

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,

Petitioner

v.

DAEDALUS PRIME LLC,
Patent Owner.

Case No. IPR2023-00659
U.S. Patent No. 9,432,840

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,432,840**

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LIST OF EXHIBITS¹

Ex-1001	U.S. Patent No. 9,432,840 to Traynor (“the ’840 Patent”)
Ex-1002	Declaration of Dr. Benjamin Bederson
Ex-1003	Curriculum Vitae of Dr. Benjamin Bederson
Ex-1004	Prosecution History of the ’840 Patent (Application No. 14/583,277)
Ex-1005	INTENTIONALLY LEFT BLANK
Ex-1006	INTENTIONALLY LEFT BLANK
Ex-1007	INTENTIONALLY LEFT BLANK
Ex-1008	U.S. Patent Publication No. 2010/0056181 to Rippon (“Rippon”)
Ex-1009	U.S. Patent No. 8,762,756 to Moy (“Moy”)
Ex-1010	U.S. Patent Publication No. 2009/0168676 to Olson (“Olson”)
Ex-1011	U.S. Patent Publication No. 2008/0305786 to Arumi (“Arumi”)
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Ex-1013	INTENTIONALLY LEFT BLANK
Ex-1014	INTENTIONALLY LEFT BLANK
Ex-1015	INTENTIONALLY LEFT BLANK
Ex-1016	INTENTIONALLY LEFT BLANK
Ex-1017	INTENTIONALLY LEFT BLANK
Ex-1018	INTENTIONALLY LEFT BLANK
Ex-1019	INTENTIONALLY LEFT BLANK
Ex-1020	Claim Comparison Table for the ’840 Patent

¹ Four-digit pin citations that begin with 0 are to the branded numbers added by Samsung in the bottom right corner of the exhibits. All other pin citations are to original page, column, paragraph, or line numbers.

Ex-1021	U.S. District Courts – Combined Civil and Criminal Federal Court Management Statistics (June 30, 2022), available at: https://www.uscourts.gov/statistics-reports/federal-court-management-statistics-june-2022
Ex-1022	Benjamin B. Bederson. 1995. Audio augmented reality: a prototype automated tour guide. In Conference Companion on Human Factors in Computing Systems (CHI '95), I. Katz, R. Mack, and L. Marks (Eds.). ACM, New York, NY, USA, 210-211. DOI: http://dx.doi.org/10.1145/223355.223526 .
Ex-1023	Bederson, B.B., Clamage, A., Plaisant, C. (2008) Enhancing In-Car Navigation Systems with Personal Experience, in Transportation Research Record (TRR), The National Academies, 2064 (2008) 33-42.
Ex-1024	Benjamin B. Bederson and James D. Hollan, Pad++: A Zooming Graphical Interface for Exploring Alternate Interface Physics, USIT '94 Proceedings of the 7th Annual ACM Symposium on User Interface Software and Technology 17 (1994), DOI: http://dx.doi.org/10.1145/192426.192435 .
Ex-1025	U.S. Patent No. 8,261,211
Ex-1026	“How to Save Power in Battery Applications Using the Power-Down Mode in an ADC,” Mercedes Casamayor, Analog Dialogue 37-9, September 2003, http://www.analog.com/analogdialogue
Ex-1027	“User acceptance of mobile services, value, ease of use, trust and ease of adoption,” VTT Publications, June 22, 2005.

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner”) request *inter partes* review (“IPR”) of Claims 1-2, 4-7, 9-12, 14-15 of U.S. Patent No. 9,432,840 (“the ’840 Patent”) (Ex-1001), currently assigned to Daedalus Prime LLC (“PO”).

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

Real Parties-in-Interest: Petitioner identifies the following real parties-in-interest: Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Samsung Semiconductor, Inc., and Samsung Austin Semiconductor, LLC.

Related Matters: Patent Owner has asserted the ’840 Patent against Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Samsung Semiconductor, Inc., and Samsung Austin Semiconductor, LLC in *Daedalus Prime LLC v. Samsung Electronics Co., Ltd.*, No. 2:22-cv-00354 (E.D. Tex. Sept. 12, 2022).

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III. FEE AUTHORIZATION

Pursuant to 37 C.F.R. §42.15(a) and §42.103(a), the PTO is authorized to charge any and all fees to Deposit Account No. 50-0639.

IV. GROUNDS FOR STANDING

Petitioner certifies that the '840 Patent is available for review, this Petition is timely filed, and Petitioner is not barred or estopped from requesting review.

V. PRECISE RELIEF REQUESTED

Petitioner requests review and cancellation of Claims 1-2, 4-7, 9-12, 14-15 as unpatentable based on the following grounds, supported by a declaration from Dr. Benjamin Bederson. Ex-1002 ¶¶1-325; Ex-1003.

Ground	Summary
1	Claims 1-2, 4-7, 9-12, 14-15 are obvious over Rippon
2	Claims 1-2, 4-7, 9-12, 14-15 are obvious over Rippon in view of Moy
3	Claims 1-2, 4-7, 9-12, 14-15 are obvious over Rippon in view of Olson
4	Claims 1-2, 4-7, 9-12, 14-15 are obvious over Arumi in view of Moy
5	Claims 1-2, 4-7, 9-12, 14-15 are obvious over Arumi in view of Olson

VI. THE CHALLENGED PATENT

The '840 Patent purports to disclose a device (e.g., mobile platform) with a plurality of radios and logic to activate and deactivate the radios in response to a change in location. Ex-1001, Abstract. Specifically, the '840 Patent describes a device comprising a plurality of radios, wherein each radio supports a different wireless technology (e.g., cellular, Wi-Fi, Bluetooth), along with logic that detects “changes in location for the mobile platform” based on location and other information, including connection loss information, that is supplied by the plurality of radios. *Id.*, Abstract, 2:12-14, 2:18-25. The logic also activates and/or deactivates, for example, the Wi-Fi radio in response to changes in the mobile platform’s location. *Id.*, Abstract, 2:12-17. The '840 Patent further describes “location profile[s],” with entry and exit criteria, and rules to activate and/or deactivate the plurality of radios if the criteria are satisfied. *Id.*, Abstract, 5:9-39. By selectively activating and/or deactivating the plurality of radios, rather than having them run continuously, the device is able reduce its power consumption and extend its battery life. *Id.*, 3:24-30.

VII. PATENT PROSECUTION HISTORY

The '840 Patent was filed on December 26, 2014 as a continuation of Application No. 13/173,586 (filed June 30, 2011), which issued as U.S. Patent No. 9,380,452 (“the '452 Patent”). During prosecution, the claims were rejected for

obviousness-type double patenting, which the applicant overcame by filing a terminal disclaimer based on the '452 Patent. *See generally* Ex-1004.

This Petition presents new arguments that were not considered during prosecution. The prior art relied on in this Petition was not before the PTO during prosecution of the '840 Patent or during prosecution of its parent '452 Patent. Ex-1002 ¶¶48-49.

VIII. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art at the relevant time (“POSITA”) would have had a bachelor’s degree in computer science, electrical engineering, or a related field, and at least three years of experience in the research, design, development, or testing of human-computer interaction, mobile location services, and/or mobile network technologies, or the equivalent, with additional education substituting for experience and vice versa. Ex-1002 ¶¶30-32.

IX. PRIORITY DATE

For purposes of this proceeding only, Petitioner assumes that the '840 Patent is entitled to its earliest alleged priority date, June 30, 2011, and thus applies pre-AIA 35 U.S.C. §102.

