IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Inter Partes* Review of:	)
U.S. Patent No. 8,924,192	)
Issued: Dec. 30, 2014	)
Application No.: 13/673,692	)
Filing Date: Nov. 9, 2012	)

For: **Systems Including Network Simulation For Mobile Application Development And Online Marketplaces For Mobile Application Distribution, Revenue Sharing, Content Distribution, Or Combinations Thereof**

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,924,192

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I. Introduction

Capital One, N.A. and Capital One Services, LLC ("Petitioners") respectfully request *inter partes* review of claims 60-69 of U.S. Patent No. 8,924,192 ("Challenged Claims"), titled "Systems Including Network Simulation for Mobile Application Development and Online Marketplaces for Mobile Application Distribution, Revenue Sharing, Content Distribution, or Combinations Thereof" ("'192 patent," Ex. 1001). USPTO records show that the '192 patent is assigned to WAPP TECH CORP ("Wapp" or "Patent Owner").

The '192 patent purports to disclose systems and methods for emulating an application executing on a mobile device. In the '192 patent, the mobile device is emulated on a processor separate from the mobile device, using a model that is based on characteristics indicative of the mobile device's performance. During execution in the emulated environment, the application is monitored to determine how the application utilizes resources of the emulated mobile device, and the resource utilization information is displayed. *See generally* Ex. 1001, Abstract. The '192 patent specification does not provide any example functionality for applications developed using the emulation environment.

The Challenged Claims of the '192 patent, however, are directed to a product (the "application") itself rather than the system for emulating the application. Claim 60 recites and claims a system with an "application configured to enable a user to

modify a photo on the mobile device." Claim 60 further states, in a "wherein" clause, that the application is developed "using a software authoring platform" that visually emulates the hardware characteristics indicative of performance of the mobile device when executing the application. However, the additional claim language contained in claim 60's "wherein" clause does not limit the claim for purposes of patentability, because the language only serves to define the process by which the claimed product (the "application") is made. Based on applicable precedent analyzing similar product-by-process claims, the "wherein" clause does not contribute to patentability. *Amgen Inc. v. F. Hoffman-La Roche Ltd.*, 580 F.3d 1340, 1369-70 (Fed. Cir. 2009) ("In determining validity of a product-by-process claim, the focus is on the product and not on the process of making it.").

But the product of enabling a user to modify a photo on the mobile device recited in the claim would have been obvious as of the '192 patent's earliest claimed priority date. By the alleged 2005 priority date, applications for modifying a photo on a mobile device were well-known. For example, the Lee reference (discussed below), which was not considered by the Examiner, disclosed a "mobile phone that supports photo editing," where the mobile phone includes a "memory that stores a program" for the photo editing functionality. Ex. 1005 [Lee], 8:23, 3:26-27. The teachings of Lee, alone or in combination with other prior art, render obvious all Challenged Claims.

Yet even if the "wherein" clause were limiting, the Challenged Claims are unpatentable. The '192 patent is one family member in a string of continuations. The Challenged Claims were added during prosecution of the application that became the '192 patent. But because the claimed "application configured to enable a user to modify a photo on the mobile device" is not adequately supported by the written description of the '192 patent's ancestors, the '192 patent is not entitled to claim priority to any earlier date than the date of the application's filing. As a result, the inventor's own earlier-issued patent is available as prior art that discloses the recited "software authoring platform" in combination with Lee's teachings of the claimed "application." Together, Lee and the inventor's earlier patent (Poulin-910) render obvious the '192 patent's Challenged Claims (along with the other prior art of record teaching dependent claim features).

Accordingly, Petitioner asks the Board to institute review of the '192 patent and find all Challenged Claims unpatentable.

II. Identification of Challenges (37 C.F.R. § 42.104(b))

Ground 1A: Claims 60-65 are unpatentable under 35 U.S.C. § 103 by Lee (Ex. 1005).

Ground 1B: Claim 66 is unpatentable under 35 U.S.C. § 103 by Lee in view of Jiang (Ex. 1007).

Ground 1C: Claims 67-69 are unpatentable under 35 U.S.C. § 103 by Lee in view of Tran (Ex. 1008).

Ground 2A: Claims 60-65 are unpatentable under 35 U.S.C. § 103 by Lee in view of Poulin-910 (Ex. 1009).

Ground 2B: Claim 66 is unpatentable under 35 U.S.C. § 103 by Lee in view of Poulin-910 in view of Jiang.

Ground 2C: Claims 67-69 are unpatentable under 35 U.S.C. § 103 by Lee in view of Poulin-910 in view of Tran.

III. Background

A. Technology Overview

By the early 2000s, mobile devices had become increasingly popular with nearly 400 million mobile phones sold each year. Ex. 1021, p. 516; Ex. 1003 [Medvidovic], ¶¶50-51. Consumers relied on mobile devices for a range of functions, including as a digital camera, a digital assistant, or location technology. Ex. 1021, p. 516. Software developers and cell phone providers alike sought to develop mobile applications as Internet-enabled mobile phones drove the need for productivity tools. *Id.* at p. 517. Mobile applications also provided an alternative revenue stream for cell phone providers. *Id.* at p. 517. One area of application development was for consumers using a mobile phone equipped with a camera. Ex. 1023, p. 1403. Mobile phones with cameras were introduced to the market in 1999,

and by late 2005, they were increasingly common. *Id.*; Ex. 1022; Ex. 1003 [Medvidovic], ¶¶52-56. With consumers producing more digital images, there was a need for managing those images, so developers created mobile applications for annotating and managing digital photos. Ex. 1023, p. 1403; Ex. 1024. For example, researchers developed a mobile application for image annotation using camera phones. Ex. 1023, p. 1403. Photo modification and management mobile applications were well-known by 2005. *Id.*; Ex. 1025; Ex. 1003 [Medvidovic], ¶¶52-56.

It was well-known that such mobile applications were typically developed in environments and tested using emulators provided by the development environments. Ex. 1010; Ex. 1011; Ex. 1003 [Medvidovic], ¶¶57-61. For example, if a mobile application was developed for a Palm OS device, a developer would typically use a Palm OS emulator to test the application. Ex. 1010; Ex. 1011; Ex. 1003 [Medvidovic], ¶¶57-61. As a result, by 2005, it was obvious to develop a photo modification application for a mobile device by emulating the application in a developer environment.

B. The ’192 Patent (Ex. 1001)

The specification of the ’192 patent has no disclosure of the Challenged Claims and thus, does not provide detail on the applications developed using such a development tool. For that reason, the ’192 patent specification does not contribute

to an understanding of Challenged Claims 60-69. Nevertheless, a brief summary of the '192 patent is provided below for context.

The '192 patent was issued on December 30, 2014 and filed on November 9, 2012, claiming earliest priority to a provisional application filed June 10, 2005. The patent describes "[a] system and methods" of emulating "an application executing in real time in a mobile device." Ex. 1001, Abstract. "The mobile device is emulated in real time using a model running on a processor extrinsic to the mobile device," wherein "[t]he model is based on characteristics indicative of performance of the mobile device" such as network characteristics and resource utilization information "by the application for the mobile device." *Id.*

In Figure 1, the '192 patent depicts a system containing an "emulator 101" "for emulating and profiling a frame based application 104" where the application "may be developed using a frame based application development tool 112" such as a commercially-available tool known as Flash MX or Studio 8. Ex. 1001, 4:53-5:12. The '192 patent explains that "exemplary characteristics that may be used to specify performance of model 102 to emulate mobile device 114" include characteristics such as "Processor Speed," "Storage Access Speed," and others. *Id*. at 5:55-6:34. In a specific example, the '192 patent describes a "network simulator interface" to "simulate connectivity of mobile device 114 with a wireless network" and also

details visually depicting the results of such an emulation on a bar graph. *Id*. at 11:5-48, Figs. 3, 12.

C. Prosecution History

The '192 patent did not receive any anticipation or obviousness rejections during prosecution. The '192 patent received only a nonstatutory double patenting rejection over its parent, U.S. Patent No. 8,332,203. *See* Ex. 1002, 72.

In its response to the nonstatutory double patenting rejection, the applicant filed a terminal disclaimer, and added 26 new claims, including claims 60-69, which correspond to Challenged Claims 60-69. *See id.* at 86-96. All claims were then allowed without a further rejection. *See id.* at 102-106. The examiner did not provide any reasons for allowance. *See generally id*.

D. Person of Ordinary Skill in the Art

A person of ordinary skill in the art as of the earliest claimed priority date of the '192 patent ("POSITA") would have possessed a bachelor's degree in computer science or computer engineering, and two years of experience and familiarity with software development and software development tools, such as integrated development environments. Ex. 1003 [Medvidovic], ¶¶38-40. A person could also have qualified with more formal education and less technical experience, or vice versa. Ex. 1003 [Medvidovic], ¶¶38-40.

E. Claim Construction

The claims should be construed under *Phillips*. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). Aside from the terms construed below, Petitioner applies the plain meaning of the terms of the Challenged Claims.[1]

1. Claims 60-69 are Product-By-Process Claims

Claim 60 is reproduced below:

60. A system comprising:

an application configured to enable a user to modify a photo on the mobile device,

wherein the application is developed using a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application.

Claim 60 recites a system which comprises an application that enables a user to modify a photo, wherein the application is developed using the recited software authoring platform. The claim requires a specific application, one that allows photo modification, which is defined by the process by which the application was

[1] Petitioner reserves the right to argue alternative constructions in other proceedings, and where such a defense is available, that the claims are indefinite.

developed. That process is described in the claim as using a software authoring platform to develop the application. The software authoring platform is configured to simultaneously visually emulate hardware characteristics indicative of performance of the mobile device when executing the platform, via profile display windows.

