

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**SAMSUNG ELECTRONICS., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,**
Petitioners,

v.

MAXELL, LTD.,
Patent Owner

Case: IPR2025-01316

U.S. Patent No. 10,812,646

**PATENT OWNER PRELIMINARY RESPONSE TO PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 10,812,646**

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Jury Trial Transcript, Vol. 4, <i>Maxell, Ltd. v. Samsung Elecs. Co., Ltd.</i> , No. 5:23-cv-00092-RWS (E.D. Tex.)	2005
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Law360 Article, “Maxell, Huawei Reach Terms To End Smartphone Patent Suit”	2010
Hudson Institute Article, “Google’s Loss to Sonos Settles It, Big Tech Has an IP Piracy Problem”	2011
PatentRenewal.com Article, “which-companies-hold-the-most-patents-in-the-world”	2012
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LISTING OF CHALLENGED CLAIMS¹

Claim	Claim Text
[1pre]	A portable terminal apparatus comprising:
[1a]	a display;
[1b]	an operation input interface configured to receive an input corresponding to a user operation;
[1c]	a wireless communication interface configured to perform communication over a wireless local area network; and
[1d]	a processor programmed to control state transitions of the portable terminal apparatus to and from a sleep state and further performing a plurality of display modes, the plurality of display modes including:
[1e]	a first display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on the display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a first condition, wherein the first condition is met when a control screen for remotely and wirelessly controlling an external device via the wireless

¹ For convenience purposes only, Patent Owner adopts for this Preliminary Response the numbering of claim elements advanced by Petitioners in the Petition (Paper 1). Patent Owner does not concede the appropriateness of such grouping and numbering of claim elements.

	communication interface is not displayed on the display before the portable terminal apparatus enters a sleep state;
[1f]	a second display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on the display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a second condition, wherein the second condition is met when the wireless communication interface is unable to communicate with the external device and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state; and
[1g]	a third display mode during which a control icon and a first screen to be moved to a screen for performing authentication to execute an unlock operation are displayed on the display when the portable terminal apparatus wakes up from a sleep state based on a third condition, wherein the third condition is met when the wireless communication interface is able to communicate with the external device and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state,
[1h]	wherein the control screen is used to execute control operations on the external device based on the input received by the operation input interface, and
[1i]	wherein, when the control icon is selected in the third display

	mode without the unlock operation, the wireless communication interface transmits a remote control signal corresponding to the selected control icon to the external device.
[2pre]	The portable terminal apparatus according to claim 1,
[2a]	wherein the portable terminal apparatus is a smartphone and the external device is used for display of a video content.
[3pre]	The portable terminal apparatus according to claim 1,
[3a]	wherein the control screen includes a plurality of selectable control icons that enable a user to execute control operations on content being displayed under the control of the external device, the control operations including an operation for selection of content to be displayed.
[4pre]	The portable terminal apparatus according to claim 1, further comprising:
[4a]	a GPS receiver;
[4b]	a sensor determining a movement state of the portable terminal apparatus;
[4c]	an infrared sensor;
[4d]	a gyro sensor determining angular movement of the portable terminal apparatus; and
[4e]	a physical button executing a predetermined operation when a user pushes the physical button.
[5pre]	The portable terminal apparatus according to claim 1, further

	comprising:
[5a]	a plurality of physical buttons,
[5b]	wherein the simultaneous pushing of the plurality of physical buttons results in a single predetermined operation being executed by the portable terminal apparatus.
[6pre]	The portable terminal apparatus according to claim 1,
[6a]	wherein the unlock operation in the first display mode, the second display mode, and the third display mode is initiated by sliding the first screen.
[7pre]	The portable terminal apparatus according to claim 1,
[7a]	wherein in the third display mode the control icon and the first screen are displayed simultaneously on the display and are arranged such that at least a portion of the control icon is displayed in a top half of the display screen.
[8pre]	The portable terminal apparatus according to claim 1,
[8a]	wherein the wireless communication interface is configured to communicate with the external device by implementing an encryption scheme.
[9pre]	The portable terminal apparatus according to claim 8,
[9a]	wherein the encryption scheme is WEP (Wired Equivalent Privacy).
[10pre]	The portable terminal apparatus according to claim 8,
[10a]	wherein the encryption scheme is WPA (WiFi Protected Access).

[11pre]	The portable terminal apparatus according to claim 8,
[11a]	wherein the encryption scheme is WPA (WiFi Protected Access) 2.
[12pre]	The portable terminal apparatus according to claim 1,
[12a]	wherein the portable terminal apparatus has a function not to display the control icon even in the third display mode.
[13pre]	The portable terminal apparatus according to claim 1
[13a]	wherein the portable terminal apparatus is configured to allow a user to select whether to display the control icon even in the third display mode.
[14pre]	A method executed by a portable terminal apparatus, the method comprising:
[14a]	receiving, by an operation input interface, an input corresponding to a user operation;
[14b]	performing wireless communication over a wireless local area network;
[14c]	controlling state transitions of the portable terminal apparatus to or from a sleep state;
[14d]	performing a plurality of display modes, the plurality of display modes including:
[14e]	a first display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on a display without display of a control icon when the portable terminal apparatus wakes up from a

	sleep state based on a first condition, wherein the first condition is met when a control screen for remotely and wirelessly controlling an external device via performing the wireless communication is not displayed on the display before the portable terminal apparatus enters a sleep state;
[14f]	a second display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on the display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a second condition, wherein the second condition is met when the portable terminal apparatus is unable to communicate with the external device via performing the wireless communication and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state; and
[14g]	a third display mode during which a control icon and a first screen to be moved to a screen for performing authentication to execute an unlock operation are displayed on the display when the portable terminal apparatus wakes up from a sleep state based on a third condition, wherein the third condition is met when the portable terminal apparatus is able to communicate with the external device via performing the wireless communication and the control screen is displayed on the display before the portable terminal apparatus enters a

	sleep state, wherein the control screen is used to execute control operations on the external device based on the input received by the operation input interface; and
[14h]	transmitting via wireless communication a remote control signal corresponding to the selected control icon to the external device when the control icon is selected in the third display mode without unlock operation.
[15pre]	The method according to claim 14,
[15a]	wherein the control screen includes a plurality of selectable control icons that enable a user to execute control operations on content being displayed under control of the external device, the control operations including an operation for selection of content to be displayed.
[16pre]	The method according to claim 14, further comprising:
[16a]	determining a position of the portable terminal apparatus;
[16b]	determining a movement state of the portable terminal apparatus;
[16c]	determining angular movement of the portable terminal apparatus; and
[16d]	executing a predetermined operation when a user pushes a physical button.
[17pre]	The method according to claim 14, further comprising:
[17a]	executing a single predetermined operation when a user simultaneously pushes a plurality of physical buttons on the