X. CLAIM CONSTRUCTION

Petitioner interprets the claims of the '840 Patent according to the *Phillips* claim construction standard. 37 C.F.R. §42.100(b). To resolve the particular grounds

presented in this Petition, Petitioner does not believe that any term requires explicit construction.² Ex-1002 ¶¶22-23.

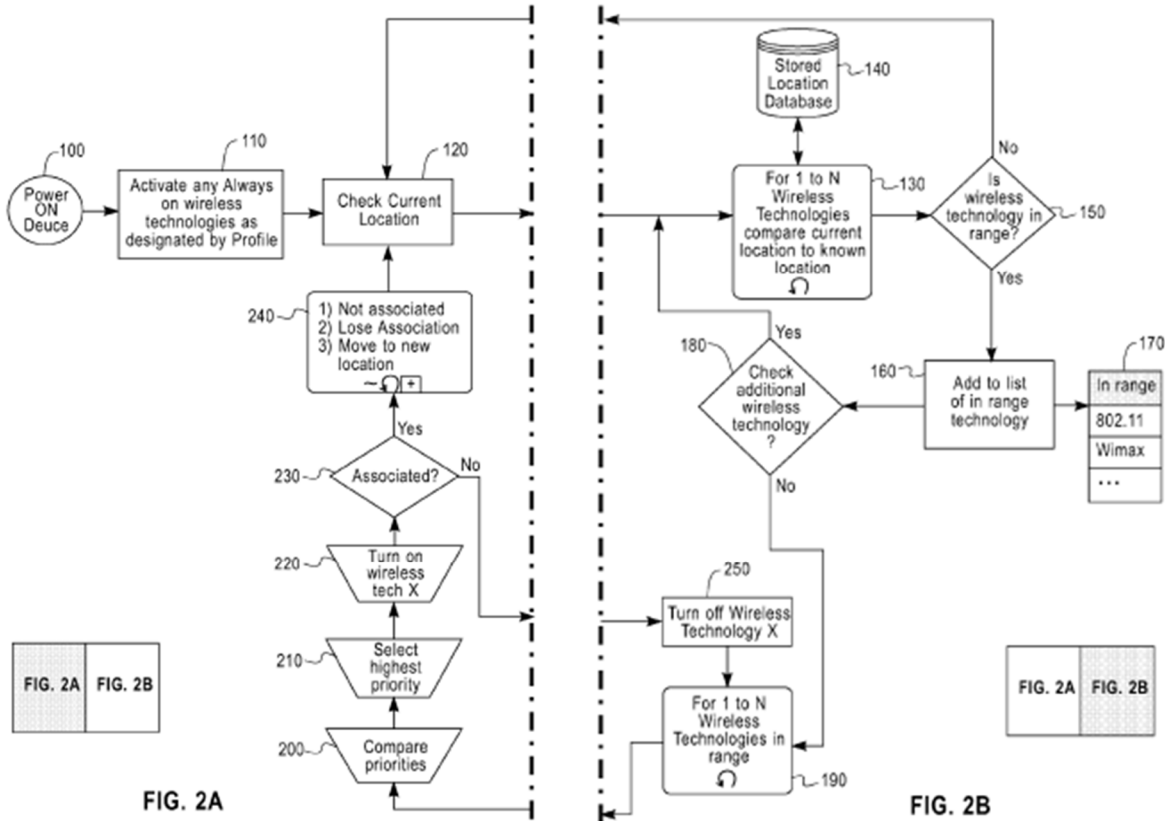
XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART REFERENCES

A. Rippon (Ex-1008)

Rippon is §102(b) prior art as of its U.S. publication date, March 4, 2010.

Rippon discloses a device comprising “one or more wireless communication technology transceivers for one or more wireless communication technologies,” along with “a location-based service system” that is capable of ascertaining the device’s “current location.” Ex-1008 ¶¶8-9, 24; *see also id.*, Abstract. Rippon discloses with Figure 2A/2B, Step 130, that the device’s “current location...is compared to known locations,” which are “locations where one or more wireless communication technologies” in the device “are available to provide a...network connection.” *Id.* ¶25. These “known locations” are stored in the location database at storage device 140. *Id.*

² Petitioner reserves all rights to raise claim construction and other arguments in district court. Additionally, Petitioner will request leave to submit the district court’s claim construction as soon as it becomes available.



More specifically, Rippon's location-based service system can “mark a location where the wireless network of the particular wireless communication technology is available.” *Id.* ¶33. Specifically, “the particular wireless communication technology” for “an available service area” is constructed “[b]ased on physical range characteristics of the particular wireless network” (e.g., “Wi-Fi wireless network has a range of...120...to...300 ft” and “IEEE 802.11 wireless network has a range of 300...to 600 ft”). *Id.* Once the device “enters the available service areas,” “a wireless communication technology transceiver of the particular wireless communication technology is activated in order to connect to the wireless

network.” *Id.* When the device “loses contact with the currently[-]connected wireless network or leaves the available service area, the wireless communication technology transceiver is programmed to become deactivated.” *Id.* A set of rules, called “a wireless network connection profile,” controls “activation and deactivation” “of wireless communication technologies” (“e.g., when and where”). *Id.* ¶35.

The device may “lose connectivity with the currently[-]connected wireless network due to a persistent nature of the...transceiver,” for example, if the user moves to a new location. *Id.* ¶¶28, 30. In response to such a loss of connection, Rippon’s location-based service may be “re-activated automatically,” e.g., its GPS-based transceiver “is activated to detect the new location” of the device. *Id.* This new location is “provided to the location database to find out a newly[-]available wireless communication technology at the new location.” *Id.* ¶30.

Moreover, Rippon discloses a “wireless network connection profile[.]” for “a home WiFi network” that “records a location of WiFi network at home” and another for “an office WiFi network” that records an office Wi-Fi location. *Id.* ¶33. The device’s Wi-Fi transceiver, for example, is only activated when it “comes in range...of a location of the home WiFi network or a location of the office WiFi network.” *Id.* When the device “leaves in range of the location” (whether the home or office network), “the WiFi transceiver is deactivated.” *Id.*

B. Arumi (Ex-1011)

Arumi is §102(b) prior art as of its U.S. publication date, December 11, 2008.

Arumi discloses “managing Wi-Fi capability for a mobile station” via “turning off a Wi-Fi communications portion” “when...Wi-Fi communications” “is not being used” in order to conserve the device’s battery life. Ex-1011 ¶¶7, 18, 20, Figure 1. Moreover, Arumi discloses controlling the activation of Wi-Fi capability in response “to at least one of a plurality of...triggering events.” *Id.* ¶15. These “triggering events...instigate a Wi-Fi probing mode used for determining whether the Wi-Fi capability should remain active.” *Id.*

Arumi’s “mobile station” comprises “Wi-Fi communication capability” (e.g., “a Wi-Fi network card”) and “communication capability such as cellular phone communications over a wireless network (e.g., UMTS, GSM or CDMA communications).” *Id.* ¶¶17, 19. Indeed, the mobile station is capable “of operating in more than one mode for communicating” (i.e., both “Wi-Fi communications” and “another type of communications”) and is thus “considered a dual mode service (DMS) mobile station.” *Id.*

Figure 2A/2B depicts the exemplary process, starting at 32 in Figure 2A. “Whenever the Wi-Fi capabilities are turned off, they remain off until [a] triggering event[] occurs.” *Id.* ¶21, Figures 2A-2B.