The development process recited in the "wherein" clause does not impart structural or functional differences to the claimed "application configured to enable a user to modify a photo on the mobile device." *Greenliant Sys., Inc. v. Xicor LLC*, 692 F.3d 1261, 1268 (Fed. Cir. 2012) (explaining that if the process imparts structural or functional differences, then the differences are relevant for validity). Ex. 1003 [Medvidovic], ¶¶45-47 (confirming an application to enable a user to modify a photo on a mobile device could be developed without the recited software authoring platform). Accordingly, the claim is a product-by-process claim. As such, the "determination of patentability is based on the product itself," that is, the "application configured to enable a user to modify a photo on the mobile device" and not the process recited in the "wherein" clause by which the application is developed. *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985); *Amgen*, 580 F.3d at 1369-70 ("In determining validity of a product-by-process claim, the focus is on the product and not on the process of making it.").

The Board should therefore treat claim 60 as a product-by-process claim where the scope is not limited by the recitation of process steps but rather by the end product, an application configured to enable a user to modify a photo on the mobile device. *Thorpe*, 777 F.2d at 697 (explaining that product-by-process claims "enable an applicant to claim an otherwise patentable product that resists definition by other than the process by which it is made"); *Kamstrup A/S v. Axioma Metering UAB*, 43 F.4th 1374, 1381-83 (Fed. Cir. 2022) (affirming the Board's product-by-process construction).

2. Previous Court Constructions of the '192 Patent's Terms

Certain terms of the '192 patent have been subject to construction in prior district court litigations. Specifically, as relevant to the challenged claims, the district court gave the following terms their ordinary meaning: "emulate," "application," "on the mobile device." *WAPP Tech Ltd. P'ship v. JPMorgan Chase Bank, N.A.*, No. 4:23-CV-1137, 2024 WL 4828080 at *8, *10, *16 (E.D. Tex. Nov. 19, 2024); Ex. 1003 [Medvidovic], ¶48. The prior art discloses and renders obvious the challenged claims under these constructions or under any reasonable construction.

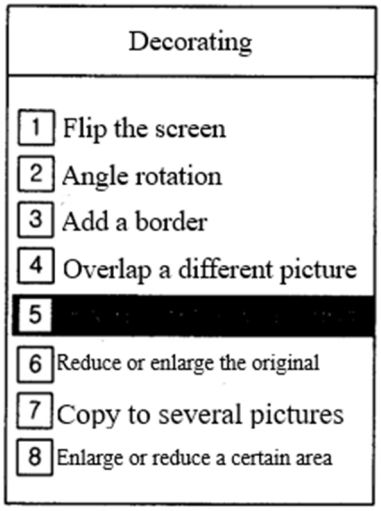
IV. Ground 1A: Claims 60-65 are unpatentable over Lee

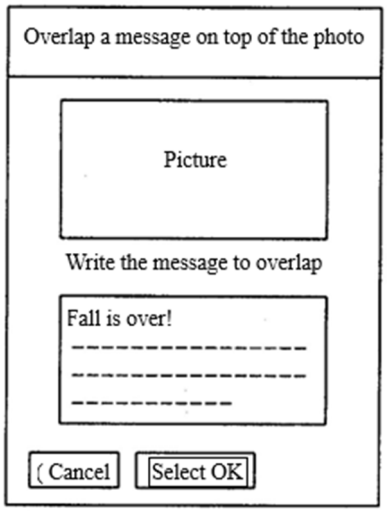
A. Overview of the Prior Art

1. Lee (Ex. 1005)

Lee is a Korean application that was filed on December 17, 2001 and published on June 25, 2003. Lee is at least 35 U.S.C. § 102(b) (pre-AIA) prior art because it was published more than one year before the '192 patent's earliest claimed priority date. Exhibit 1005 is a certified translation of Lee, and Exhibit 1006 is Lee as published in Korean.

Lee discloses a method of editing a photo and sending a photo mail, and a mobile phone implementing the method. Ex. 1005 [Lee], 1:19-20. Lee further discloses a mobile phone comprised of a memory for storing a program that has an algorithmic structure (i.e., an application) that supports configuring and editing a photo or picture as a photo mail. *Id.* at 1:20-22. This program allows the user to edit a picture or photo to be sent as a photo mail to another user through a control unit and produce various forms of images and pictures. *Id.* at 1:22-26.





Ex. 1005 [Lee], Figs. 5c, 5d.

Lee is analogous art to the '192 patent, as it is in the same field of endeavor of mobile device applications. Ex. 1003 [Medvidovic], ¶¶64-66.

B. Claim 60

1. Preamble: "A system comprising"

To the extent the preamble is limiting, Lee discloses it.

Lee discloses "[a] **mobile phone** that supports photo editing." Ex. 1005 [Lee], 8:23, Fig. 2, 2:24-28.[2] Lee's mobile phone discloses a "system" as recited. Ex. 1003 [Medvidovic], ¶67.

[2] Emphasis added unless otherwise specified.

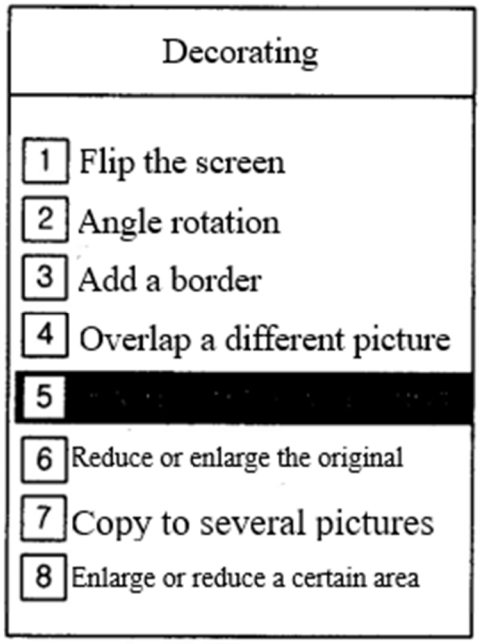
2. Limitation: "an application configured to enable a user to modify a photo on the mobile device"

Claim 60 further recites "an application configured to enable a user to modify a photo on the mobile device, wherein the application is developed using a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application." Ex. 1001, Claim 60. As detailed above in § III.E., *supra*, claim 60 is a product-by-process claim, and accordingly, only the product, i.e., the "application configured to enable a user to modify a photo on the mobile device," is evaluated to demonstrate unpatentability of the claim. *See Abbott Lab'ys. v. Sandoz, Inc.*, 566 F.3d 1282, 1293 (Fed. Cir. 2009) ("[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself.") (citations/quotations omitted). Lee discloses or renders obvious the product, "an application configured to enable a user [e.g., user of the mobile device] to modify a photo on the mobile device," as recited.

Specifically, Lee discloses that its "mobile phone is composed of a **memory that stores a program having an algorithmic structure**." Ex. 1005 [Lee], 3:26-4:2; *see also id.* at 3:1-3, 5:2-3, claim 1. A POSITA would have recognized a "program having an algorithmic structure" as an "application." Ex. 1003 [Medvidovic], ¶69 (citing, e.g., Ex. 1019 [Microsoft Computer Dictionary], p. 31

("application *n.* A program designed to assist in the performance of a specific task….")).

Lee further discloses that its application "supports organizing and **editing photos or pictures** in photo mails" and that "[t]herefore, mobile phone **users can edit photos or pictures** and send them as photo mail." Ex. 1005 [Lee], 3:27-4:3; *see also id.* at 5:2-3 (memory unit "stores a program having a function for allowing a user to edit a picture or photo"), 6:17 ("flow chart showing the process of editing a photo"), Fig. 5c (showing "several editing menus" and "representative functions"), 7:13-15, 2:25-28. A POSITA would have recognized from Lee's disclosure that its application supports a user "editing" photos as disclosing or rendering obvious that the application enables a user to modify photos. Ex. 1003 [Medvidovic], ¶¶70-71 (citing, *e.g.*, Ex. 1020 [Webster's], p. 620 ("edit … 8. *Computers*. to modify or add to (data or text).")).



Ex. 1005 [Lee], Fig. 5c.

Thus, Lee's disclosure that its mobile phone includes a "memory that stores a program having an algorithmic structure," where the program "supports organizing and editing photos or pictures," renders obvious claim 60, because Lee discloses or renders obvious "an application configured to enable a user to modify a photo on the mobile device" as recited. Ex. 1003 [Medvidovic], ¶¶68-71.

C. Dependent claims 61-65

1. Claim 61: "wherein the application is configured to allow an end user[3] to add content to modify the photo"

Lee discloses "[i]n order to edit pictures or photos using a mobile phone and use them as photo mail, it is possible to configure a 'decorating' function in the menu so that the user can select it from the menu, or alternatively, it is possible to provide a separate dedicated key button on the keypad of the mobile phone." Ex. 1005 [Lee], 6:19-22. Further, Lee discloses "[w]hen the user selects the decorating function menu on a mobile phone (step S400), a picture selection screen showing a list of pictures that the user can select is displayed on the screen. An example of this screen is shown in Figure 5b. In this screen, the user selects the name of the picture that he or she wants to decorate (step S410). This example shows an example in which 'My Picture' (510) containing the user's image is selected." *Id.* at 7:7-11.

[3] For purposes of this Petition, "end user" is interpreted as the same user as in claim 60.