	portable terminal apparatus.
[18pre]	The method according to claim 14,
[18a]	wherein the unlock operation in the first display mode, the second display mode, and the third display mode is initiated by sliding the first screen.
[19pre]	The method according to claim 14,
[19a]	wherein in the third display mode the control icon and the first screen are displayed simultaneously on the display and are arranged such that at least a portion of the control icon is displayed in a top half of the display screen.
[20pre]	The method according to claim 14,
[20a]	wherein performing the wireless communication with the external device includes implementing an encryption scheme.
[21pre]	The method according to claim 20,
[21a]	wherein the encryption scheme is WEP (Wired Equivalent Privacy).
[22pre]	The method according to claim 20,
[22a]	wherein the encryption scheme is WPA (WiFi Protected Access).
[23pre]	The method according to claim 20,
[23a]	wherein the encryption scheme is WPA (WiFi Protected Access) 2.
[24pre]	The method according to claim 14,
[24a]	wherein the portable terminal apparatus has a function not to

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	display the control icon even in the third display mode.
[25pre]	The method according to claim 14,
[25a]	wherein the portable terminal apparatus is configured to allow a user to select whether to display the control icon even in the third display mode.

I. INTRODUCTION

Patent Owner Maxell, Ltd. (“Patent Owner”) respectfully requests that the Director deny institution of the Petition filed by Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (hereinafter “Petitioner” or “Samsung”) challenging the patentability of claims 1-25 (“challenged claims”) of U.S. Patent No. 10,812,646 (“the ’646 Patent”) (EX1001).

Petitioner has failed to demonstrate a reasonable likelihood of success on the grounds asserted in the Petition. None of the cited references, alone or in combination, teach or suggest the claimed three distinct display modes, which arise from logic requiring evaluation of both the UI state before the device entered sleep and the device’s communication status upon waking. As detailed below, Petitioner’s arguments rely on improper hindsight, piecing together elements from references addressing different problems while failing to show how a POSITA would arrive at this specific three distinct display modes logic. Moreover, the Petition’s conclusory assertions find no meaningful support in its expert declaration (EX1003), which simply parrots Petitioner’s conclusions without additional analysis or evidence. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight”).

For at least these reasons, Petitioner has failed to meet its burden of showing a reasonable likelihood of prevailing. Accordingly, the Director should deny Petitioner's request to institute *inter partes* review.

II. BACKGROUND

A. Overview of the '646 Patent

The '646 Patent, entitled "*Portable Terminal Apparatus*," is generally directed to improving the usability of portable devices, like smartphones, when they are used as remote controls for external electronic devices. At the time of the '646 Patent, when a portable device being used as a remote control entered a sleep state, a user was required to perform a full "lock function release operation such as the password authentication or the pattern authentication before performing a remote control operation". EX1001, 2:13-15. The patent identifies that this workflow leads to "poor operability as a remote controller". EX1001, 2:16. The object of the invention was to solve this problem by providing "a portable terminal apparatus having high operability as a remote controller while ensuring security performance". EX1001, 2:22-24. To accomplish this, the '646 Patent implements a specific control logic executed by the processor when the device wakes from a sleep state. This logic results in three distinct display modes, with the selection depending on evaluating two conditions: first, whether the remote control interface was active on the display

before the device went to sleep, and second, whether the device can currently communicate wirelessly with the external device upon waking. Specifically, the logic operates as follows: if the remote control interface was not active before sleep, the processor initiates a **first display mode**, presenting a standard lock screen without the control icon, regardless of current communication status. If the remote control interface was displayed before sleep, but the device cannot communicate upon waking, the processor initiates a **second display mode**. Although triggered by different conditions, the second display mode also results in showing the standard lock screen without the control icon. Only in the specific circumstance where the remote control interface was displayed before sleep AND the device can communicate upon waking does the processor initiate the **third display mode**, presenting both the control icon and the standard lock screen elements. This framework ensures the control icon is available for access only when contextually appropriate, thus enhancing operability without compromising security by requiring a full unlock in other situations.

B. Patent Prosecution History

U.S. Patent Application No. 16/576,079—which would ultimately issue as the '646 Patent—was filed on September 19, 2019. The '646 patent is a continuation of earlier applications and claims priority to PCT Application No.

PCT/JP2014/068826, filed on July 15, 2014.

During prosecution, the Examiner conducted a search and considered prior art related to controlling devices from a lock screen. EX1002, 60. In the Office Action dated November 29, 2019, the Examiner did not reject the claims over this prior art for anticipation or obviousness. *Id.*, 53-56. Instead, the only rejection was for non-statutory double patenting over two parent patents. *Id.* In fact, the Examiner explicitly stated that the claims would be allowable over the prior art if the double patenting issue were resolved. *Id.* The Examiner's subsequent Reasons for Allowance were highly specific, stating that the prior art of record failed to teach the core of the invention: the three distinct display modes that are conditionally triggered based on both the pre-sleep UI state and the device's connectivity status upon waking. *Id.*, 12-13. To overcome the sole rejection, the Applicant filed a Terminal Disclaimer and amended the claims (*Id.*, 45-46), which were then promptly allowed. *Id.*, 12. The Examiner's subsequent Reasons for Allowance were highly specific, stating that the prior art of record failed to teach the core of the invention. The Examiner found:

Specifically, the prior art of record fails to teach or suggest the three [distinct] display modes based on two conditions: 1) whether the control screen is displayed on the display before the portable terminal

apparatus enters a sleep state and 2) whether the wireless communication interface is able/unable to communicate with the external device

Id., 13.

This prosecution history demonstrates that the specific three distinct display modes of the '646 Patent was recognized by the USPTO as patentably distinct over the relevant art and the three modes need to be considered as such when analyzing the scope of the claim. In other words, the scope of the invention needs to be considered instead of performing a hindsight driven analysis where different unrelated display states are cobbled together by the Petitioner in an attempt to arrive at the claimed inventions. As shown below, Petitioners' prior art fails to disclose the same limitations the Examiner noted as the reasons for allowance.