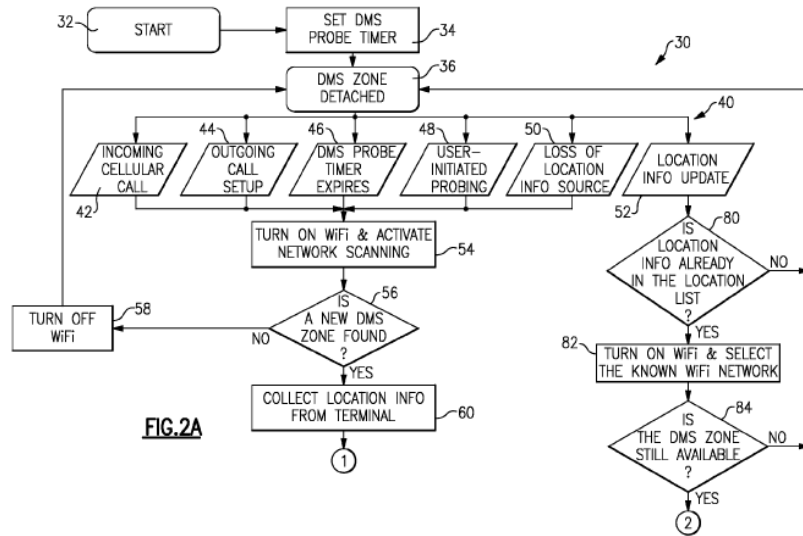


FIG. 2A

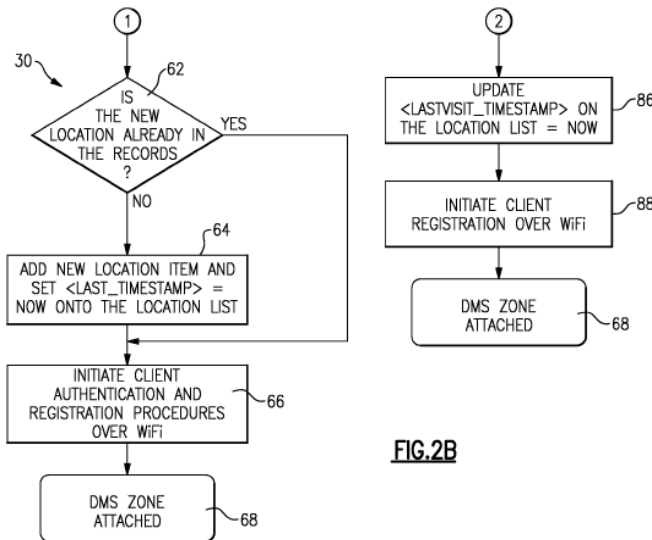
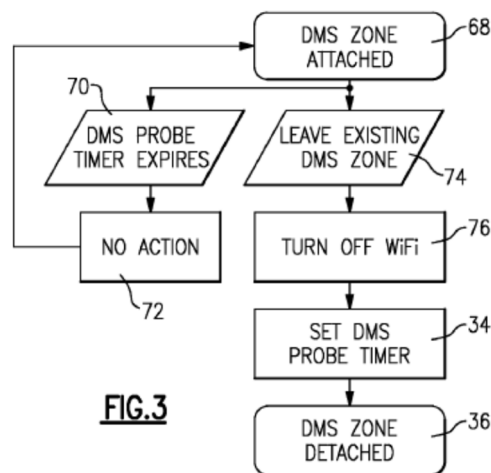


FIG. 2B

Triggering events may include, for example, “the loss of a location information source at 50,” which “addresses a situation where the mobile station may control Wi-Fi capability based on known location information.” *Id.* ¶¶21, 25. Thus, triggering event 50 “recognizes that if a mobile station loses contact” with a location information source, for example, if it “loses sight of GPS satellites[], it may be beneficial to probe for Wi-Fi access at that time.” *Id.* Triggering events may also

include “a location information update at 52,” which may, for example, “be the result of user movement between different locations.” *Id.* ¶¶21, 30. When any triggering event occurs, the device’s Wi-Fi capability turns on and “a Wi-Fi probing mode begins at 54” (i.e., a triggering event “allows for selectively turning on the Wi-Fi communication capability only when it is potentially useful or needed”). *Id.* ¶26. Thus, loss of location information source triggering event “allows for potentially establishing a Wi-Fi connection, which can be used to obtain location information.” *Id.* ¶25.

For all triggering events, “once the Wi-Fi capabilities are active,” they remain active “until [the] user disconnects from the Wi-Fi access point manually or leaves the area of coverage of that DMS zone.” *Id.* ¶29, Figure 3. Thus, if the device “leaves the existing DMS zone” (at 74), its Wi-Fi capabilities “are automatically turned off” at 76. *Id.*



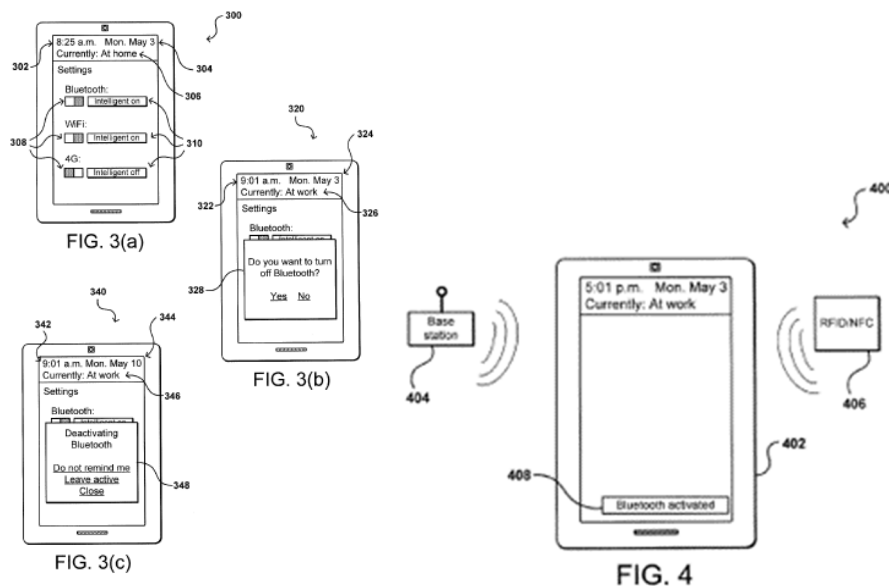
C. Moy (Ex-1009)

Moy is §102(e) prior art as of its U.S. filing date, June 27, 2011.

Moy discloses a device that “can monitor when a user activates or deactivates certain functionality,” such as, for example, “activating Bluetooth functionality to synchronize with an automobile communication system while driving to work” or activating “WiFi functionality to access Web-based content while at home.” Ex-1009, 2:25-29. The user may also “deactivate this functionality when leaving the respective environment.” *Id.* For example, a user may “want to turn off a 4G cellular connection when the user is in a meeting,” “on a plane,” or “in a movie theater,” and instead “only utilize WiFi when at home or at a particular coffee shop.” *Id.*, 5:17-20. In this example, the user may “turn on Bluetooth when the user leaves for work in the morning on a weekday” and, in response to the switched setting, the device may attempt to ascertain “any relevant contextual or environmental data, such as...a geographic location 306 where the device was when the setting was changed.” *Id.*, 5:23-30.