Figure 4

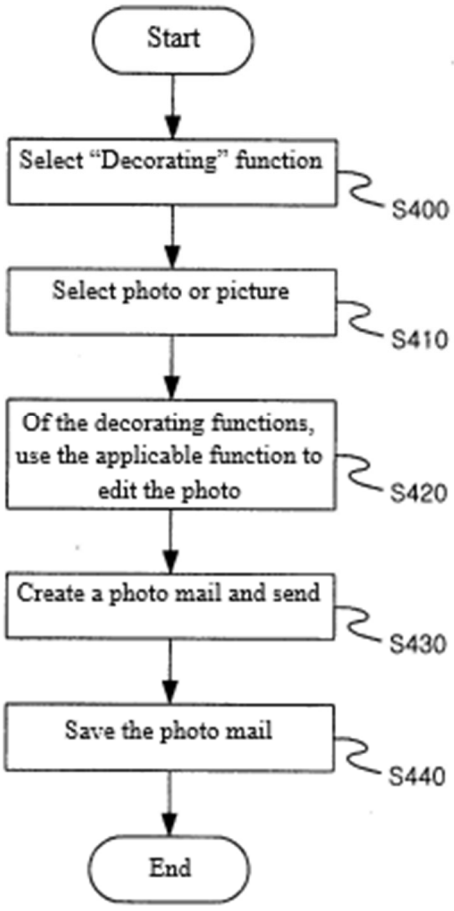

Start
Select "Decorating" function
S400
Select photo or picture
S410
Of the decorating functions, use the applicable function to edit the photo
S420
Create a photo mail and send
S430
Save the photo mail
S440
End

Figure 5a

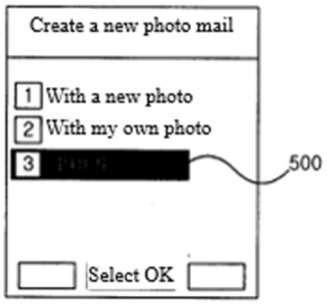


Figure 5c

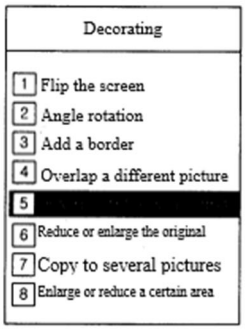


Figure 5b

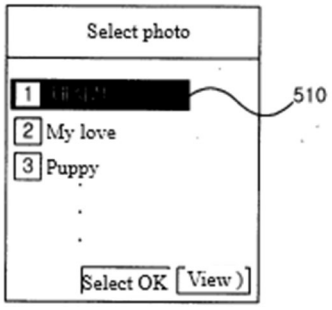
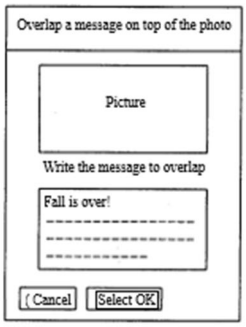


Figure 5d



Ex. 1005 [Lee], Figs. 4, 5a-5d.

With respect to Figure 5c, Lee explains "a few of" the representative functions of the "decorating function":

> screen flipping, which allows the user to rotate the photo screen 180 degrees; angle rotation, which allows the user to rotate the photo by setting an angle; **border adding, which allows the user to decorate the edge of the photo in a certain shape**; **overlap, which allows the user to overlap another picture on top of the photo; overlapping a message on top of the photo, which allows the user to insert a desired message on top of the photo**; reducing and enlarging the original, which allows the user to reduce or enlarge the size of the

> photo; copying a photo to multiple pictures, which allows the user to copy a photo to more than one picture; and enlarging and reducing a specific area, which allows the user to enlarge or reduce only a certain area of the photo.

Ex. 1005 [Lee], 7:15-23, claim 3. The representative functions of "border adding," "overlap" of images, and "overlapping a message" all disclose that Lee's program is "configured to allow an end user to **add content** to modify the photo" as recited.

Thus, claim 61 would have been obvious in view of Lee. Ex. 1003 [Medvidovic], ¶¶73-77.

2. Claim 62: "wherein the content includes text"

Claim 62 depends from claim 61 and thus specifies that the content added to the photo includes text.

As detailed above with respect to claim 61, one of the representative functions of Lee's decorating function includes "**overlapping a message** on top of the photo, which allows the user to insert a desired message on top of the photo." Ex. 1005 [Lee], 7:18-20, claim 3. Lee further explains that "[o]n the editing screen, the user can write or load a desired message and add it to the photo. This can be done by placing the picture screen at the top and the message writing screen at the bottom, so that the user can write a message directly or load an existing message." *Id.* at 7:27-8:1.

Figure 5c

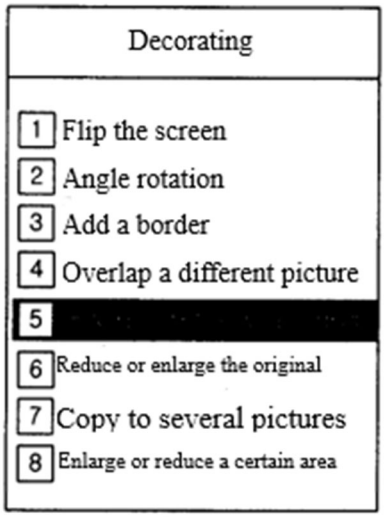
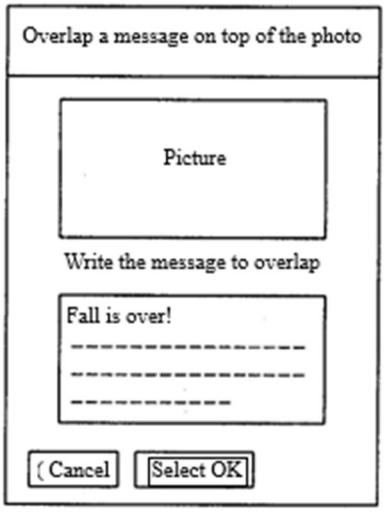


Figure 5d



Ex. 1005 [Lee], Figs. 5c, 5d.

Accordingly, Lee discloses a user selecting a desired photo, writing or loading a desired text message, and adding it to the selected photo. Thus, claim 62 would have been obvious in view of Lee. Ex. 1003 [Medvidovic], ¶¶78-79.

3. Claim 63: "wherein the text includes a caption"

Claim 63 depends from claim 62 and thus specifies that the text added to the photo in claim 62 includes a caption. As a preliminary matter, claim 63 is directed towards printed matter and is therefore not entitled to patentable weight. *See In re Distefano*, 808 F.3d 845, 848 (Fed. Cir. 2015) ("[I]f a limitation claims (a) printed matter that (b) is not functionally or structurally related to the physical substrate holding the printed matter, it does not lend any patentable weight to the patentability analysis."). Specifically, claim 63 merely claims printed matter, the content of

information (i.e., the text) added to the photo, and does not have a functional or structural relation to the substrate (the image) itself. *See id.* Accordingly, claim 63 is rendered obvious for the same reasons as claim 62.

Nevertheless, to the extent claim 63 is limiting, it is rendered obvious by Lee. Specifically, as detailed above with respect to claim 62, Lee's decorating functionality provides the ability for the user to overlap "a message on top of the photo, which allows the user to insert a desired message on top of the photo" and an editing screen for doing so. Ex. 1005 [Lee], 7:18-20. Lee further contemplates that adding the message to the photo "can be done by placing the picture screen at the top and the message writing screen at the bottom, so that the user can write a message directly or load an existing message." *Id.* at 7:28-8:1.

Figure 5c

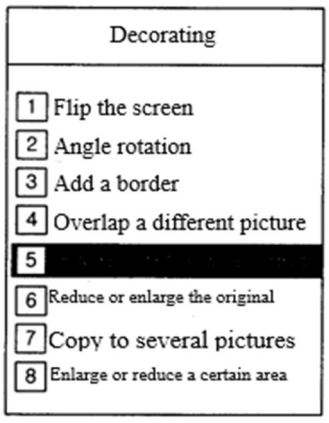


Figure 5d

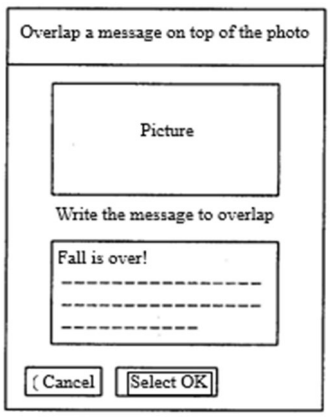
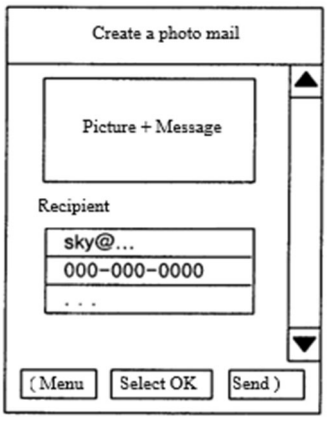


Figure 6



Ex. 1005 [Lee], Figs. 5c, 5c, 6.

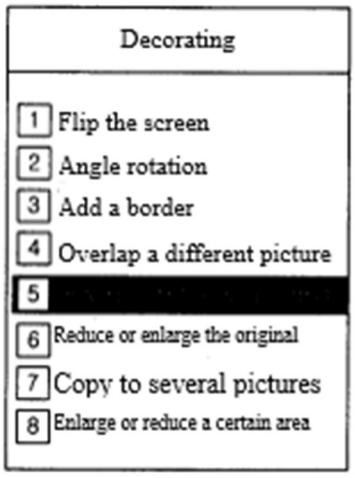
The '192 patent does not define what is meant by a "caption," but a POSITA would have understood Lee's disclosure of adding or overlapping a text message to a photo and the ability to write a message below a photo as rendering obvious that the text added to the photo includes a caption as recited. Ex. 1003 [Medvidovic], ¶¶80-82 (citing Ex. 1020 [Webster's], p. 311 ("caption … 1. a title or explanation for a picture or illustration … 3… the title of a scene, the text of a speech, etc. superimposed ….")). Accordingly, claim 63 would have been obvious in view of Lee. Ex. 1003 [Medvidovic], ¶¶80-82.

4. Claim 64: "wherein the content includes an image"

Claim 64 depends from claim 61 and thus specifies that the content added to the photo includes an image.

As detailed above with respect to claim 61, one of the representative functions of Lee's decorating function includes a function allowing "the user to **overlap another picture on top of the photo**." Ex. 1005 [Lee], 7:18, claim 3.

Figure 5c



Ex. 1005 [Lee], Fig. 5c.

Lee's disclosure of functionality for overlapping a photo with a different picture renders obvious that the content added to the photo includes an image, and thus renders obvious claim 64. Ex. 1003 [Medvidovic], ¶¶83-84.

5. Claim 65: "wherein the application is configured to allow an end user[4] to distribute the modified photo through a server or other connection to the internet."