C. Summary of Petitioner's Proposed Grounds for Unpatentability

Petitioner alleges that claims 1-25 of the '646 Patent would have been obvious under pre-AIA 35 U.S.C. § 103 and raises three grounds of alleged unpatentability.

Pet. 1. The alleged invalidity grounds are summarized as follows:

Ground	'646 Claims	Type of Challenge	References
1	1-3, 7, 12-15, 19, 24-25	§ 103	Esaka in view of Guihot

2	4-6, 16-18	§ 103	Esaka in view of Guihot, Bandyopadhyay
3	8-11, 20-23	§ 103	Esaka in view of Guihot, Sharif-Ahmadi

D. Petitioner's Relied-Upon References

1. Overview of Esaka

U.S. Patent No. 9,736,217 (“Esaka”) is generally directed to a method for providing quick access to a remote control interface on a portable terminal when the user activates the display from an “OFF state” or “standby state”. EX1004, 2:2-4; 3:26-31; 4:30-40. Esaka automatically shows the operational interface, basing its decision solely on conditions evaluated when the display activates, not any condition that was present prior to the display went to sleep. *Id.* 6:18-34; Fig. 7. Specifically, Esaka requires the terminal to detect physical movement via its motion sensor and, at the same time, confirm its connection to a predetermined network, such as a home network. *Id.* 6:18-34; 10:10-18. Esaka's method for deciding whether to show the operational interface depends entirely on these specific conditions present upon waking. *Id.* Fig. 7. Esaka includes no consideration of the state of the terminal's display or the application in use before it entered the “OFF state”.

2. Overview of Guihot

U.S. Patent No. 9,454,251 (“Guihot”) provides a method for maintaining remote control functionality when a mobile device’s display turns off due to inactivity. EX1005, 1:16-21. Guihot recognizes the usability problem of requiring a full unlock sequence simply to continue an ongoing remote control session, noting this can “detract from the user’s experience”. *Id.* 1:24-34. The solution allows the user to continue providing input via the touchscreen, even while the display remains inhibited or presents a lock screen, specifically because the remote control application was the last active process. *Id.* 13:55-14:3. Guihot’s method is narrowly focused on maintaining continuity for an already-active session, basing its logic entirely on the immediately preceding operational state of the device. It provides no mechanism or suggestion for evaluating the device’s current ability to communicate with the target device as part of its control logic. There is simply no consideration provided in Guihot on providing the remote control session based on whether the mobile device does not have the ability to communicate to the external device.

3. Overview of Bandyopadhyay

U.S. Patent No. 9,521,247 (“Bandyopadhyay”) is generally directed to improving user experience related to camera access, specifically “allowing easy access to a camera application when a mobile device is in an above-lock (or locked)

mode, while also preventing unauthorized access to other smart phone functionality” EX1006, Abstract. Bandyopadhyay describes user interface functions related primarily to camera access and general unlocking mechanisms, such as a slide control (*Id.*, 8:44-48; 8:54-62). However, while Bandyopadhyay discloses various conventional hardware components for user interface functions, its teachings are focused on camera access. It does not teach or suggest using these components for remote control purposes. The patent is focused on preventing accidental camera invocation, teaching that the device can perform a proximity check and require a button to be held for a predetermined time before waking the display to launch the camera.

4. Overview of Sharif-Ahmadi

U.S. Patent No. 10,375,343 (“Sharif-Ahmadi”) is generally directed to a system where a “gateway for location at a user premises is provided” and “[u]sers access services, such as video streaming, on their user devices via the gateway”. EX1007, Abstract. Sharif-Ahmadi discloses wireless security features such as WEP, WPA, and WPA2 in the context of the gateway’s Wi-Fi communication module. *Id.*, 7:47-56; 8:22-26. These security features are implemented at the gateway that acts as the Wi-Fi access point. However, Sharif-Ahmadi does not teach or suggest the claimed architecture where the portable terminal’s own wireless interface

implements an encryption scheme in direct communication with the external device.

III. LEVEL OF ORDINARY SKILL

For purposes of this preliminary response, a person of ordinary skill in the art would have had a Bachelor of Science degree in Electrical Engineering, Physics, Optics, or an equivalent degree, and at least one year of experience working in the field of optical engineering, optical design, or a related field. Additional education and/or experience may provide a substitute for one of the qualifications of a person of ordinary skill in the art.

While Patent Owner's definition of a person of ordinary skill in the art differs from that of Petitioner's (Pet., 13), the level of ordinary skill need not be resolved for the purposes of the preliminary response. Patent Owner reserves the right to contest Petitioner's definition at a later time.

IV. CLAIM CONSTRUCTION

For the purposes of the preliminary response, Patent Owner agrees that no terms need construction. Terms should be given their plain and ordinary meaning. Patent Owner reserves the right to contest Petitioner's claim construction at a later time. Patent Owner, however, notes that the plain and ordinary meaning of the claim dictates that the "first display mode," "the second display mode," and the "third display mode," are three distinct modes that are performed by the same processor of

the same portable terminal.

Thus, any obviousness analysis should account for whether the three modes are being performed by the same processor of the same portable terminal. The Petition, however, provides no analysis on how or why the three different processors across three different systems would be reconfigured to arrive at the claimed combination.

V. LEGAL STANDARD

A claim is also not patentable if the differences between the claim and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time of the invention. 35 U.S.C. § 103(a) (pre-AIA). Obviousness requires assessing (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial success, long felt but unsolved needs, failure of others, etc”. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)).

It is the petitioner’s burden to prove unpatentability, *E.I DuPont de Nemours & Co. v. Synvina C.V.*, 904 F.3d 996, 1007 (Fed. Cir. 2018), and “to demonstrate both ‘that a skilled artisan would have been motivated to combine the teachings of

the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367-68 (Fed. Cir. 2016) (quotations and citations omitted). However, a petitioner must first show that all of the claimed elements are disclosed in the prior art. *See Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1164 (Fed. Cir. 2006) (considering motivation to combine and reasonable expectation of success only “if all the elements of an invention are found in a combination of prior art references”).

VI. THE PETITION DOES NOT SHOW A LIKELIHOOD OF PREVAILING WITH RESPECT TO ANY CHALLENGED CLAIM

A. Ground 1: Petitioner Fails to Establish That Claims 1-3, 7, 12-15, 19, 24-25 Would Have Been Obvious Based on Esaka, Guihot, and the knowledge of a POSITA.