Moy further discloses “various other environmental information” that can be used by the system to determine whether to activate or deactivate functionality. For example, a user may occasionally sit in the car before entering the workplace to finish making personal calls and therefore “not want the device to turn off Bluetooth simply when the user pulls into the parking lot at work at the normal time.” *Id.*, 6:29-

35. Accordingly, Moy discloses that “the device can look for additional information” indicating “more accurately when the user would like to perform the action” such as, in this example, when “the user has gotten out of [his] car and entered a building at work.” *Id.*, 6:35-39, Figures 3-4. In this example, “[u]pon entering the building, passing through security, or at another appropriate location,” “device 402” may “come within range of a certain device, such as a WiFi base station 404 or location tag 406, such as an RFID or NFC tag.” *Id.*, 6:40-44, 6:63-65 (“As another example, a computing device might be able to determine from calendar, GPS, or other such data that a user is at an airport.”).



D. Olson (Ex-1010)

Olson is §102(b) prior art as of its U.S. publication date, July 2, 2009.

Olson discloses a system that is “programmed to control activation of” the “WiFi interface” “in response to stimulus” indicating that “the mobile unit is within

a proximity range of one or more trusted or preferred wireless networks.” Ex-1010

¶33. This proximity range does not need “to enable communication” between them but can instead “be a looser proximity range, such that there is an increased likelihood that communication...may be enabled.” *Id.* Indeed, the criteria that is used “to trigger activation of the WiFi interface” may be tailored “to a desired level geographic or regional specificity.” *Id.* ¶40.

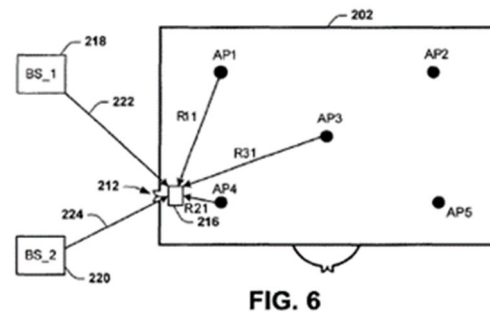
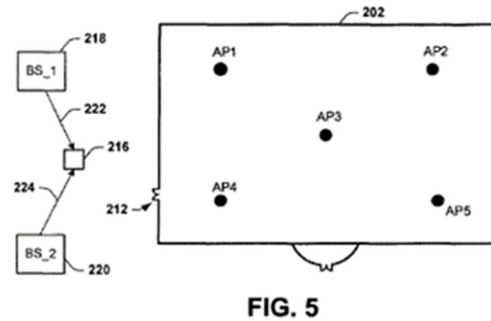
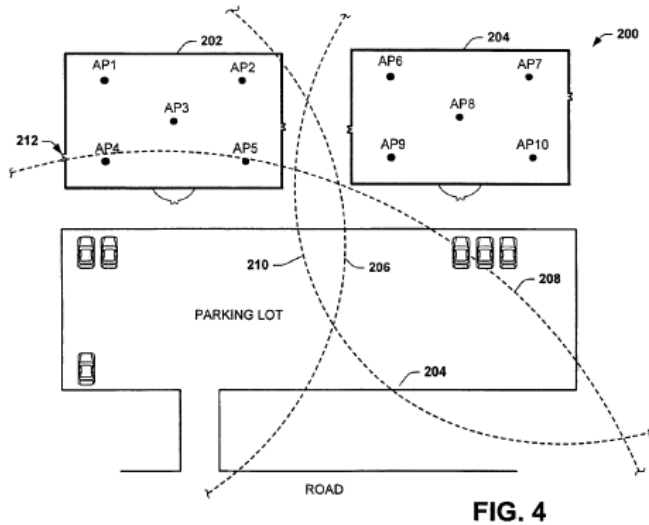
Olson further discloses “network location data” that may “include predefined location criteria that is associated with a geographical region or zone that includes one or more preferred wireless network” and/or may be “programmed based on a known set of such data” that has been supplied by the carrier(s) providing services for a particular zone or region, for example, “from a comparison of a cellular coverage maps with the location of the access points in the wireless enterprise network.” *Id.* ¶¶34-35. A “compare function” can determine “whether the location determined by the location calculator...substantially matches at least one of the pre-programmed location-indicating data in the network location data” and/or ascertain “a match based on a comparison of the extracted parameter(s) relative to the pre-programmed data in the network location data.” *Id.* ¶38. A “match...occurs when the mobile unit resides within a predetermined region, such as may be defined to contain one or more known wireless networks.” *Id.*

Table 1 shows a potential “set of location identifying data” that may “be stored in the network location data.” *Id.* ¶39. Specifically, Table 1 depicts “cellular location information for a given building” that comprises “access points AP1, AP2, AP3, AP4 and AP5 in a multi-building enterprise.” *Id.*

TABLE 1			
ACCESS POINT	CELL ID	LAC	SECTOR ID
AP1	CID_2, CID_4	LL5	SS2
AP2	CID_2, CID_4, CID_5	LL5	SS3
AP3	CID_2, CID_4	LL5	SS2
AP4	CID_2, CID_3, CID_5	LL5	SS3
AP5	CID_2, CID_4,	LL5	SS1

However, “network location data...can be extended to accommodate different sizes and configurations of wireless networks and enterprises, which may include any number of wireless networks.” *Id.*

For example, as shown in Figures 4-6, when “mobile unit 216” “has entered the building 202 through the entry 212,” the mobile unit may still “receive cellular network parameters in signals 222 and 224 from the base stations 218 and 220” and, further, the wireless network “can handoff the mobile unit 216 to connection to any of the access points AP1, AP2, AP3, AP4 and AP5 as the mobile unit moves within the building 202.” *Id.* ¶48, Figures 4-6.



XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS

The '840 Patent contains three independent claims—Claims 1, 6, and 11—that are substantially similar in scope but directed to different classes. *See* Ex-1020. Substantially similar claim elements are discussed together in the below element-by-element analysis. *Id.* Any meaningful differences between the elements are individually identified and discussed.

