized via the recognition mechanism.

See supra, Ground II, Claim 1(e), *Dec.*, 114.

Claim 19

[19] The electronic device according to claim 14 wherein the user relies on a service to arrange the plurality of content items.

See supra, Ground II, Claim 6, *Dec.*, 115.

V. THE *FINTIV* FACTORS FAVOR INSTITUTION

Under the “*Fintiv* factors,” the Board may consider parallel litigation, including an early trial date, in determining whether to institute under 35 U.S.C. § 314(a). *NHK Spring Co., Ltd., v. Intri-Plex Technologies, Inc.*, IPR2018-00752, Paper 8 at 19–20 (PTAB Sept. 12, 2018) (precedential); *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 2–3, 6 (PTAB Mar. 20, 2020) (precedential). Those factors favor institution here.

A. Stay

Parallel litigation is ongoing. While no stay has been requested, the parties have agreed to stay the litigation upon Apple filing this Petition for *Inter Partes* Review, thus favoring institution. Ex. 1009, 2. At worst, this factor is neutral because the Board “will not attempt to predict” how the district court will proceed. *Sand Revolution II, LLC v. Continental Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB Jun. 16, 2020).

B. Proximity of the Court’s Trial Date

“This factor looks at the *proximity* of the trial date to the date of [FWD] to assess the weight to be accorded a trial date set earlier than the expected [FWD] date.” *Shenzhen Carku Tech. Co., Ltd. v. The Noco Co.*, IPR2020-00944, Paper 20 at 61 (PTAB Nov. 12, 2020). The District Court recently extended the patent case schedule, which does not include the trial date, but sets the conclusion of the claim construction proceedings for October 10, 2023. Ex. 1009 (*Order Extending Patent Case Schedule*). The Board’s FWD in this proceeding will be due approximately August 2024, which will likely occur before any trial will proceed against Petitioner. This factor therefore weighs heavily in favor of institution.

C. Investment in Parallel Proceeding

The parties have invested little in the parallel proceeding. Li has served initial infringement contentions covering all asserted patents and Apple will serve invalidity contentions on May 15, 2023. Ex. 1009 (*Order Extending Patent Case Schedule*). Further, as noted above, claim construction will not conclude until October 10, 2023. *Id.* And the deadline to file dispositive motions has not yet been set. *Id.* This factor weighs in favor of institution.

D. Overlap

Petitioner stipulates that if the Board institutes IPR, Petitioner will not seek resolution in the District Court of any ground of invalidity for the ’564 Patent that utilizes the prior art references relied upon in the Proposed Grounds. Petitioner’s

proposal is comprehensive, narrows the issues, and ensures there is no overlap between the '564 Patent invalidity theories before the Board and before the District Court. Petitioner's proposed stipulation is far more restrictive than a *Sand Revolution* stipulation, which excludes only the same grounds advanced in the IPR, allowing the Petitioner to rely on the same references in the two tribunals so long as the reliance is not identical.

E. Same Party

The Parties are the same. However, members of the Board have noted *Fintiv* addresses only the scenario where the petitioner is unrelated to the defendants in litigation, which weighs against denying institution, but *Fintiv* “says nothing about situations in which the petitioner is the same as, or is related to, the district court defendant.” *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00122, Paper 15 at 10-11 (PTAB May 15, 2020) (APJ Crumbley, dissenting) (disfavoring a “defendant in the district court” is “contrary to the goal of providing district court litigants an alternative venue to resolve questions of patentability”).

F. Other Circumstances

“[W]here the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, **that determination alone** demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” *Hewlett Packard Enterprise Co., et al. v. Billjco LLC*,

IPR2022-00420, Paper 17, at 6 (PTAB July 12, 2022) (“[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence”). The strength of Petitioner’s Proposed Grounds weighs strongly in favor of institution. *Id.* (refusing to deny institution under *Fintiv* based solely on the strength of Petitioner’s grounds).

VI. CONCLUSION

For the forgoing reasons, Petitioner respectfully requests *inter partes* review of the Challenged Claims.

Respectfully submitted,

BY: /s/ Adam P. Seitz

Adam P. Seitz, Reg. No. 52,206

Clifford T. Brazen, Reg. No. 72,927

Paul R. Hart, Reg. No. 59,646

COUNSEL FOR PETITIONER

VII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)

A. Real Party-In-Interest

The Petitioner is the real party-in-interest. 37 C.F.R. § 42.8(b)(1).

B. Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner is aware of the following pending matters involving the '564 Patent that may be affected by this proceeding:

Apple Inc. v. Chian Chiu Li, No. 3:22-cv-02956-TLT (N.D. Cal.)

C. Lead and Back-Up Counsel

Petitioner provides the following designation and service information for lead and back-up counsel. 37 C.F.R. § 42.8(b)(3) and (b)(4).

Lead Counsel	Back-Up Counsel
Adam P. Seitz (Reg. No. 52,206) adam.seitz@eriseip.com PTAB@eriseip.com	Clifford T. Brazen (Reg. No. 72,927) clifford.brazen@eriseip.com
<u>Postal and Hand-Delivery Address:</u> ERISE IP, P.A. 7015 College Blvd., Ste. 700 Overland Park, Kansas 66211 Telephone: (913) 777-5600 Fax: (913) 777-5601	<u>Postal and Hand-Delivery Address:</u> ERISE IP, P.A. 7015 College Blvd., Ste. 700 Overland Park, Kansas 66211 Telephone: (913) 777-5600 Fax: (913) 777-5601

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 11,016,564 (“ ’ 564 Patent”)
Exhibit 1002	File History of U.S. Patent No. 11,016,564 (“ <i>File History for ’ 564 Patent</i> ”)
Exhibit 1003	Declaration of Benjamin B. Bederson, PhD (“ <i>Dec.</i> ”)
Exhibit 1004	U.S. Patent No. 10,540,013 to Ryu et al. (“ <i>Ryu</i> ”)
Exhibit 1005	U.S. Patent Publication No. 2010/0079508 to Hodge et al. (“ <i>Hodge</i> ”)
Exhibit 1006	U.S. Patent No. 8,331,992 to Stallings et al. (“ <i>Stallings</i> ”)
Exhibit 1007	U.S. Patent Publication No. 2013/0015946 to Lau et al. (“ <i>Lau</i> ”)
Exhibit 1008	File History of U.S. Patent No. 10,540,013 (“File History for ’013 Patent”)
Exhibit 1009	Order Extending Patent Case Schedule

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. §42.24 that the foregoing Petition for *Inter Partes* Review, excluding any table of contents, mandatory notices under 37 C.F.R. §42.8, certificates of service or word count, or appendix of exhibits, contains 13,530 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: February 7, 2023

BY: /s/ Adam P. Seitz
Adam P. Seitz, Reg. No. 52,206
COUNSEL FOR PETITIONER

CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on February 7, 2023, a complete and entire copy of this Petition for *Inter Partes* Review including exhibits was provided via Federal Express to the Patent Owner by serving the correspondence address of record for the '564 Patent as listed on PAIR:

Chian Chiu Li
5773 Tan Oak Drive
Fremont, CA 94555-3373

BY: /s/ Adam P. Seitz
Adam P. Seitz, Reg. No. 52,206

COUNSEL FOR PETITIONER