Claim 65 depends from claim 61.

Lee's program "supports configuring a photo or picture **as a photo mail**" and discloses a photo mail writing screen in Figure 6 below. Ex. 1005 [Lee], 1:20-24. Lee further discloses, within the photo mail writing screen, a user being able to write

[4] For purposes of this Petition, "end user" is interpreted as the same user as in claim 60.

an additional message or "complete the photo mail writing by simply entering the **recipient's email** or phone number, and when the second command is executed, the photo mail is **sent to the other party** (step S430)." *Id.* at 8:5-7. Lee further explains that "a photo mail is transmitted to the corresponding browser (360) through a **communication network** (350)," and "[t]he communication network (350) consists of a mobile phone operator's network or a wired network." *Id.* at 6:8-11; *see also id.* at 1:19-20, 1:24-26. Lee additionally discloses a Wireless Application Protocol ("WAP") server and the ability to transmit data to a browser on the client side of the Internet. *Id.* at 6:4-8.

Figure 3

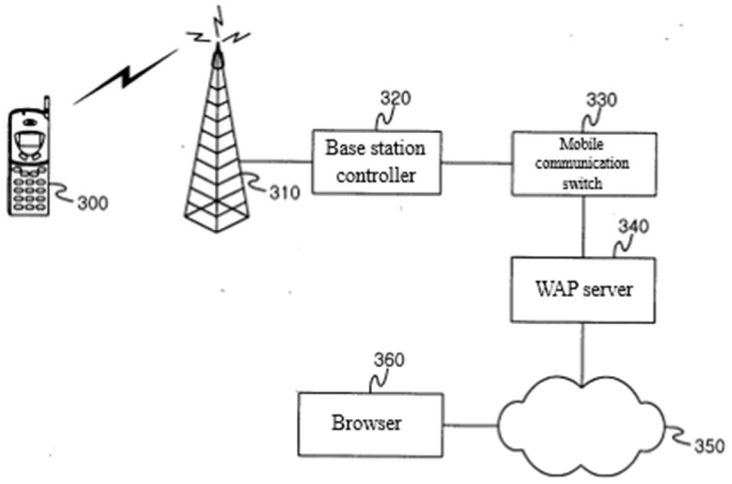


Figure 4

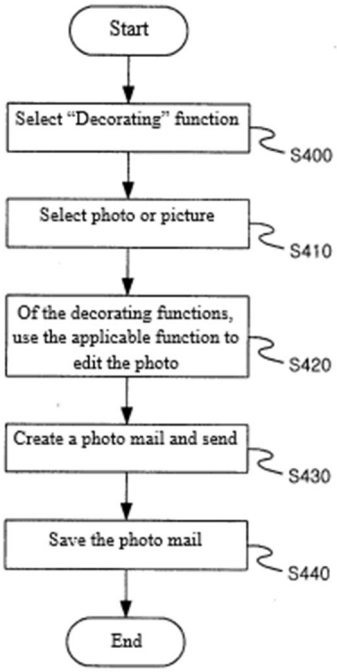


Figure 6

Ex. 1005 [Lee], Figs. 3, 4, 6.

Lee's description of sending the edited photo through a photo mail via a communication network and through a WAP/Internet server renders obvious that the

application "is configured to allow an end user to distribute the modified photo through a server or other connection to the internet." Thus, claim 65 would have been obvious in view of Lee. Ex. 1003 [Medvidovic], ¶¶85-87.

V. Ground 1B: Claim 66 is unpatentable over Lee in view of Jiang

A. Overview of the Prior Art

1. Jiang (Ex. 1007)

U.S. Publication No. 2005/0102638 to Jiang ("Jiang") is § 102(a) (pre-AIA) prior art because it was published May 12, 2005, before the earliest priority date of the '192 patent.

Jiang describes manipulating (moving and rearranging) images on the display of a mobile device and discloses the involvement of a server in communication link with a plurality of mobile devices. Ex. 1007 [Jiang], [0007]-[0008]. Jiang also discloses a method for providing image movement on a display by click and drag navigation, utilizing placeholders in the memory of the mobile device. *Id.* at [0009]. Jiang seeks to address the limited memory capacity of mobile devices and improve the range of image viewing and web browsing capabilities with minimal impact on the resource consumption of the device. *Id.* at [0006].

Jiang is analogous art to the '192 patent, as it is within the same field of endeavor of mobile device applications. *See* Ex. 1007 [Jiang], [0002]; Ex. 1003 [Medvidovic], ¶¶89-91.

B. Motivation to Combine

A POSITA would have been motivated to combine the teachings of Lee with the teachings of Jiang, for example, to improve Lee's photo modification application with Jiang's image manipulation capabilities. At the time of the '192 patent, as Jiang recognizes, users were increasingly reliant on mobile devices, and Jiang acknowledges that "[i]mage viewing and Web browsing are important features of mobile devices." Ex. 1007 [Jiang], [0005]; *see also* Ex. 1003 [Medvidovic], ¶¶92-93. Given this increased reliance on mobile devices and these known important features, a POSITA would have recognized a desire to improve a mobile phone's user interface by providing a functionality to manipulate (move and rearrange) images on the mobile display as well as within mobile applications to increase application utility. Ex. 1003 [Medvidovic], ¶¶93-94.

Jiang acknowledges that "the advanced display capabilities of mobile devices lack certain user interface features" and thus proposes "ways to improve the range of image viewing and web browsing capabilities with minimal impact on the" resource consumption of mobile devices. Ex. 1007 [Jiang], [0005], [0006]; Ex. 1003 [Medvidovic], ¶¶93-94. Thus, a POSITA would have recognized Jiang's teachings as an improvement on prior image viewing and web browsing capabilities, and would have been motivated to incorporate Jiang's teachings of "ways for manipulating … images on the mobile display" and "implementations" of Jiang's

"backup and restore concept." Ex. 1007 [Jiang], [0007], [0008]; Ex. 1003 [Medvidovic], ¶¶93-94. This is particularly true with the increasing amount of data for mobile devices and applications, wherein the data can consist of images and photos. Ex. 1003 [Medvidovic], ¶¶93-94.

Furthermore, a POSITA would have reasonably expected to succeed in improving Lee's mobile application that enables a user to modify a photo using Jiang's image viewing capabilities. Ex. 1003 [Medvidovic], ¶95. Jiang teaches that its techniques "can be implemented in various applications" and its application runs "on a mobile phone, and more specifically, a mobile camera phone" just like Lee's device. Ex. 1007 [Jiang], [0008], [0022]. Adding the capabilities taught by Jiang to mobile devices would have been nothing more than routine software development for a POSITA to address the increasing user demand for more efficient image manipulation and viewing on such mobile devices and applications. Ex. 1003 [Medvidovic], ¶95. Thus, the implementation of such image manipulation and browsing would have been both obvious and consist of mere routine software development to increase the utility of mobile devices and applications for everyday users. Ex. 1003 [Medvidovic], ¶95.

C. Dependent claim 66

1. Claim 66: "wherein the application is configured to allow an end user[5] to manage or update the modified photo or photo application through a server or other connection to the internet"

Claim 66 depends from claim 60 and thus specifies that the application is configured to allow an end user to manage the modified photo or photo application through a server or other Internet connection.

Jiang discloses that "users can capture photo images in their mobile devices, **store and manipulate the captured images**, and **upload data of the captured images to a server**." Ex. 1007 [Jiang], [0025]. Jiang teaches that "photo images can be captured and manipulated by the mobile phone." *Id.* at [0046]. The user has the option to select "online album," which "allows the user to access and manipulate photo images that have already been uploaded to the server from the user's PC or mobile phone and stored in the online album." *Id.* Jiang further teaches the "online album is dynamically rendered within the client (mobile device) based on the client-server interactions (i.e., photos are pulled from the server dynamically and placed in the online album)." *Id.*

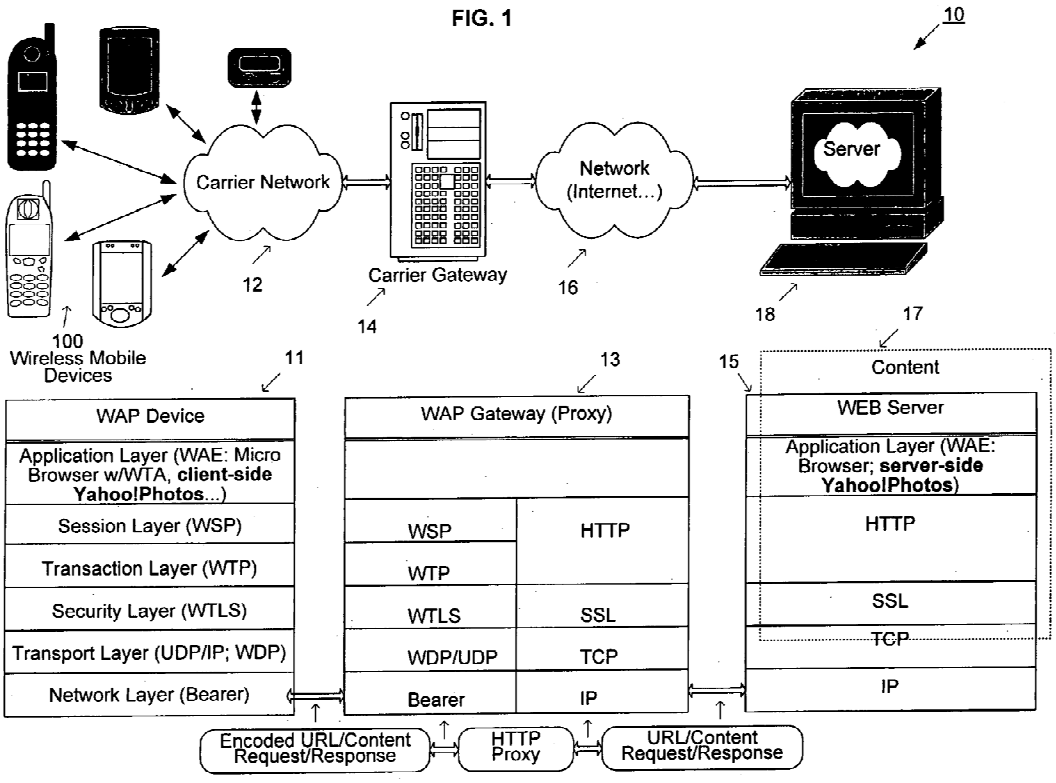
[5] For purposes of this Petition, "end user" is interpreted as the same user as in claim 60.