A. Ground 1: Claims 1-2, 4-7, 9-12, 14-15 are obvious over Rippon.

1. Independent Claims 1, 6, and 11

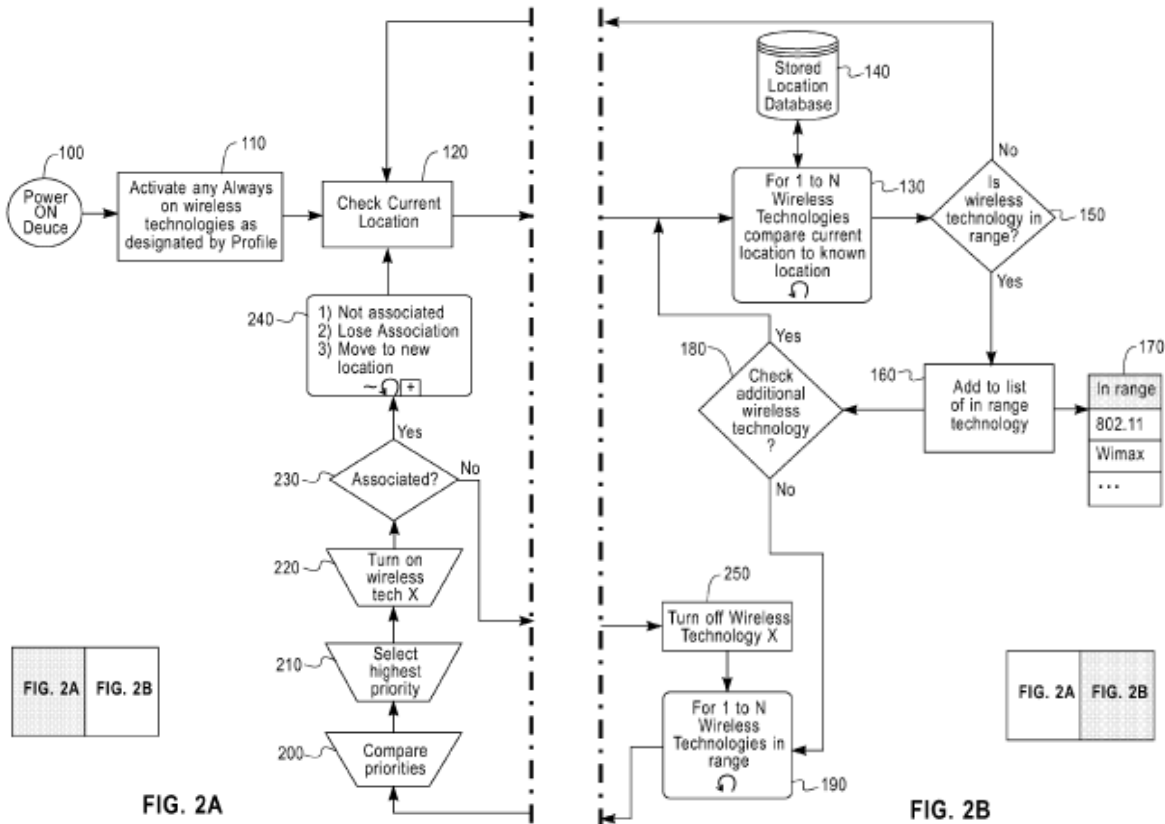
a. 1[a]/6[pre]/11[a][i]: ...a mobile platform
[comprising:]

11[pre]: An apparatus comprising:

Rippon discloses “a multi-mode wireless communication device” and thus discloses a mobile platform apparatus. Ex-1008, Abstract, ¶2; Ex-1002 ¶¶75-79.

b. 1[a]/6[a]/11[a][i]: ...a plurality of radios[; and]

Rippon discloses a multi-mode wireless communication device that includes “one or more wireless communication technology transceivers for one or more wireless communication technologies,” along with “a location-based service system” that is capable of ascertaining the device’s “current location.” Ex-1008 ¶¶8-9, 24; *see also id.*, Abstract, Claim 1 (“the multi-mode wireless communication device having one or more wireless communication technology transceivers”). Specifically, Rippon discloses that its device, may be “a wireless phone supporting one or more wireless communication technologies and having at least one location-based service system.” *Id.* ¶24, Figures 2A-2B. These wireless communication technologies may include “one or more of: CDMA..., GSM..., Wi-Fi..., Bluetooth, EDGE..., and LTE.” *Id.* The “location-based service system” may be “a GPS or GPS-based transceiver located on or embedded within the multi-mode wireless communication device.” *Id.* Accordingly, Rippon discloses a plurality of radios. Ex-1002 ¶¶80-86.



- c. **1[a]/6[b][i]/11[a][i]:** logic to, detect a change in location for [the/a] mobile platform [having a plurality of radios], wherein each of the plurality of radios supports a different wireless technology, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss, and

1[pre]: A non-transitory computer readable storage medium comprising a set of instructions which, when executed by one or more processors, cause a system to:

Rippon discloses wherein each of the plurality of radios supports a different wireless technology. Rippon discloses a multi-mode wireless communication device that includes “one or more wireless communication technology transceivers for one

or more wireless communication technologies,” along with “a location-based service system” that is capable of ascertaining the device’s “current location.” Ex-1008 ¶¶8-9, 24; *see also id.*, Abstract, Claim 1 (“the multi-mode wireless communication device having one or more wireless communication technology transceivers”). Specifically, Rippon discloses that its device, may be “a wireless phone supporting one or more wireless communication technologies and having at least one location-based service system.” *Id.* ¶24, Figures 2A-2B. These wireless communication technologies may include “one or more of: CDMA..., GSM..., Wi-Fi..., Bluetooth, EDGE..., and LTE.” *Id.* The “location-based service system” may be “a GPS or GPS-based transceiver located on or embedded within the multi-mode wireless communication device.” *Id.*; Ex-1002 ¶¶87-103.

Further, Rippon discloses logic to detect a change in location for the mobile platform, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss.

Rippon’s device includes “a location-based service system” that is capable of ascertaining the device’s “current location.” Ex-1008 ¶¶8-9, 24-25, Figures 2A-2B; *see also id.*, Abstract. Moreover, Rippon’s location-based service system can “mark a location where the wireless network of the particular wireless communication technology is available” (i.e., “the particular wireless communication technology”

for “an available service area” is constructed “[b]ased on physical range characteristics of the particular wireless network” (e.g., “Wi-Fi wireless network has a range of...120...to...300 ft” and “IEEE 802.11 wireless network has a range of 300...to 600 ft”)). *Id.* ¶33. Thus, Rippon’s device may recognize when it “enters the available service areas.” *Id.* Indeed, Rippon discloses that it “checks its current location based on information from a location-based service system such as GPS.” *Id.* ¶35. Accordingly, Rippon discloses detecting a change in location based on information received from one or more active radios. Ex-1002 ¶¶87-103.

Moreover, Rippon discloses that its device may recognize when it “loses contact with the currently connected wireless network or leaves the available service area.” Ex-1008 ¶33. Indeed, Rippon explains that its device may “lose connectivity with the currently[-]connected wireless network due to a persistent nature of the...transceiver,” for example, if the user moves to a new location. *Id.* ¶¶28, 30. Accordingly, Rippon discloses detecting a change in location based on information received from one or more active radios, including a connection loss. Ex-1002 ¶¶87-103.

Furthermore, Rippon discloses that, in response to such a loss of connection, Rippon’s location-based service may be “re-activated automatically,” for example, its GPS-based transceiver “is activated to detect the new location” of the device. Ex-1008 ¶¶28-30. Accordingly, Rippon provides further disclosure regarding detecting

a change in location based on information received from one or more active radios.

Ex-1002 ¶¶87-103.