1. Petitioner Fails to Establish that a POSITA Would Combine Esaka and Guihot

Petitioner's assertion that a POSITA would have combined Esaka and Guihot rests on hindsight, ignoring that these references address distinct problems with fundamentally different solutions, neither of which aligns with the specific challenge addressed by the '646 Patent. Pet. 27-30. The '646 patent is in the field of user interfaces for portable devices, and it provides a specific framework for balancing usability and security upon waking from a sleep state by implementing three distinct

display modes, the selection of such states is based on, for example, evaluating the device's UI state before it entered sleep and in certain instances, the communication status. (EX1001, 1:17-18; 2:8-24; Claim 1).

Neither Esaka nor Guihot contemplate this comprehensive approach, nor do they address the same problem. The very concept of making a determination based on the '646 Patent's specific conditions is absent from the prior art. Esaka's processor logic is based only on wake-time events (motion, network presence) and makes no determination regarding the pre-sleep UI state. Guihot's processor logic, conversely, is based only on the pre-sleep state and makes no determination regarding the device's connectivity upon waking. These references target fundamentally different user scenarios and technical problems. Esaka automatically triggers a remote control interface based solely on wake-time events (detecting motion and confirming network presence), while disregarding the device's prior activity. Guihot, conversely, tackles the narrow issue of session continuity, seeking only to avoid forcing a full unlock when the screen times out while the remote control application is already actively running. Guihot's logic hinges entirely on this immediately preceding application state and ignores the device's communication capabilities. Neither reference discloses any processor that controls state transitions of a portable terminal apparatus to and from a sleep state to perform display modes

based on meeting **any** condition that relates to whether or not a wireless interface of the portable terminal is able to communicate with an external device.

Given these distinct goals and operational contexts, neither Esaka nor Guihot identify any deficiency in its own method that would motivate a POSITA to supplement it with the other's incompatible logic aimed at solving a different problem. Petitioners provide no reason why a POSITA, starting with Esaka's solution for quick wake-up access, would incorporate Guihot's logic designed solely for mid-session screen timeouts, or vice versa. The fact that Esaka lacks a pre-sleep check and Guihot lacks a connectivity check merely highlights their different focuses; it does not suggest they should be combined. Petitioner's conclusory assertion that such a combination would be "straight-forward" lacks any explanation of how or, more importantly, why a POSITA would integrate these differing checks. Pet., 28.

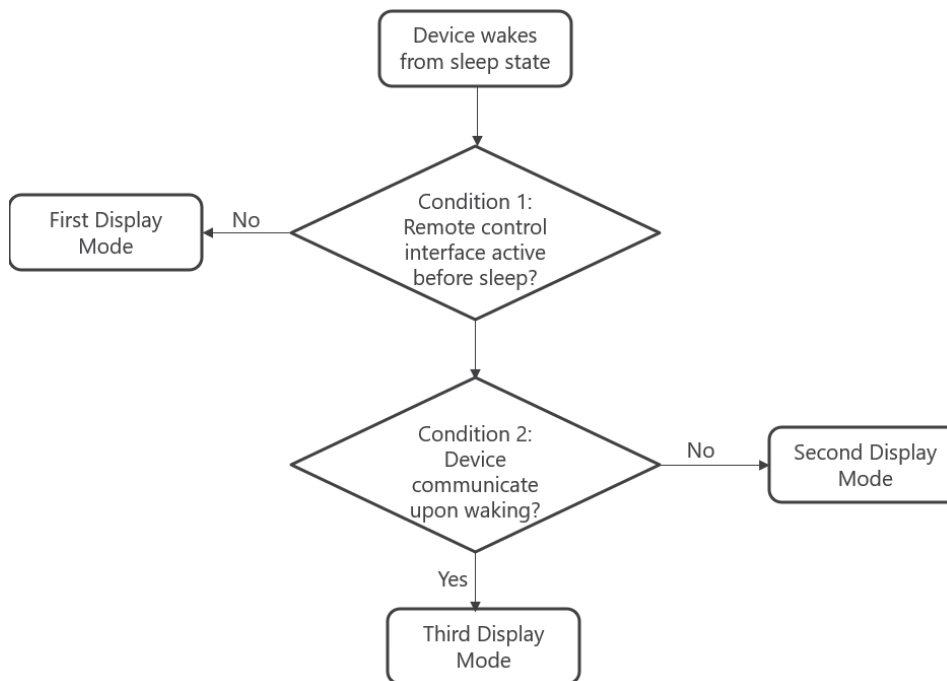
The combination is purely hindsight-driven, requiring the '646 Patent itself as a guide. Such reconstruction results not in a predictable sum, but in the specific three distinct display modes logic previously recognized by the Examiner as patentably distinct. Furthermore, Esaka teaches away from such a combination. Esaka discloses that "it is desirable to **reduce an operation burden** on a user to display the operational screen". Ex. 1004, 1:28-30. Modifying Esaka to incorporate Guihot's

application-specific, pre-sleep state check, and further requiring logic for three distinct display states based on multiple conditions (including connectivity and pre-sleep UI state), would **increase** complexity and operational burden, directly contradicting Esaka's stated goal.

2. Petitioner's Combination Fails to Teach the Claimed Invention

Petitioner's proposed combination of Esaka and Guihot fails to render claims obvious because it simply does not arrive at the claimed invention, particularly the three distinct display modes logic that the Examiner recognized as patentably distinct over the prior art. EX1002, 12-13. This failure stems from the fundamental flaw that the '646 Patent's specific conditional logic to determine which mode to enter is entirely absent from the prior art. The '646 Patent includes a processor programmed to evaluate both a pre-sleep condition and a wake-time condition to select one of three distinct display modes. Neither Esaka nor Guihot teaches or suggests a processor that performs such a determination. Esaka's processor follows one logical path (wake-time events) for one purpose. Guihot's follows a different logical path (pre-sleep state) for a different purpose. Because the proposed combination lacks the core determination logic of the '646 Patent, Petitioner's attempt at an element-by-element mapping necessarily fails, as detailed in the

subsequent sections.



Petitioner cannot create this unique logic merely by combining references that lack its core components. Second, Petitioner's analysis relies on mischaracterizing key claim terms. The Petition improperly equates the claimed apparatus-level "sleep state," involving controlled power transitions for the entire device, with Esaka's simple screen-off timer ("standby state") managed by a subordinate display controller. Because the foundational three distinct display modes logic, identified by the Examiner as the basis for allowance, is entirely absent from the proposed combination, Petitioner's attempt at an element-by-element mapping necessarily fails, as detailed in the subsequent sections. Specifically, claim 1 requires "a

processor programmed to control state transitions of the portable terminal apparatus to and from a sleep state and further performing a plurality of display modes” under specific conditions and based on specific determinations. But Petitioner’s conclusory assertions fail to set forth any reasons on why the subordinate display controller of Esaka would increase its complexity to incorporate making numerous determinations to provide three distinct display states.