After selecting the "online album" option, the user is shown a page that "lists the names of photo albums available to the named user which are associated with the user's account." *Id.* at [0048]-[0049], Fig. 4A. The "album listing includes only albums that are on the server and can be dynamically pulled from it." *Id.* at [0049]. The user may select an album that will bring up "the 'photo list' page" and a user may further select a photo to perform an action. *Id.* Actions, such as "'save to mobile,' 'email photo,' 'screen saver,' 'thumbnails,' 'online albums,' and 'home,'" are available through a menu. *Id.* at [0049]-[0054].

The user also has the option to select "mobile album," which "allows the user to access and manipulate photo images that have been already downloaded from the server and saved in the mobile album." *Id.* at [0047], [0055]. After selecting "mobile album," the application "presents two action menus, 'open' and 'action.'" *Id.* at [0056]. The actions presented include "'slide show,' 'move,' 'delete photo,' 'delete all' (photos), 'thumbnails,' 'history,' and 'home.'" *Id.* at [0056]-[0061]. The "move" action allows the user to "rearrange the photos … as well as choose to drop a photo or save it." *Id.* at [0059], Figs. 4B, 4D. Thus, Jiang teaches an application "configured to allow an end user to … **manage or update** the modified photo … through a server" as recited. Ex. 1003 [Medvidovic], ¶¶96-101. For example, in the combination, a photo, edited/modified as taught by Lee, would be uploaded to a

server as taught by Jiang and managed or updated (e.g., moved, deleted, etc.), rendering obvious this limitation. Ex. 1003 [Medvidovic], ¶¶96-101.

Jiang further teaches that the server "**operates as a repository** for the data of photo images, and users can download from the **server** to their mobile devices data of previously captured photo images, as well as **store and manipulate such images**." Ex. 1007 [Jiang], [0025]. Figure 1 shows the wireless mobile devices connected to the server via the Internet. *Id.* at Fig. 1, [0024]. The mobile devices in Jiang's system are WAP-enabled and the server supports the world wide web protocol. *Id.* at [0026]; *see also id.* at [0027]-[0032]. Additionally, Jiang teaches that the program provides the ability to "push and pull information via the Internet" including photos. Ex. 1007 [Jiang], [0024]; *see also id.* at [0046] ("live online connection"). Thus, Jiang also teaches an application "configured to allow an end user to manage or update the modified photo … through [an] … other connection to the internet."



Ex. 1007 [Jiang], Fig. 1.

Accordingly, Jiang renders obvious this limitation, and a POSITA would have been motivated to combine the teachings of Jiang with Lee as set forth above to render obvious claim 66. Ex. 1003 [Medvidovic], ¶¶96-101.

VI. Ground 1C: Claims 67-69 are unpatentable over Lee in view of Tran

A. Overview of the Prior Art

1. Tran (Ex. 1008)

U.S. Publication No. 2006/0015404 to Tran ("Tran") is pre-AIA § 102(e) prior art because Tran's application's filing date of May 31, 2005 pre-dates the earliest priority date of the '192 patent.

Tran discloses a consumer purchasing behavior profiling system in which consumer profiles are created based on various data points, including demographic data, life style affinity, brand affinity, product preferences, real-time responses to advertising messages, price sensitivity, and market trends. Ex. 1008 [Tran], [0018]. As relevant to challenged claims 67-69, Tran teaches that advertisers "send targeted advertising messages to the consumers" on "wireless devices." *Id.* at Abstract, [0019].

Tran is analogous art to the '192 patent, as it is in the same field of endeavor of mobile device applications. *See* Ex. 1008 [Tran], [0053] ("application … can be a small program that can be deployed onto the mobile phones"); Ex. 1003 [Medvidovic], ¶¶104-105.

B. Motivation to Combine

A POSITA would have been motivated to combine the teachings of Lee with the teachings of Tran, for example, to improve Lee's mobile photo editing application with Tran's targeted advertising capabilities. Before the '192 patent, a POSITA would have recognized that the concept of targeted advertisements within mobile devices and applications was already gaining significant widespread popularity, and a POSITA would have recognized a motivation in the art to incorporate Tran's teachings of targeted mobile advertising within a mobile device application, such as the mobile device application taught by Lee. Ex. 1003

[Medvidovic], ¶¶106-108. Specifically, as Tran teaches, "advertising messages on wireless devices can be fine tuned so that they are relevant, personalized, and anticipated to the individual consumers" and thus a POSITA would have recognized an explicit benefit and motivation to incorporate Tran's teachings of displaying advertisements on mobile phones, such as the mobile phone of Lee. Ex. 1008 [Tran], [0018]; Ex. 1003 [Medvidovic], ¶¶106-108.

Accordingly, a POSITA would have been motivated to incorporate advertising display capabilities as taught by Tran within the application of Lee. Further, a POSITA would have been motivated to consider the generation of various revenue streams through mobile webpages or applications, particularly through mobile ads. Ex. 1003 [Medvidovic], ¶¶106-108. Also, it would have been obvious to a POSITA to consider the marketing of specific brands throughout these mobile ads to generate revenue for both the advertiser and the advertising platform. Ex. 1003 [Medvidovic], ¶¶106-108. Thus, the implementation of targeted ads in mobile devices and applications to generate revenue (such as through brand marketing) would have been obvious and mere routine software development for a POSITA. Ex. 1003 [Medvidovic], ¶¶106-108. Combining the teachings of Tran's mobile cookie application and mobile advertising application, which display advertisements on a user's mobile device (*see, e.g.*, Ex. 1008 [Tran], [0122]) with Lee's mobile phone would have been nothing more than the combination of known prior art

elements according to known methods (e.g., software programming) to yield the predictable result of a mobile phone with the capability to display advertisements. Ex. 1003 [Medvidovic], ¶¶106-108.

Furthermore, a POSITA would have reasonably expected to succeed in improving Lee's mobile application that enables a user to modify a photo using Tran's targeted advertising and consumer profiling system capabilities. For example, a POSITA would have recognized the modification as involving nothing more than routine software programming, within the level of skill in the art, to incorporate code corresponding to the mobile cookie application functionality taught by Tran within the code of Lee's mobile application. Ex. 1003 [Medvidovic], ¶¶106-108.

C. Dependent claims 67-69

1. Claim 67: "wherein mobile revenues are created using the modified photo or application"

Claim 67 depends from claim 60 and specifies that mobile revenues are created using the modified photo or mobile application.

Tran teaches a consumer purchasing behavior profiling system on mobile devices that enables advertisers to send targeted advertising to consumers. Ex. 1008 [Tran], [0018]. Tran acknowledges that "[r]ecent advancement of wireless devices such as **mobile phones**" allows "advertisers to communicate one-to-one with consumers." *Id.* Those "advertising messages on wireless devices can be fine tuned

so that they are relevant, personalized, and anticipated to the individual consumers." *Id.* at [0019]. The system includes a "Membership Service Provider," which is "the entity providing service of distributing electronic coupons, discount offers, advertising messages, and ticket information to consumers." *Id.* at [0024]. Figure 1 illustrates the relationship between the consumer, membership service provider, retailers, and other service companies. *Id.* at Fig. 1, [0021]-[0025]. Tran explains that the process works with the consumer submitting personal profile data, the service companies and retailers creating incentive programs, the membership service providing the advertisements to consumers, the consumers purchasing products or redeeming coupons, and the service providers reimbursing the retailers and membership service providers. *Id.* at [0026]-[0044]. The membership service provider creates revenue through a mobile application using Tran's system. *Id.* at [0044]; Ex. 1003 [Medvidovic], ¶¶109-110.

In one implementation of Tran's system, Tran describes a mobile cookie application for implementing advertisements in a nonintrusive manner. Ex. 1008 [Tran], [0045], [0080], [0117]-[0119], [0122], Figs. 2, 7, and 8. Figure 8 illustrates the "Mobile Cookie application 848," which resides on the SIM card 872 of a mobile phone. *Id.* at Fig. 8, [0117]-[0140].

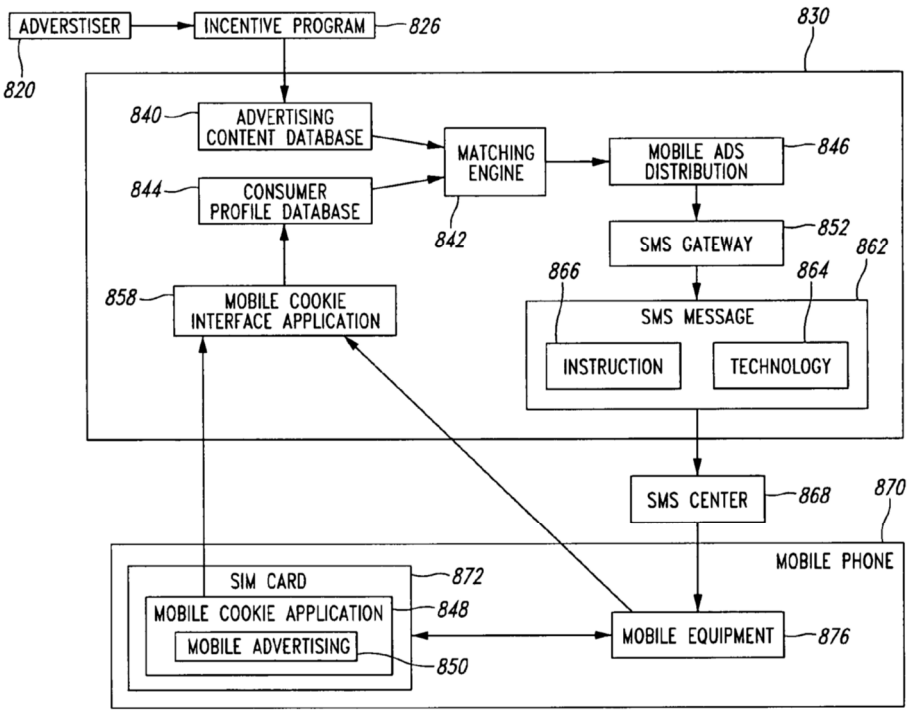


Fig. 8
MOBILE COOKIE APPLICATION

Ex. 1008 [Tran], Fig. 8.