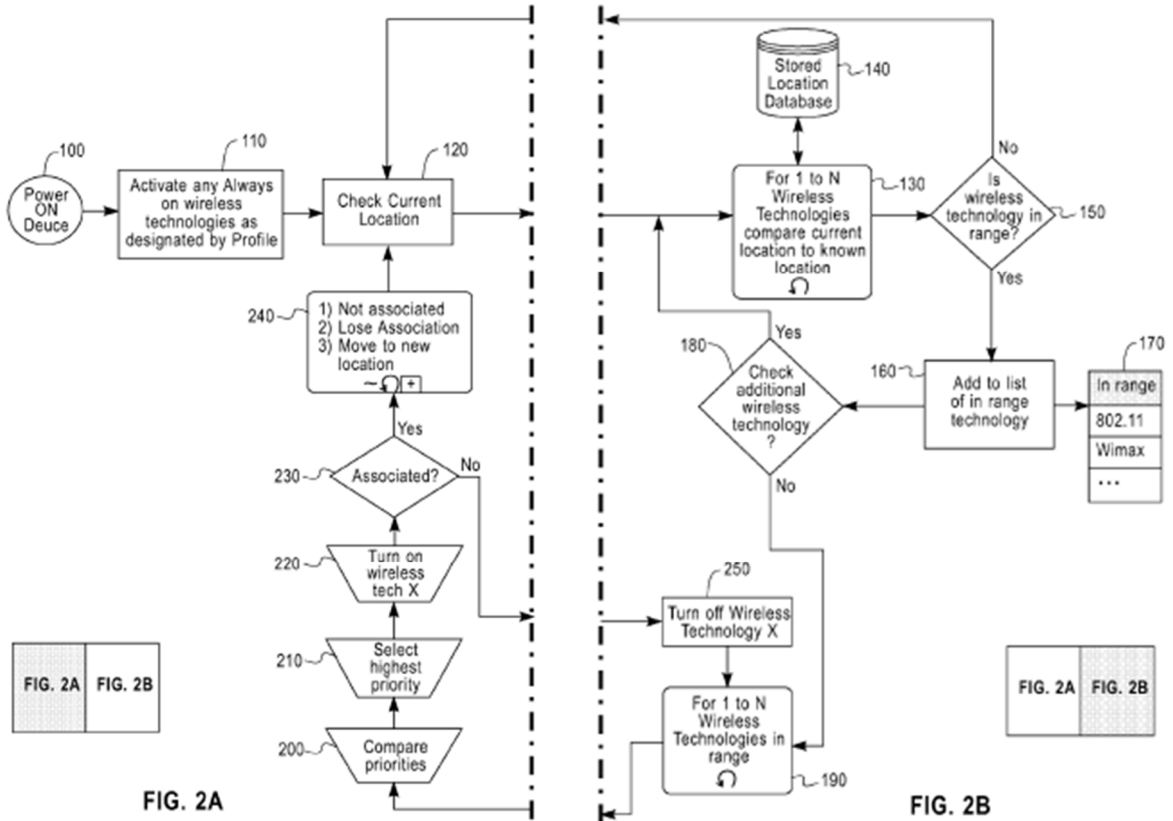
d. 1[b]/6[b][ii]/11[a][ii]: activate a Wi-Fi radio in response to the change in location,

Rippon's location-based service system can "mark a location where the wireless network of the particular wireless communication technology is available." Ex-1008 ¶¶8-9, 24-25, 33, 35, Abstract, Figures 2A-2B. Specifically, "the particular wireless communication technology" for "an available service area" is constructed "[b]ased on physical range characteristics of the particular wireless network" (e.g., "Wi-Fi wireless network has a range of...120...to...300 ft" and "IEEE 802.11 wireless network has a range of 300...to 600 ft"). *Id.* ¶33. Accordingly, when Rippon's device "enters the available service areas" (i.e., upon the claimed "change in location"), "a wireless communication technology transceiver of the particular wireless communication technology is activated in order to connect to the wireless network" (i.e., the claimed "activate a Wi-Fi radio"). *Id.*; Ex-1002 ¶¶104-111. Thus, for instance, the device's Wi-Fi transceiver is activated when it "comes in range (Wi-Fi wireless network has a range of...120...to...300 ft...) of a location of the home WiFi network or a location of the office WiFi network" (i.e., upon the claimed "change in location"). Ex-1008 ¶33; *see also id.*, ¶35 ("The wireless network connection profiles have a set of predefined selection criteria (e.g., priority or preference information), which the...device uses to manage

activation[/]deactivation of wireless communication technologies.”). Accordingly, Rippon discloses activating a Wi-Fi radio in response to the change in location. Ex-1002 ¶¶104-111.

- e. **1[c]/6[c]/11[b]: wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios.**

Rippon discloses with Figure 2A/2B, Step 130, that “for 1 to N wireless communication technologies,” the device’s “current location...is compared to known locations,” which are “locations where one or more wireless communication technologies” in the device “are available to provide a wireless network connection for the user.” Ex-1008 ¶25. These “known locations” are stored in the location database at storage device 140. *Id.* Accordingly, Rippon discloses creating a “profile” “for each location where the...device can be connected to a wireless network.” *Id.* ¶34. Therefore, Rippon discloses wherein a first profile is associated with a first location and a second profile is associated with a second location. Ex-1002 ¶¶112-125.



More specifically, Rippon's location-based service system can “mark a location where the wireless network of the particular wireless communication technology is available.” Ex-1008 ¶33. Specifically, “the particular wireless communication technology” for “an available service area” is constructed “[b]ased on physical range characteristics of the particular wireless network” (e.g., “Wi-Fi wireless network has a range of...120...to...300 ft)” and “IEEE 802.11 wireless network has a range of 300...to 600 ft”). *Id.* Accordingly, Rippon discloses wherein the profiles each include location entry criteria and location exit criteria. Ex-1002 ¶¶112-125.

Further, Rippon discloses creating a “profile” “for each location where the...device can be connected to a wireless network.” Ex-1008 ¶34. In other words, Rippon discloses that its system “associates a location with a wireless network connection profile of the...device,” where “a new wireless network connection profile is created for [each] new location.” *Id.* ¶¶38-41. The “***profile of a certain location stores*** available wireless communication technologies at the location, available service providers at the location,” and “***a set of rules for controlling activation and deactivation of wireless communication technologies*** (e.g., when and where a wireless communication technology is activated or deactivated).” *Id.* ¶¶34-35 (emphasis added); *see also, e.g., id.* ¶35 (“The...profiles [are] use[d] to manage activation or deactivation of wireless communication technologies” (i.e., “transceivers associated with the one or more wireless communication technologies”) “based on what is currently available from one or more wireless communication technologies, provided by one or more service providers”), ¶35 (“For example, [the] profiles associated with the one or more wireless communication technologies may indicate that for this particular location, 2 or more wireless communication technologies should be activated.”). Accordingly, Rippon discloses wherein the first profile and the second profile each include radio settings including activation and deactivation information for the plurality of radios. Ex-1002 ¶¶112-125.

More specifically, Rippon discloses that its device “iteratively checks its current location based on information from a location-based service system.” Ex-1008 ¶35. “Upon providing a current location of the multi-mode wireless communication device, a wireless network connection profile associated with the current location is retrieved.” *Id.* ¶34. It is then “determined what wireless communication technologies are affected or enabled by a current location of the multi-mode wireless communication device” such that “transceivers that...are no longer valid at the current location...are turned off” while transceivers associated with “available...technologies” are “activated.” *Id.* ¶35; *see also id.* ¶35 (“The...profiles have a set of predefined selection criteria (e.g., priority or preference information), which the...device uses to manage activation or deactivation of wireless communication technologies based on what is currently available from one or more wireless communication technologies.”). Thus, for example, when the device enters a location associated with an “available service area[,]” a “transceiver of the particular wireless communication technology is activated in order to connect to the wireless network” and when the device “leaves the [location,] the...transceiver is programmed to become deactivated.” *Id.* ¶33.