3. Petitioner Fails to Establish That Claim Limitation [1d] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [1d] recites that “a processor is programmed to control state transitions of the portable terminal apparatus to and from a sleep state and further performing a plurality of display modes, the plurality of display modes.” EX1001, 13:14-18. Petitioner fails to establish this limitation for multiple reasons.

First, it improperly equates the claimed device-level “sleep state” with Esaka’s simple screen-off “standby state” Pet. 38; EX1003, ¶153. The claim explicitly requires control of state transitions for the “portable terminal apparatus” as a whole. A subordinate “display controller” turning off a screen is distinct from the claimed processor controlling a “sleep state” for the entire “portable terminal apparatus.” A display turning off is distinct from the entire device entering a low-power sleep state.

Second, the prior art scenarios do not meet the claimed prerequisite for entering the “sleep state.” The ’646 Patent's “sleep state” is explicitly triggered by a “non-operation state”, meaning device inactivity. A device actively managing a remote control session, as contemplated by Guihot, is not in a state of “non-operation,” even if the screen times out. Because the device in Guihot is still operating, it never enters the claimed “sleep state” and thus cannot “wake up from a sleep state” to perform the claimed modes..

Third, the claimed “waking from a sleep state” implies a deliberate user action, setting the stage for intentional user engagement, unlike Esaka's automatic trigger mechanism. The subsequent steps described in the claims reinforce this: immediately upon waking, the device presents a screen related to performing authentication (“a first screen to be moved to a screen for performing authentication to execute an unlock operation”), which requires deliberate user input. Furthermore, the third display mode involves the user potentially selecting a control icon (“when the control icon is selected”), another deliberate action. This focus on user-driven authentication and selection contrasts sharply with Esaka's process, which begins automatically whenever its motion sensor reacts to any movement, irrespective of user intent.. EX1004, 6:15-25. Applying the claimed three distinct display modes logic, designed for user convenience during intentional interaction, makes sense

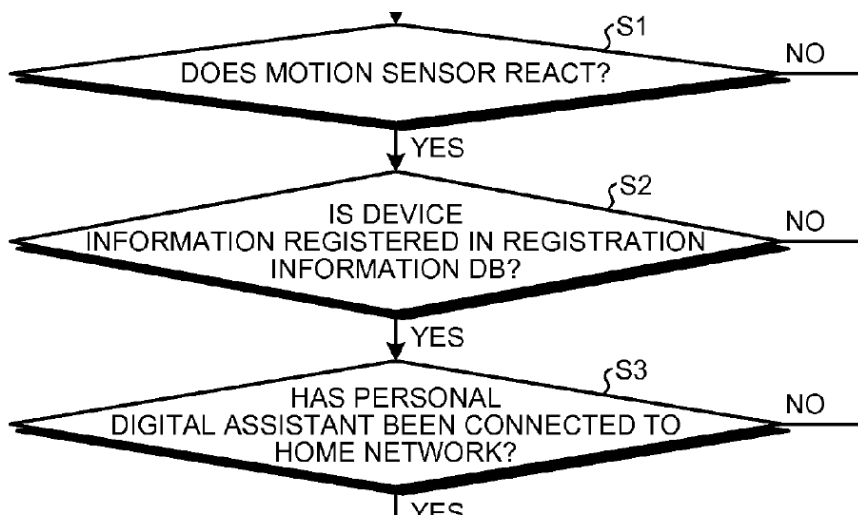
following a deliberate wake-up but would be illogical for Esaka's potentially accidental, motion-based activation. A POSITA would not be motivated to apply a user-convenience UI logic to a potentially accidental trigger through a motion sensor.

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claim limitation [1d] would have been rendered obvious by Esaka and Guihot.

4. Petitioner Fails to Establish That Claim Limitation [1e] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [1e] recites “a first display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on the display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a first condition, wherein the first condition is met when a control screen for remotely and wirelessly controlling an external device via the wireless communication interface is not displayed on the display before the portable terminal apparatus enters a sleep state” EX1001, 13:18-28. Petitioner fails to establish this limitation. The combination of Esaka and Guihot fails to teach the first display mode because it provides no processor programmed to make the required determination for the “first condition”.

The “first condition” requires the processor to determine “whether the control screen . . . is not displayed on the display before the portable terminal apparatus enters a sleep state.” *Id.* No such determination exists in the prior art. The Petition argues that a POSITA would have found this obvious to “follow the intention of the user and to improve the convenience of the user”. Pet., 44; EX1003, ¶168. This argument relies on speculation, hindsight, and is unsupported by evidence. Indeed, it is based on the subjective intent of a user, not actual configuration of Esaka’s system. Esaka’s logic, shown explicitly in its FIG. 7 flowchart, is triggered only by motion sensor wake-time events:



Id. Fig. 7 (S1, S3).

DOES MOTION SENSOR REACT? (S1) and HAS PERSONAL DIGITAL ASSISTANT BEEN CONNECTED TO HOME NETWORK? (S3) (EX1004, Fig.

7). The flowchart contains no step, and thus teaches no processor logic, for determining what was displayed *before* the device's screen turned off. **Because Esaka's logic is silent on the pre-sleep state, it cannot teach a mode that is conditioned on the remote screen not being displayed before sleep.**

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claim limitation [1e] would have been rendered obvious by Esaka and Guihot.

5. Petitioner Fails to Establish That Claim Limitation [1f] Would Have Been Anticipated or Obvious In View of Esaka and Guihot

Claim limitation [1f] recites “a second display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on the display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a second condition, wherein the second condition is met when the wireless communication interface is unable to communicate with the external device and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state”. EX1001, 13:28-38.

Petitioner fails to establish this limitation. The “second display mode” is not taught because the prior art fails to disclose a processor that makes the required

determination of the “second condition.” The “second condition” requires a specific, two-part logical “AND” operation: the processor must determine (1) that the control screen was displayed pre-sleep, AND (2) that the device is unable to communicate upon waking. This specific two-part determination is entirely absent from the prior art. Neither Esaka nor Guihot teaches a processor that performs this logic. Esaka's processor never performs the first determination (the pre-sleep check). Guihot's processor never performs the second determination (the wake-time connectivity check).