The mobile cookie application 848 registers with the mobile phone's operating system and requests it "to forward all messages with specific headers and/or message types to the Mobile Cookie application 848." *Id.* at [0121]. When the membership service sends an ad, as described by the process in Figure 1, the mobile phone's operating system recognizes the message is for the mobile cookie application. *Id.* at [0122]. The application then launches the "Mobile Advertising application 850" if the user is not using the mobile phone. *Id.* The Mobile Advertising application also determines which technology was used to send the ad and then follows the instructions for retrieving and displaying the ad. *Id.*

Tran explains that once a user receives an advertising message, the system sends data about the consumer to the advertisers and manufacturers. Ex. 1008 [Tran], [0059]-[0060], [0067], [0098], [0102]-[0104]. The advertisers and manufacturers in turn pay the membership service provider "for the services associated with distributing and clearing redeemed coupons." *Id.* at [0067]; *see also id.* at [0104]. Tran also describes important benefits of such mobile applications, including "revenue recovery from potentially unsold tickets" and "venue sponsors to launch more personalized incentive programs," maximizing "profit margins." *Id.* at [0116]. A POSITA would have recognized that displaying advertisements on a mobile phone generates revenue for the party providing the facility to display advertisements from the advertiser (e.g., the provider of Tran's mobile cookie application). Ex. 1003 [Medvidovic], ¶¶111-115 (citing, e.g., Ex. 1016 [Reyck], p. 509 ("revenues from retailers paying for each ad broadcast")).

Thus, by teaching an application that displays advertisements, which create revenue, the combined teachings of Lee and Tran teach that "mobile revenues are created using the … application" and render obvious claim 67. Ex. 1003 [Medvidovic], ¶¶109-116.

2. Claim 68: "wherein the revenues include ads"

Claim 68 depends from claim 67.

As described above for claim 67, Tran teaches a consumer purchasing behavior profiling system on mobile devices that enables advertisers to send targeted advertising to consumers. Ex. 1008 [Tran], [0018]. The membership service provider sends an ad, such as a coupon or incentive program, to the mobile phone, and returns consumer data in exchange for payment. *Id.* at [0026]-[0044]. When the ad is sent, a mobile cookie application stored on the mobile phone, retrieves and displays the advertisements on the consumer's mobile phone. *Id.* at Fig. 8, [0117]-[0140]. The ad may be sent via Short Message Service (SMS), Multimedia Messaging Service (MMS), Java 2 Platform Micro Edition (J2ME), Binary Runtime Environment for Wireless (BREW), WAP, and WAP Push. *Id.* at [0122]-[0123].

Tran explains that once a user receives an advertising message and redeems or purchases items, the system sends data about the consumer to the advertisers and manufacturers. *Id.* at [0059]-[0060], [0067], [0098], [0102]-[0104]. The advertisers and manufacturers in turn pay the membership service provider "for the services associated with distributing and clearing redeemed coupons." *Id.* at [0067]; *see also id.* at [0104]. Accordingly, Tran teaches that "revenues include ads" as recited and renders obvious claim 68. Ex. 1003 [Medvidovic], ¶¶117-120.

3. Claim 69: "wherein the revenues include brand marketing"

Claim 69 depends from claim 67.

As described above for claim 67, Tran discloses a consumer purchasing behavior profiling system on mobile devices that enables advertisers to send targeted advertising to consumers. Ex. 1008 [Tran], [0018]. Consumer profiles are created based on various data points, including "brand affinity" and this "can include names of products and/or manufacturers that the consumers want to receive advertising messages from." *Id.* at [0047], [0050], [0082]-[0083], [0086]. The membership service provider sends an ad, such as a coupon or incentive program, to the mobile phone, and returns consumer data in exchange for payment. *Id.* at [0026]-[0044]. The membership service provider constructs "personalized advertising messages" based on the consumer who will receive the coupon. *Id.* at [0059], *see also id.* [0052], [0088], [0127]-[0128].

Tran explains that once a user receives an advertising message and redeems or purchases items, the system sends data about the consumer to the advertisers and manufacturers. *Id.* at [0059]-[0060], [0067], [0098], [0102]-[0104]. The advertisers and manufacturers in turn pay the membership service provider "for the services associated with distributing and clearing redeemed coupons." *Id.* at [0067], *see also id.* [0104]. Accordingly, Tran teaches that "revenues include brand marketing" as recited and renders obvious claim 69. Ex. 1003 [Medvidovic], ¶¶121-124.

VII. Ground 2A: Claims 60-65 are unpatentable over Lee in view of Poulin-910

Should the Board disagree with Petitioner's construction that Claim 60 is a product-by-process claim, Lee in view of Poulin-910 renders obvious claims 60-65. Poulin-910 is the grandparent of the '192 patent. Ex. 1001 ['192 patent], Cover. Poulin-910 is prior art because the '192 patent is not entitled to a priority date any earlier than its filing date.

A. The '192 Patent's Earliest Effective Filing Date Is No Earlier than November 9, 2012

1. Background: shifting the burden of production

Petitioners bear the ultimate burden of *persuasion* of demonstrating unpatentability. But once Petitioners provide invalidating art, the burden of *production* shifts to the Patent Owner to "show that the prior art does not actually invalidate the patent or that it is not prior art because the asserted claim is entitled to the benefit of an earlier filing date." *Research Corp. Techs., Inc. v. Microsoft Corp*., 627 F.3d 859, 870 (Fed. Cir. 2010); *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1379-80 (Fed. Cir. 2015) (petitioner satisfied its initial burden "by arguing that [the art] anticipated the asserted claims," shifting the burden of production to the patentee to show "either [the art] does not actually anticipate" or the art "is not prior art"); *Penumbra, Inc. v. RapidPulse, Inc*., IPR2021-01466, Paper 34 at 18 (PTAB Mar. 10, 2023) (precedential).

Here, Petitioners demonstrate that Patent Owner's earlier patents are invalidating prior art, shifting the burden of production to Patent Owner to come forward with evidence showing either (i) the art is not *prior* art because the '192 patent's claims are entitled to the benefit of an earlier filing date; or (ii) the art does not actually invalidate the patent. Patent Owner can do neither, as demonstrated below.

2. The '192 patent's claims are not supported by its parent, the '543 Application

Each claim of the '192 patent is entitled to the benefit of an earlier-filed application only if the earlier application satisfies the written description requirement of 35 U.S.C. § 112. *See* 35 U.S.C. § 120; *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998). There must also be a continuity of disclosure: "each application in the chain leading back to the earlier application must comply with the written description requirement of 35 U.S.C. § 112." *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1571 (Fed. Cir. 1997). Further, "[e]ntitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed." *Id.* at 1571-72.

Here, the priority chain is broken at the '192 patent's immediate parent, Application No. 12/759,543 ("'543 application," Ex. 1004) because, as discussed below, there is no disclosure of the claimed features earlier than the filing date of the

'192 patent. As a result, claims 60-69 of the '192 patent are not entitled to the benefit of any date earlier than the '192 patent's filing date of November 9, 2012.

Claim 60 of the '192 patent recites an "application configured to enable a user to modify a photo on the mobile device." *See* Ex. 1001, Claim 60. The dependent claims 61-69 recite further features of the recited application, including adding content (e.g., text, an image) to the photo, distributing the modified photo, managing or updating the modified photo or photo application, or creating mobile revenues. *See id.*, Claims 61-69. But the '192 patent's immediate parent, the '543 application (including its as-filed claims) lacks any disclosure of these features. *See generally* Ex. 1004; Ex. 1003 [Medvidovic], ¶¶133-140.

The '543 application describes a system and method for developing a mobile application, where the application may be a frame based application. Ex. 1004 ['543 application], [0024]. The system comprises an emulator implemented on a computer for testing the developed frame based applications on an emulated mobile device. Ex. 1004 ['543 application], [0024]-[0028]. However, the '543 application does not provide any specific examples of the frame based applications that are developed using the emulator. Ex. 1003 [Medvidovic], ¶¶135-136. More specifically, as relevant to the Challenged Claims, the '543 application does not describe or provide written description for the development of any application that enables "a user to modify a photo on the mobile device" as required by claim 60.

At most, the '543 application states, in one portion, that a frame based application being developed using the emulator may include multiple frames. Those frames may include "graphics and/or action scripts that generate the graphical image for display." Ex. 1004 ['543 application], [0043]. Additionally, a frame may include "multiple graphic elements and/or action scripts that involve image manipulation (e.g., retrieving data from non-volatile storage, Avatar manipulations, animations, etc.)." *Id.* That is, the described frame based application with an action script may provide a software author the ability to create moving images within the application. But this does not disclose any ability for a **user** (i.e., a mobile device user) of an application to **modify** a photo, as would be required for written description support of claim 60. Accordingly, the '543 application does not provide written description support for the full scope of claim 60 of the '192 patent. Ex. 1003 [Medvidovic], ¶137.

Additionally, the '543 application does not describe the specific modifications to a photo that the application recited in claim 60 provides, including adding content, such as text, a caption, an image, or animation. Ex. 1003 [Medvidovic], ¶138. There is likewise no description of allowing the end user to distribute the modified photo or manage or update the modified photo or photo application through a server or other connection to the internet. Ex. 1003 [Medvidovic], ¶138. Thus, the full scope

of the ’192 patent’s Challenged Claims is not supported by the written description of the ’543 application.