As an example, Rippon discloses that “a cellular phone that includes GPS and WiFi connectivity” may create “two wireless network connection profiles” which “record locations...that are provided by the GPS within the cellular phone”: one

profile for “a home WiFi network” that “records a location of WiFi network at home” and another profile for “an office WiFi network” that records an office Wi-Fi location. *Id.* The device’s Wi-Fi transceiver, for example, is only activated when it “comes in range...of a location of the home WiFi network or a location of the office WiFi network.” *Id.* When the device “leaves in range of the location” (whether the home or office network), “the WiFi transceiver is deactivated.” *Id.*

2. Claims 2, 7, 12: ...the change in location is a change in relative location with respect to an access point

Rippon discloses that its location-based service system can “mark a location where the wireless network of the particular wireless communication technology is available.” Ex-1008 ¶¶33-35. Specifically, “the particular wireless communication technology” for “an available service area” is constructed “[b]ased on physical range characteristics of the particular wireless network” (e.g., “Wi-Fi wireless network has a range of...120...to...300 ft” and “IEEE 802.11 wireless network has a range of 300...to 600 ft”). *Id.* Thus, for example, the device’s Wi-Fi transceiver “is only activated when the cell phone comes in range (Wi-Fi wireless network has a range of...120...to...300 ft...) of a location of the home WiFi network or a location of the office WiFi network.” *Id.* Accordingly, Rippon discloses the change in location is a change in relative location with respect to an access point. Ex-1002 ¶¶126-137.

Indeed, Rippon discloses that its transceiver activation settings may also account for “signal strength.” Ex-1008 ¶30. Accordingly, “a signal strength detector

within the...device...senses signal strength between the...device and a...wireless network,” “and if the signal strength...becomes lower than a pre-determined threshold,” the “location-based service system” is “activate[d]” to “detect[] a current location of the...device,” “it is checked whether there are [any] available wireless communication technologies at the...location through communicating with the location database,” “each...transceiver of each...technology is temporarily activated to measure signal strength,” and a “transceiver associated with...the strongest signal strength is...selected to be activated.” *Id.* ¶¶31-32.

Furthermore, Rippon discloses that “while the multi-mode wireless communication device is connected with an IEEE 802.11 wireless network,” the device “calculates a period or frequency that the location-based service system can be turned off based on a moving speed of” the device “and a physical range characteristic (e.g., IEEE 802.11 wireless network range is 600 ft) of the IEEE 802.11.” *Id.* ¶28. The location-based service system is then “turned off during that period or based the frequency, by assuming” that the device “is within the physical range (e.g., 600 ft) of the connected wireless network (e.g., IEEE 802.11) during the period.” *Id.*

3. Claims 4, 9, 14: ...the access point is a Wi-Fi access point

Rippon discloses that “while the multi-mode wireless communication device is connected with an IEEE 802.11 wireless network,” the device “calculates a period

or frequency that the location-based service system can be turned off based on a moving speed of” the device “and a physical range characteristic (e.g., IEEE 802.11 wireless network range is 600 ft) of the IEEE 802.11.” Ex-1008 ¶28. The location-based service system is then “turned off during that period or based the frequency, by assuming” that the device “is within the physical range (e.g., 600 ft) of the connected wireless network (e.g., IEEE 802.11) during the period.” *Id.* Moreover, the device’s Wi-Fi transceiver “is only activated when the cell phone comes in range (Wi-Fi wireless network has a range of...120...to...300 ft...) of a location of the home WiFi network or a location of the office WiFi network.” *Id.* ¶33; *see also id.* ¶33 (disclosing constructing “an available service area” for a “Wi-Fi wireless network” “[b]ased on [its] physical range characteristics” (i.e., “Wi-Fi wireless network has a range of...120...to...300 ft”)). Accordingly, Rippon discloses the access point is a Wi-Fi access point. Ex-1002 ¶¶138-144.

4. Claims 5, 10, 15: ...the change in relative location is based on a proximity to the access point

Rippon discloses that its location-based service system can “mark a location where the wireless network of the particular wireless communication technology is available.” Ex-1008 ¶¶33-35. Specifically, “the particular wireless communication technology” for “an available service area” is constructed “[b]ased on physical range characteristics of the particular wireless network” (e.g., “Wi-Fi wireless network has a range of...120...to...300 ft” and “IEEE 802.11 wireless network has a range of

300...to 600 ft”). *Id.* Thus, for example, the device’s Wi-Fi transceiver “is only activated when the cell phone comes in range (Wi-Fi wireless network has a range of...120...to...300 ft...) of a location of the home WiFi network or a location of the office WiFi network.” *Id.* Accordingly, Rippon discloses the change in relative location is based on a proximity to the access point. Ex-1002 ¶¶145-156.

Indeed, Rippon discloses that its transceiver activation settings may also account for “signal strength.” Ex-1008 ¶30. Accordingly, “a signal strength detector within the...device...senses signal strength between the...device and a...wireless network,” “and if the signal strength...becomes lower than a pre-determined threshold,” the “location-based service system” is “activate[d]” to “detect[] a current location of the...device,” “it is checked whether there are [any] available wireless communication technologies at the...location through communicating with the location database,” “each...transceiver of each...technology is temporarily activated to measure signal strength,” and a “transceiver associated with...the strongest signal strength is...selected to be activated.” *Id.* ¶¶31-32.

Furthermore, Rippon discloses that “while the multi-mode wireless communication device is connected with an IEEE 802.11 wireless network,” the device “calculates a period or frequency that the location-based service system can be turned off based on a moving speed of” the device “and a physical range characteristic (e.g., IEEE 802.11 wireless network range is 600 ft) of the IEEE

802.11.” *Id.* ¶28. The location-based service system is then “turned off during that period or based the frequency, by assuming” that the device “is within the physical range (e.g., 600 ft) of the connected wireless network (e.g., IEEE 802.11) during the period.” *Id.*

B. Ground 2: Claims 1-2, 4-7, 9-12, 14-15 are obvious over Rippon in view of Moy.

1. A POSITA would have been motivated to combine Rippon with Moy’s teachings and would have had a reasonable expectation of success in doing so.

A POSITA would have been motivated to combine the teachings of Moy with Rippon and would have had a reasonable expectation of success in doing so, especially as each relates to the same technologies. Ex-1002 ¶157. In fact, both relate to location-based methods for reducing power consumption in wireless communication devices. Ex-1008, Abstract; Ex-1009, Abstract. And both describe activating and deactivating network radio functionality based on known, stored locations and profiles. Ex-1008 ¶¶25, 33; Ex-1009, 2:25-31, 5:16-20, 6:35-44. Although Rippon discloses using known locations and profiles to activate/deactivate network radio functionality in order to reduce power consumption, Moy provides further details describing a first profile associated with a first location and a second profile associated with a second location, each including location entry and exit criteria and radio settings including activation and deactivation information for the plurality of radios. Ex-1009, 2:25-31, 5:16-20, 6:35-44.

A POSITA would have been motivated to apply Moy's additional teachings regarding location profiles to Rippon to enhance the power-conserving capabilities of the device. Ex-1002 ¶158. Indeed, Rippon's stated goal is to "provide power conservation" (Ex-1008 ¶6), and Rippon recognized the power-conserving benefits of creating "profiles" using "known locations" and deactivating radios not in use (*id.* ¶¶34-35, 38-41). Moy discloses a similar goal and method, describing "turn[ing] functionality off when it is not needed" in order to "conserve power on the device" (Ex-1009, 1:19-29), and Moy discloses using profiles, each including location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios, to further that goal (*id.*, 2:10-13, 2:25-31, 5:16-20, 6:35-44). Based on the teachings of Moy, a POSITA would have recognized that including profiles with explicit location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios in Rippon's disclosed system would have enhanced Rippon's power-conserving benefits. Ex-1002 ¶158. In particular, a POSITA would have recognized that applying Moy's teaching of profiles with explicit location entry/exit criteria and radio activation/deactivation information to Rippon's system would provide further opportunities for the deactivation of radios when not in use and further opportunities to limit the activation of radios to only when appropriate for the user, both furthering Rippon's power-conservation goals. *Id.* For example, a POSITA would have

recognized that applying Moy's teachings regarding profiles with explicit location entry/exit criteria and activation/deactivation settings to Rippon's system would allow Rippon's device to immediately recognize appropriate radio settings upon arrival to and departure from a location, and thus maximize the amount of time that unnecessary radios are deactivated (and, as a result, the power-conserving capabilities of the device). *Id.*