Furthermore, the Petition's reliance on Esaka's Claim 1 for this limitation is flawed. The Petition argues that Esaka teaches this mode by quoting language from Esaka's claim that states: “the operational interface on the locked screen is not usable under the lock condition, if it is determined that the electronic apparatus is not connected with the first network” Pet., 51. However, Esaka's specification provides no support for this claim language. Esaka's own processor logic, shown explicitly in its FIG. 7 flowchart, only provides a logic path for when the device is connected. If the device is not connected, Esaka's logic flow simply ends. It does not teach the processor to make a determination and then display a normal lock screen as the '646 Patent requires.

Therefore, Esaka fails to teach any logic, any processor determination, or any

resulting display mode for the “unable to communicate” scenario. The Petition cannot rely on a claim limitation from a prior art reference that is devoid of any enabling disclosure in its own specification. The Petition thus invents from whole cloth the specific logic to suppress the control icon. There is no teaching for this, because the processor's determination of this specific two-part condition is not taught. For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claim limitation [1f] would have been rendered obvious by Esaka and Guihot.

6. Petitioner Fails to Establish That Claim Limitation [1g] Would Have Been Obvious In View of Esaka and Guihot

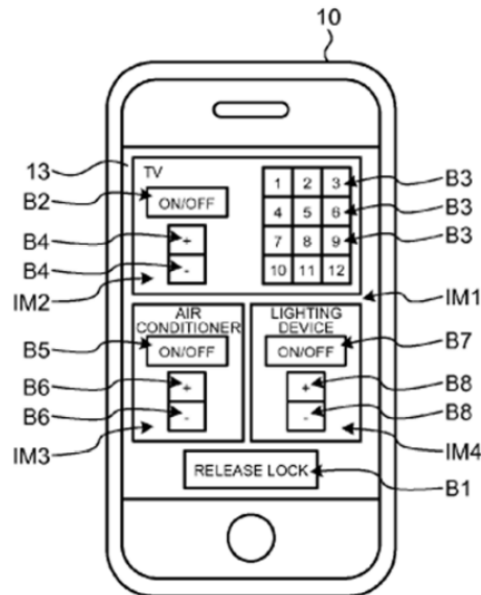
Claim limitation [1g] recites “a third display mode during which a control icon and a first screen to be moved to a screen for performing authentication to execute an unlock operation are displayed on the display when the portable terminal apparatus wakes up from a sleep state based on a third condition, wherein the third condition is met when the wireless communication interface is able to communicate with the external device and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state”. EX1001, 18:40-49.

Petitioner fails to establish this limitation for at least two reasons. First, the prior art combination cannot teach the third display mode because it discloses no

processor that makes the determination of the “third condition”. Similar to the second condition, the “third condition” requires a specific, two-part logical “AND” operation: the processor must determine (1) that the control screen was displayed pre-sleep, AND (2) that the device is able to communicate upon waking. As with the second condition, this specific, two-part “AND” determination is entirely absent from the prior art. The Petition’s argument (Pet., 53-54; EX1003, ¶196) is flawed because neither reference nor the proposed combination provides a reason or motivation for a processor to perform this specific two-part determination. Since the processor logic for entering this mode is missing, the mode itself cannot be taught.

Second, even if a POSITA were to somehow arrive at the logic for the third mode, that logic would not result in the claimed UI because the references teach away from it.. The claim requires a discrete “control icon” displayed simultaneously with a “first screen to be moved to a screen for performing authentication”. Petitioner maps this to Esaka’s FIG. 5.

FIG.5



EX1004, Fig. 5; Pet., 53; EX1003, ¶197.

However, Esaka's FIG. 5 does not show this claimed structure. Instead, it shows a full remote control interface composed of multiple operational screens (IM2, IM3, IM4) that occupies the majority of the display, with a "RELEASE LOCK" button (B1) shown separately at the bottom. This cluttered, multi-part UI does not disclose the claimed simplified interface.

Furthermore, related art teaches away from the claimed UI structure.. Miyazawa (EX1009), which shares common ancestry with Esaka, explicitly states its goal is to allow the user to "immediately use the information processing terminal

as is the case with a normal remote control”. Id. ¶28. This sets Miyazawa’s benchmark for ideal usability: mimicking a standard, simple remote. A POSITA would understand that a "normal remote control" is a single-purpose device designed for immediate access and, because it lacks personal data, does not have security features like an unlock button. However, the claimed third display mode requires displaying an unlock element (the “first screen to be moved to a screen for performing authentication”) simultaneously with the remote control icon. Normal remote controls do not have unlock buttons. Therefore, adding the claimed unlock element directly contradicts Miyazawa’s stated objective. Including this extra element, not present on a “normal remote control,” would necessarily interfere with this goal of mimicking one and degrade usability. Because adding the unlock element is presented as counterproductive to Miyazawa’s aim of achieving the usability of a normal remote, a POSITA following Miyazawa’s teachings would be actively discouraged from combining remote control icons with an unlock element on the same screen as claimed. This constitutes a clear teaching away from the invention.

7. Petitioner Fails to Establish That Claim Limitation [1i] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [1i] recites “wherein, when the control icon is selected in the

third display mode without the unlock operation, the wireless communication interface transmits a remote control signal corresponding to the selected control icon to the external device”. EX1001, 13:53-57. Petitioner’s argument for this limitation is flawed because it is predicated on the existence of the “third display mode,” which the prior art does not teach. The plain language of the claim requires the selection and signal transmission to occur “in the third display mode”. The Petition asserts this is met by Esaka’s disclosure that “a user can operate the operation target devices by operating the operation module to transmit an operation signal” from the lock screen. Pet., 59; EX1003, ¶207. However, as established above, the prior art does not teach the dual conditions (pre-sleep UI state AND wake-time connectivity) necessary to enter the claimed third display mode. Since the art does not teach the condition precedent, being in the third display mode, it logically cannot teach an action that occurs within that non-existent mode.

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claim limitation [1i] would have been rendered obvious by Esaka and Guihot.

8. Petitioner Fails to Establish That Claim Limitation [14c] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [14c] recites the method step of “controlling state transitions

of the portable terminal apparatus to or from a sleep state". EX1001, 14:56-57. Petitioner fails to establish limitation [1d]. Therefore, Petitioner's rationale for this method step fails for the same reasons presented above in relation to the corresponding apparatus limitation [1d]. *See supra* Section V.A.3.