The ’543 application’s as-filed claims do not provide the requisite written description support, either. Those claims instead recite a system and method for emulating an application executing on a mobile device, not a mobile application, let alone a mobile application that enables a user to modify a photo. Ex. 1003 [Medvidovic], ¶139.

In sum, nowhere does the ’543 application, including its as-filed claims, describe a mobile application that enables a user to modify a photo, as required by claim 60, and accordingly, claim 60 does not have written description support in the ’543 application. Ex. 1003 [Medvidovic], ¶¶133-140.[6] Thus, claims 60-69 of the ’192 patent are not entitled to the effective filing date of the ’543 application or any effective filing date any earlier than the ’192 patent filing date, and Patent Owner cannot meet its burden to show otherwise. The proper priority date of the ’192 patent

[6] For completeness, Petitioner notes that the specification of the parent of the ’543 application, U.S. Patent Application No. 11/449,958 (Ex. 1030), also does not support the claimed features, nor does the provisional application to which the ’192 patent claims priority, U.S. Provisional Application No. 60/689,101 (Ex. 1031), support the claimed features.

is therefore no earlier than the filing date of U.S. Application No. 13/673,692 that matured into the '192 patent: November 9, 2012.

B. Overview of the Prior Art

1. Poulin-910 (Ex. 1009)

Poulin-910 is the patent that issued from the earliest non-provisional application in the '192 patent's alleged priority chain. Because claims 60-69 are not entitled to a priority date earlier than the filing date, Poulin-910 is therefore prior art under § 102(b) (pre-AIA) because it was published on October 12, 2010, over one year before the '192 patent's November 9, 2012, filing date.

Poulin-910 teaches using a software authoring platform that emulates an application on a mobile device. For example, Poulin-910 teaches that a method "authors, emulates and profiles an application" where "[t]he application is authored using an application development tool and the mobile device is emulated using a model based upon the characteristics." Ex. 1009 [Poulin-910], 2:3-24. Poulin-910 further explains that the "[a]pplication 104 may be developed using a frame based application development tool 112 …. Application 104 is transferred to emulator 101 for playing within mobile device model 102 to estimate resource usage of application 104 when played on a mobile device 114." *Id.* at 3:37-53. Poulin-910 further explains that its platform visually emulates hardware characteristics of the mobile device. *Id.* at 4:10-39 ("Model algorithms 148 represent one or more algorithms that

operate to generate mobile device model 102 to emulate mobile device 114 while executing application 104."). As an example, Poulin-910 describes a display showing a timeline with vertical bars that represent processor resource utilization for frames of the mobile application. *Id.* at 6:66-7:22 ("Display 300 clearly displays processor resource utilization by frame 223 of application 104, thereby facilitating assimilation of stresses applied to mobile device 114 when playing application 104.").

Poulin-910 is analogous art to the '192 patent, as both are within the field of endeavor of mobile device applications. Ex. 1003 [Medvidovic], ¶142.

C. Motivation to Combine

A POSITA would have been motivated to combine the teachings of Lee and Poulin-910, such that Lee's photo modification application is developed using Poulin-910's software authoring platform. Ex. 1003 [Medvidovic], ¶¶141-151.

As described above, Lee discloses an application on a mobile device that allows users to modify photos. Ex. 1005 [Lee], 3:24-4:3 ("mobile phone users can edit photos or pictures and send them as photo mail"). However, Lee does not explain how the mobile device application was developed.

A POSITA developing software prior to the '192 patent, especially software for mobile devices, would have been aware of development environments for software, and would have been motivated to consider and combine the teachings of

Poulin-910 of a software authoring platform that emulates characteristics indicative of performance of a mobile device. Ex. 1003 [Medvidovic], ¶¶143-149. For example, as Dr. Medvidovic details in his declaration, development environments for mobile device applications were well-known prior to the '192 patent, and it was likewise well-known to use emulators to test software and the performance of hardware executing that software. Ex. 1003 [Medvidovic], ¶¶144-149. And, a POSITA would have recognized that models for software development processes included steps of testing or validation, and would have sought to combine teachings of a testing environment for software development, such as that of Poulin-910, when developing an application like the photo modification application of Lee. Ex. 1003 [Medvidovic], ¶¶144-149.

A POSITA would have also recognized that when a mobile application is developed for use on many different types of mobile devices, it was desirable to test the application on those multiple types of mobile devices. Ex. 1009 [Poulin-910], 1:50-62; Ex. 1003 [Medvidovic], ¶¶144-149. For example, long before the '192 patent, the computing industry had sought to develop software applications in a manner that would permit running those applications on multiple types of devices. Ex. 1003 [Medvidovic], ¶¶144-149. To facilitate testing of an application on multiple types of mobile devices, the industry had developed tools to evaluate the performance of the application on those multiple types of devices. Poulin-910's

software authoring tool, like other software development tools before the earliest effective filing date, is an example of such a tool that allows software developers to emulate hardware characteristics of multiple mobile device types to test an application. Ex. 1009 [Poulin-910], 3:23-31, 4:14-5:6; Ex. 1003 [Medvidovic], ¶¶144-149. Using Poulin-910's software authoring tool to develop Lee's mobile application would have therefore been nothing more than use or application of a known technique (i.e., emulation of a mobile device) to a known method (e.g., development of mobile applications) ready for improvement to yield the predictable result of an application developed using an emulation tool. Ex. 1003 [Medvidovic], ¶¶144-149.

A POSITA would have been motivated to develop Lee's mobile application using Poulin-910's software authoring tool for several reasons. For example, Poulin-910 acknowledges that "[w]here an application is targeted to play on many types of mobile device, it must be transferred and tested on a mobile device representative of each targeted mobile device type" but this "transferring and testing process is time-consuming and therefore costly for the application author." Ex. 1009 [Poulin-910], 1:58-62. Poulin-910 purports to solve this problem, as it teaches a development system whereby "[c]haracteristics for each mobile device to be emulated may be downloaded from a server for a determined price" that would "save each developer purchasing each target mobile device … as well as alleviating the

need to travel to a wireless network location whilst testing each mobile device before public release, two substantial development and release costs." *Id.* at 12:26-43. Poulin-910 also notes that the increase in the number of mobile devices "requires that applications designed to run on these mobile devices also sustain rapid development" and provides techniques for such rapid development. *Id.* at 12:26-43. Thus, a POSITA would have recognized an express motivation to combine Poulin-910's teachings, e.g., reduced software development costs and faster software development. Ex. 1003 [Medvidovic], ¶¶144-150.

Furthermore, a POSITA would have reasonably expected to succeed in developing Lee's mobile application that enables a user to modify a photo using Poulin-910's software authoring tool, because combining the teachings merely applies Poulin-910's software development environment to a particular piece of known software, an image editing tool. Ex. 1003 [Medvidovic], ¶151.

D. Independent Claim 60

1. 60[pre]: "a system comprising"

See supra § IV.B.1.

2. 60[a]: "an application configured to enable a user to modify a photo on a mobile device"

Lee teaches this element. *See supra* § IV.B.2.

3. 60[b]: "wherein the application is developed using a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality

of hardware characteristics indicative of performance of the mobile device when executing the application"

Poulin-910 teaches this element.

First, Poulin-910 describes developing an application using its software authoring platform. Ex. 1009 [Poulin-910], 3:38-58 (the mobile application is "transferred to emulator 101 for playing within mobile device model 102 to estimate resource usage of application 104 when played on mobile device 114" and the "emulator 101 is integrated with flash development tool 112 to form an authoring environment 122 that facilitates development and testing of application 104"). Thus, Poulin-910 teaches "the application is developed using a software authoring platform." Ex. 1003 [Medvidovic], ¶155.

Second, Poulin-910 teaches emulating "a plurality of hardware characteristics indicative of performance of the mobile device when executing the application." Poulin-910 explains that it provides a "system 100 for emulating and profiling a frame based application 104 playing on a mobile device 114." Ex. 1009 [Poulin-910], 3:19-31. Poulin-910 further states that "Emulator 101 generates a mobile device model 102, based upon mobile device characteristics 115 of mobile device 114." *Id.* The emulator in Poulin-910 also includes "model algorithms 148 [that] define operation of mobile device 114 based upon mobile device characteristics." *Id.* at 4:10-19. Table 1 shown below includes an exemplary list of characteristics of the mobile device, including processor speed and storage access speed, which a

POSITA would have recognized as "hardware characteristics indicative of performance of the mobile device when executing the application." Ex. 1003 [Medvidovic], ¶156.

TABLE 1

Mobile Device Characteristics

Parameter	Value
Name	NOKIA 3650
Processor	ARM 4T
Processor Speed	104 MHz
Storage Access Speed	5.88 files/second
RAM Size	256 MB
Storage Size	512 MB
Display Width	256
Display Height	394
Pixel Depth	24
Processor Availability	60%
RAM Availability	60%
Storage Availability	40%

Ex. 1009 [Poulin-910], Table 1.

Third, Poulin-910 teaches that its software authoring platform is "configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application." For example, Poulin-910 teaches displaying resource utilization of each frame of the application as it is played in real time on the emulated mobile device. Ex. 1009 [Poulin-910], 6:51-65 (explaining that "[o]ne or more profiler modules 202, 204, 206 and 208 within profiler 106 monitor resource utilization of each frame, storing results as profiled data 152" which is then

"displayed as a frame based profile data 110 on display 140 for review by the user"); Ex. 1003 [Medvidovic], ¶157. For example, in Figure 3, Poulin-910 shows a display with a timeline of the application and each vertical bar indicates resource utilization of the processor of the emulated device. Ex. 1009 [Poulin-910], 6:65-7:22 ("display 300 is shown with a time line 302 that represents timeline 222 of application 104" and "each bar 304 indicates processor resource utilization for certain frames 223 of application 104"); Ex. 1003 [Medvidovic], ¶157.

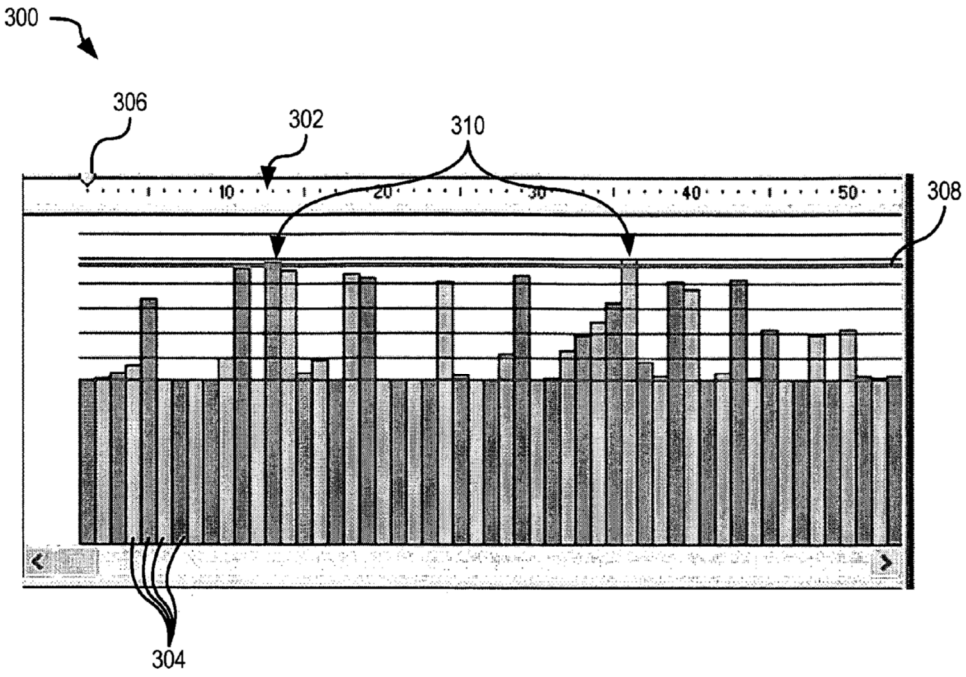


FIG. 3

Ex. 1009 [Poulin-910], Fig. 3.

Although Poulin-910 only expressly shows a single "profile display window," it would have been obvious to display multiple such windows to show, for example the processor and storage performance of the mobile device. *In re Harza*, 47

C.C.P.A. 771, 774 (1960) ("It is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced."); Ex. 1003 [Medvidovic], ¶158.

Accordingly, Poulin-910 teaches an "application" that "is developed using a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application." The combined teachings of Lee and Poulin-910 therefore render obvious claim 60. Ex. 1003 [Medvidovic], ¶¶154-160.

E. Dependent claims 61-65

Claims 61-65 would have been obvious in view of the combined teachings of Lee and Poulin-910 for the same reasons as set forth with respect to Ground 1A. *See supra* §§ IV.C.1-5.

VIII. Ground 2B: Claim 66 is unpatentable over Lee in view of Poulin-910 and Jiang

For the same reasons as detailed with respect to Ground 1B, Lee in view of Poulin-910 and Jiang render obvious claim 66, and a POSITA would have been motivated to combine the teachings of Jiang. *See supra* § V.C.1.

IX. Ground 2C: Claims 67-69 are unpatentable over Lee in view of Poulin-910 and Tran

For the same reasons as detailed with respect to Ground 1C, Lee in view of Poulin-910 and Tran render obvious claims 67-69, and a POSITA would have been motivated to combine the teachings of Tran. *See supra* § VI.C.1-3.

X. Secondary Considerations

There are no secondary considerations known to Petitioners that affect—let alone overcome—the strong cases of obviousness set out above. Should the Patent Owner proffer any relevant evidence of secondary considerations in its preliminary response, Petitioners should be given leave to file a reply.

XI. The Board Should Reach the Merits of This Petition

Discretionary denial of this petition would be inappropriate.

A. *Advanced Bionics* Favors Institution

The Board should reach the merits of this petition and should not exercise its discretion to deny based on 35 U.S.C. § 325(d).

The Board's § 325(d) analysis considers: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte*

GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential); 35 U.S.C. § 325(d).

Of the references applied in this petition, only Poulin-910 was previously presented to the Office, in an IDS filed by the Applicant during prosecution. *See* Ex. 1002 ['192 PH], 51-58. Poulin-910 is only relevant to the patentability arguments in this Petition if the Board does not agree that, consistent with precedent, claims 60-69 are product-by-process claims. *See supra* § III.E.1. Regardless, Poulin-910 was never applied to reject any claim and was not discussed by the Examiner during prosecution. There is no record evidence to show the Examiner appreciated that the challenged claims were not entitled to claim the benefit of the priority applications' filing date (*see supra* § VII.A), or how the teachings of Poulin-910 would apply to the '192 patent's claim limitations when the correct priority date is considered (*see supra* § VII.D). *See also CrowdStrike, Inc. v. Webroot Inc.*, IPR2023-00126, Paper 9 at 14 (PTAB May 5, 2023) ("[The Board] cannot determine the extent to which [cited reference] was evaluated during the examination because it was never used in a rejection," and because "[cited reference] was not the basis of a rejection, there is no overlap of arguments."). Indeed, when a reference was never "substantively discussed by the Examiner[,]" "a petitioner's showing that the challenged claims are unpatentable over the asserted prior art may itself be evidence of material error by

the Office during prosecution." *Quasar Sci. LLC v. Colt Int'l Clothing, Inc. d/b/a Colt LED*, IPR2023-00611, Paper 10 at 14 (PTAB Oct. 10, 2023).

Additionally, with respect to the Challenged Claims, the prosecution history suggests material error by the Office at least based on the searching performed after claims 60-69 were added. As detailed above (*see supra* § III.C), claims 60-69 were added by amendment after the original claims received a nonstatutory double patenting rejection. *See* Ex. 1002 ['192 PH], 86-96. After claims 60-69 were added, and prior to issuing the Notice of Allowance, searching was performed in a Cooperative Patent Classification ("CPC") combination set which included CPC classes G06F 11/3447 and 11/3457. Ex. 1002 ['192 PH], 107. CPC classes G06F 11/3447 and 11/3457 relate to "Performance evaluation by modeling" and "Performance evaluation by simulation" respectively.[7] However, CPC classes encompassing, for example, subject matter related to images and processing thereof (e.g., CPC G06T[8]) were not searched, which would have likely uncovered relevant prior art for the limiting language within claim 60. *See also Yealink (USA) Network*

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[7] *See* https://www.uspto.gov/web/patents/classification/cpc/html/cpc-G06F.html #G06F (last visited July 16, 2025).

[8] *See* https://www.uspto.gov/web/patents/classification/cpc/html/cpc-G06T.html #G06T (last visited July 16, 2025).

Technology Co. v. Barco N.V., IPR2025-00491, Paper 18 at 2-3 (PTAB June 25, 2025) (file history indicating Examiner failed to discuss prior art concepts recited in claim was sufficient to demonstrate Office error). Accordingly, the Office erred in this respect as well, and for this additional reason, the Board should reach the merits of the petition.

B. *Fintiv* Factors Favor Institution

Discretionary denial under 35 U.S.C. § 314(a) is not appropriate. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). Patent Owner filed its complaint in the District Court for the Eastern District of Texas asserting the '192 patent against Petitioners on March 6, 2025. The district court litigation is at a very early stage. Petitioners have not filed an answer to Patent Owner's complaint or any other substantive pleadings. The district court has not adopted a schedule, and accordingly there is no scheduled trial date. Additionally, the Petition's merits are strong, as the prior art contains teachings that plainly render obvious all challenged claims.

C. No Other Bases for Discretionary Denial Exist

To the extent Patent Owner argues for discretionary denial, Petitioners reserves the right to address any discretionary issues raised by Patent Owner based on the facts and law as they stand at that time, and further reserve the right to respond

to any discretionary denial arguments pursuant to the Acting Director's March 26, 2025 Memorandum.

XII. Mandatory Notices under 37 C.F.R. § 42.8

A. Real Parties-in-Interest

The real parties-in-interest are Capital One, N.A. and Capital One Services, LLC.

B. Related Matters

The '192 patent is currently at issue in *Wapp Tech Limited Partnership et al. v. Apple Inc. et al.*, 4:25-cv-00230 (E.D. Tex. Filed Mar. 6, 2025).

C. Grounds for Standing

Petitioners certify that the '192 patent is available for *inter partes* review and that Petitioners are not barred from requesting this proceeding.

D. Lead and Backup Counsel and Service Information

Pursuant to 37 C.F.R. §§ 42.8(b)(3), 42.8(b)(4), and 42.10(a), Petitioners designate the following lead counsel:

- Raghav Bajaj (Reg. No. 66,630), raghav.bajaj@lw.com, Latham & Watkins LLP; 300 Colorado Ave. Suite 2400; Austin TX 78701; 737.910.7370.

Petitioner also designates the following backup counsel:

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Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney from Petitioners is attached. Petitioners consent to electronic service.

E. Fee for *Inter Partes* Review

The Director is authorized to charge the fee specified by 37 C.F.R. § 42.15(a) to Deposit Account No. 506269.

XIII. Conclusion

For the reasons set forth above, Petitioner respectfully requests *inter partes* review of the Challenged Claims of the '192 patent.

Respectfully submitted,

Dated: July 18, 2025

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Petition complies with the word count limitation of 37 C.F.R. § 42.24(a)(1)(i) because the Petition contains a total of 10,868 words calculated by Microsoft Word's word-count feature. This total excludes the cover page, signature block, and the parts of the Petition exempted by 37 C.F.R. § 42.24(a)(1).

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CERTIFICATE OF SERVICE

The undersigned certifies that a complete copy of this Petition for *Inter Partes* Review of U.S. Patent No. 8,924,192 and all Exhibits and other documents filed together with this Petition were served on the official correspondence address for the patent shown in Patent Center:

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