9. Petitioner Fails to Establish That Claim Limitation [14e] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [14e] recites the method step for performing: "a first display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on a display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a first condition, wherein the first condition is met when a control screen for remotely and wirelessly controlling an external device via performing the wireless communication is not displayed on the display before the portable terminal apparatus enters a sleep state". EX1001, 14:60-15:3.

Petitioner relies on the same rationale asserted in relation to limitation [1e] for limitation [14e]. Therefore, Petitioner's rationale for this method step fails for the same reasons presented above in relation to the corresponding apparatus limitation [1e]. *See supra* Section V.A.4.

10. Petitioner Fails to Establish That Claim Limitation [14f] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [14f] recites “a second display mode during which a first screen to be moved to a screen for performing authentication to execute an unlock operation is displayed on the display without display of a control icon when the portable terminal apparatus wakes up from a sleep state based on a second condition, wherein the second condition is met when the portable terminal apparatus is unable to communicate with the external device via performing the wireless communication and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state”. EX1001, 15:4-15.

Petitioner relies on the same rationale asserted in relation to limitation [1f] for limitation [14f]. Therefore, Petitioner's rationale for this method step fails for the same reasons presented above in relation to the corresponding apparatus limitation [1f]. *See supra* Section V.A.5.

11. Petitioner Fails to Establish That Claim Limitation [14g] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [14g] recites “a third display mode during which a control icon and a first screen to be moved to a screen for performing authentication to execute an unlock operation are displayed on the display when the portable terminal apparatus wakes up from a sleep state based on a third condition, wherein the third

condition is met when the portable terminal apparatus is able to communicate with the external device via performing the wireless communication and the control screen is displayed on the display before the portable terminal apparatus enters a sleep state, wherein the control screen is used to execute control operations on the external device based on the input received by the operation input interface". EX1001, 15:17-30.

Petitioner relies on the same rationale asserted in relation to limitation [1g] for limitation [14g]. Therefore, Petitioner's rationale for this method step fails for the same reasons presented above in relation to the corresponding apparatus limitation [1g]. *See supra* Section V.A.6.

12. Petitioner Fails to Establish That Claim Limitation [14h] Would Have Been Obvious In View of Esaka and Guihot

Claim limitation [14h] recites the step of "transmitting via wireless communication a remote control signal corresponding to the selected control icon to the external device when the control icon is selected in the third display mode without unlock operation". EX1001, 15:31-34.

Petitioner relies on the same rationale asserted in relation to limitation [1i] for limitation [14h]. Therefore, Petitioner's rationale for this method step fails for the same reasons presented above in relation to the corresponding apparatus limitation

[1i]. *See supra* Section V.A.7.

13. Petitioner Fails to Establish That Claim 2, 3, 7, 12, 13, 15, 19, 24, and 25 Would Have Been Obvious In View of Esaka and Guihot

Claims 2, 3, 7, 12, and 13 depend from claim 1. Claims 15, 19, 24, and 25 depend from the corresponding method claim 14. Therefore, for at least the same reasons presented above in relation to independent claims 1 and 14, Petitioner fails to show a reasonable likelihood of success in establishing that claims 2, 3, 7, 12, 13, 15, 19, 24, and 25 would have been rendered obvious by Esaka in view of Guihot.

B. Ground 2: Petitioner Fails to Establish That Claims 4-6 and 16-18 Would Have Been Obvious Based on Esaka, Guihot, Banyopadhyay, and the knowledge of a POSITA

Petitioner's second ground alleges that claims 4-6 and 16-18 are obvious over Esaka and Guihot in view of U.S. Patent No. 9,521,247 ("Bandyopadhyay"). This ground fails because the motivation to combine is untethered to the problem solved by the '646 patent, and the combination does not teach the specific limitations of the challenged dependent claims.

1. Petitioner Fails to Establish that a POSITA Would Combine Esaka, Guihot, and Banyopadhyay

The Petition's rationale for adding Bandyopadhyay is that a POSITA would have been motivated to incorporate its teachings of conventional sensors, buttons,

and user interface mechanisms to the base combination of Esaka and Guihot. Pet., 72-75. This is a generic and untethered motivation that is insufficient to support a case for obviousness. The pertinent problem the '646 patent solves is how to intelligently decide when to display a remote control icon on the lock screen versus when to display a standard lock screen by implementing a specific three distinct display modes. Bandyopadhyay does not address this problem. Instead, it is focused on "allowing easy access to a camera application when a mobile device is in an above-lock (or locked) mode". EX1006, Abstract. It teaches the use of conventional smartphone hardware, such as sensors and buttons, for functions unrelated to remote control logic. EX1006, 8:21-48. A POSITA would not have been motivated to add Bandyopadhyay's conventional hardware to the Esaka/Guihot combination because doing so does nothing to solve the pertinent problem. Adding a GPS, an accelerometer, or different button functionalities does not naturally lead to or suggest the invention of the specific three distinct display modes of claim 1. The core deficiency of Ground 1, the absence of the claimed three distinct display modes, is not cured by adding the conventional hardware taught in Bandyopadhyay. The combination is therefore based on impermissible hindsight.

2. Petitioner Fails to Establish That Claims 4 and 16 Would Have Been Obvious In View of Esaka, Guihot, and Banyopadhyay

Claims 4 and 16 depend from claims 1 and 14, respectively, and add limitations reciting various sensors and a physical button. EX1001, 14:1-9, 16:37-45. Petitioner fails to establish these limitations. Claims 4 and 16 cannot be obvious because they depend on claims 1 and 14, which, for the numerous reasons set forth *supra*, would not have been obvious to a POSITA.

Furthermore, even if the combination were made, the Petition fails to show how adding these sensors from Bandyopadhyay would lead to the claimed invention. Petitioner's argument is conclusory, asserting only that it would be obvious to add these "conventional sensors" Pet., 76-81. Simply adding sensors to the device does not teach using their output as inputs to the specific, non-obvious conditional logic of the independent claims. The necessary connection is missing.

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claims 4 and 16 would have been obvious.

3. Petitioner Fails to Establish That Claims 6 and 18 Would Have Been Obvious In View of Esaka, Guihot, and Banyopadhyay

Claims 6 and 18 depend from claims 1 and 14, respectively, and add the limitation that the "wherein the unlock operation in the first display mode, the second

display mode, and the third display mode is initiated by sliding the first screen” EX1001, 14:20-23; “wherein the unlock operation in the first display mode, the second display mode, and the third display mode is initiated by sliding the first screen”. EX1001, 16:53-56. Petitioner fails to establish these limitations.

Claims 6 and 18 cannot be obvious because they depend on non-obvious independent claims. Moreover, Petitioner's argument for this limitation rests on an improper mix-and-match of UI elements from different references. The Petition points to Bandyopadhyay's disclosure of an “unlock slider control 520” as a well-known unlock gesture (EX1006, Fig. 5A). However, Petitioner provides no reason or motivation for why a POSITA would replace Esaka's perfectly functional one-step lock releasing button with Bandyopadhyay's entirely different two-step “slide-then-authenticate” workflow (EX1006, 12:15-25) and integrate it into a logical framework that is itself absent from the art. Such a combination requires hindsight.

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claims 6 and 18 would have been obvious.

4. Petitioner Fails to Establish That Claims 5 and 17 Would Have Been Obvious In View of Esaka, Guihot, and Banyopadhyay

Claims 5 and 17 depend from claims 1 and 14, respectively, and add the limitation of executing a “single predetermined operation” upon “simultaneous

pushing of the plurality of physical buttons”. EX1001, 14:10-18, 16:45-51. Petitioner fails to establish these limitations. Claims 5 and 17 cannot be obvious because they depend on non-obvious independent claims. Additionally, even if Bandyopadhyay discloses a simultaneous button press to launch a camera (EX1006, 14:33-45), Petitioner fails to provide any technical reason why a POSITA would integrate this specific hardware trigger into the non-obvious and untaught three distinct display modes for a completely different remote control application. For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claims 5 and 17 would have been obvious.

C. Ground 3: Petitioners Fail to Establish That Claims 8-11 and 20-23 Would Have Been Obvious Based on Esaka, Guihot, Sharif-Ahmadi, and the knowledge of a POSITA

Petitioner's third ground, which alleges that claims 8-11 and 20-23 are obvious over Esaka and Guihot in view of U.S. Patent No. 10,375,343 (“Sharif-Ahmadi”), fails because it is based on a mischaracterization of Sharif-Ahmadi's network architecture. The Petition attempts to map a gateway-centric security model onto claims that explicitly require terminal-to-device encryption, a flaw that renders the entire ground unpersuasive.

1. Petitioner Fails to Establish that a POSITA Would Combine Esaka, Guihot, and Sharif-Ahmadi

The Petition's rationale for adding Sharif-Ahmadi is that a POSITA would be motivated to add its security features because Esaka and Guihot are "concerned with security" but lack detail on specific encryption schemes. Pet.,87. This motivation is generic and misplaced. The pertinent problem the '646 Patent solves relates to user interface logic—specifically, when to display a remote control icon on a lock screen. Sharif-Ahmadi does not address this problem at all. Instead, it teaches a system for managing content delivery through a central gateway device in the home (EX1007, Abstract). While Sharif-Ahmadi is analogous art in the general field of remote device control, it solves the distinct problem of providing secure, centralized network management. A POSITA would not have been motivated to combine Sharif-Ahmadi with Esaka and Guihot because adding a gateway-centric security architecture does nothing to solve the core UI problem addressed by the '646 Patent. The references are not complementary. The motivation to simply "add security" is insufficient, especially when, as shown below, the security architecture of Sharif-Ahmadi is incompatible with the direct communication model required by the claims.

2. Petitioner Fails to Establish That Claims 8 and 20 Would Have Been Obvious In View of Esaka, Guihot, and Sharif-Ahmadi

Claim 8 depends from claim 1 and recites “wherein the wireless communication interface is configured to communicate with the external device by implementing an encryption scheme”. EX1001, 14:31-34. Method claim 20 is the corresponding counterpart. Petitioner fails to establish this limitation. This ground fails because of a architectural mismatch between the claim and the Sharif-Ahmadi reference. The claim requires the portable terminal’s own “wireless communication interface” to implement encryption in a direct communication link with the “external device”. Sharif-Ahmadi teaches a fundamentally different system. Sharif-Ahmadi explicitly discloses that the gateway acts as the “Wi-Fi access point” and that it is the gateway’s “Wi-Fi port” that “should support security (WEP, WPA, and WPA2)” EX1007, 8:22-26. In this architecture, the mobile phone communicates with the gateway, which in turn communicates with the television. *Id.*, 7:9-30, Fig. 3. The phone does not implement the encryption scheme to communicate directly with the TV. Petitioner’s argument that Sharif-Ahmadi teaches the claimed feature is a mischaracterization of its disclosure. Because the network architecture of Sharif-Ahmadi is fundamentally different from that required by the claims, it cannot teach the claimed limitation.

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claims 8 and 20 would have been obvious.

3. Petitioner Fails to Establish That Claims 9-11 and 21-23 Would Have Been Obvious In View of Esaka, Guihot, and Sharif-Ahmadi

Claims 9-11 depend from claim 8, and claims 21-23 depend from claim 20. These claims further specify the encryption scheme as WEP, WPA, and WPA2, respectively. EX1001, 14:35-43, 17:1-8. Petitioner fails to establish these limitations. These dependent claims cannot be obvious because they depend on claim 8 and 20, which are not obvious for the reasons set forth *supra*. Since the prior art combination fails to teach the fundamental architectural requirement of terminal-to-device encryption, it logically cannot teach the specific types of encryption implemented within that non-obvious architecture.

For at least the foregoing reasons, Petitioner fails to show a reasonable likelihood of success in establishing that claims 9-11 and 21-23 would have been obvious.

VII. CONCLUSION

For at least the foregoing reasons, the Director should deny institution of the Petition.

Case IPR2025-01316
Patent No. 10,812,646
Patent Owner's Preliminary Response

Dated: October 30, 2025

Respectfully submitted,

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Case IPR2025-01316
Patent No. 10,812,646
Patent Owner's Preliminary Response

CERTIFICATE OF SERVICE

I hereby certify that on this 30th day of October, 2025, a copy of the attached
PATENT OWNER'S PRELIMINARY RESPONSE was served by electronic
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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant 37 CFR 42.24(d), the undersigned certifies that this Preliminary Response and complies with the type-volume limitation of 37 CFR § 42.24(a). The word count application of the word processing program used to prepare this Patent Owner's Preliminary Response indicates that the Preliminary Response contains 7,468 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

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