Moreover, implementing Moy's power-conserving mechanisms into Rippon's device would have been a straightforward engineering task for a POSITA as both Moy and Rippon disclose standard mobile computing devices. *Id.* ¶159. Indeed, both Rippon and Moy disclose general purpose computing devices that work in the same general way and that a POSITA would have understood were capable of using the same and/or similar programming languages and/or operating systems. *Id.* Accordingly, a POSITA would have had a reasonable expectation of success in implementing the approaches described in Moy into Rippon's system as the implementation would have been a matter of straightforward engineering and thus would have yielded predictable results. *Id.* For example, both Rippon and Moy disclose the use of standard radio systems; controlling such radio systems via software in order to conserve power, as described in Moy, on a general purpose computing device (as described in both Rippon and Moy) was well within the skills of a POSITA. *Id.*

2. Independent Claims 1, 6, and 11

- a. 1[a]/6[pre]/11[a][i]: ...a mobile platform
[comprising:]**

11[pre]: An apparatus comprising:

See Section XII.A.1.a.

- b. 1[a]/6[a]/11[a][i]: ...a plurality of radios[; and]**

See Section XII.A.1.b.

- c. 1[a]/6[b][i]/11[a][i]: logic to, detect a change in location for [the/a] mobile platform [having a plurality of radios], wherein each of the plurality of radios supports a different wireless technology, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss, and**

1[pre]: A non-transitory computer readable storage medium comprising a set of instructions which, when executed by one or more processors, cause a system to:

See Section XII.A.1.c.

- d. 6[b][ii]/1[b]/11[a][ii]: activate a Wi-Fi radio in response to the change in location,**

See Section XII.A.1.d.

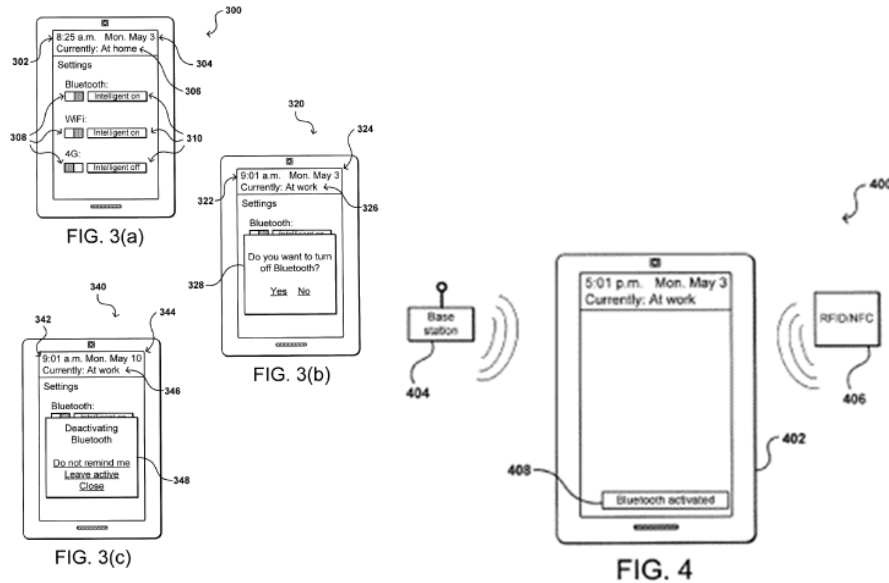
- e. **1[c]/6[c]/11[b]: wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios.**

Moy discloses wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios. A POSITA would have been motivated to apply Moy's teachings regarding profiles with location entry/exit criteria and radio activation/deactivation information to Rippon's disclosed system, and would have had a reasonable expectation of success in doing so, for the reasons discussed in Section XII.B.1. Ex-1002 ¶166.

Moy discloses that its device may store "settings" comprising "functional state[s] of one or more components of the device" such that the device can automatically "activate, deactivate, or change an operational mode of a function or element" (e.g., "Bluetooth connectivity, WiFi connectivity, and 4G wireless connectivity") in response to learned user behavior, such as a change in location. Ex-1009, 2:25-29, 5:3-13, 5:17-20, 6:9-13, 7:21-26. Accordingly, Moy discloses profiles including radio settings including activation and deactivation information for the plurality of radios. Ex-1002 ¶¶164-176.

Moy further discloses that its device that “can monitor when a user activates or deactivates certain functionality,” such as, for example, “activating Bluetooth functionality to synchronize with an automobile communication system while driving to work” or activating “WiFi functionality to access Web-based content while at home.” Ex-1009, 2:25-31. The user may also “deactivate this functionality when leaving the respective environment.” *Id.* For example, a user may “want to turn off a 4G cellular connection when the user is in a meeting,” “on a plane,” or “in a movie theater” and instead “only utilize WiFi when at home or at a particular coffee shop.” *Id.*, 5:17-20. In this example, the user may “turn on Bluetooth when the user leaves for work in the morning on a weekday” and, in response to the switched setting, the device may attempt to ascertain “any relevant contextual or environmental data, such as...a geographic location...where the device was when the setting was changed.” *Id.*, 5:23-30. Thus, as a result of these disclosed settings, “the user will no longer have to manually activate and deactivate Bluetooth or other such functionality each weekday, but can obtain the power savings of having the functionality deactivated when not needed.” *Id.*, 6:54-57. Accordingly, Moy discloses wherein a first profile is associated with a first location and a second profile is associated with a second location, as well as the profiles each including radio settings including activation and deactivation information for the plurality of radios. Ex-1002 ¶¶164-176.

Moy further discloses “various other environmental information” that can be used by the system to determine whether to activate or deactivate functionality. For example, a user may occasionally sit in the car before entering the workplace to finish making personal calls and therefore “not want the device to turn off Bluetooth simply when the user pulls into the parking lot at work at the normal time.” Ex-1009, 6:29-35. Accordingly, Moy discloses that “the device can look for additional information” indicating “more accurately when the user would like to perform the action” such as, in this example, when “the user has gotten out of [his] car and entered a building at work.” *Id.*, 6:35-39, Figures 3-4. In this example, “[u]pon entering the building, passing through security, or at another appropriate location,” “device 402” may “come within range of a certain device, such as a WiFi base station 404 or location tag 406, such as an RFID or NFC tag.” *Id.*, 6:40-44; *see also id.*, 6:63-65 (“As another example, a computing device might be able to determine from calendar, GPS, or other such data that a user is at an airport.”). Accordingly, Moy discloses the profiles each including location entry criteria and location exit criteria, as well as a first profile associated with a first location and a second profile associated with a second location. Ex-1002 ¶¶164-176.



3. **Claims 2, 7, 12: ...the change in location is a change in relative location with respect to an access point**

See Section XII.A.2.

4. **Claims 4, 9, 14: ...the access point is a Wi-Fi access point**

See Section XII.A.3.

5. **Claims 5, 10, 15: ...the change in relative location is based on a proximity to the access point**

See Section XII.A.4.

C. Ground 3: Claims 1-2, 4-7, 9-12, 14-15 are obvious over Rippon in view of Olson.

1. **A POSITA would have been motivated to combine Rippon with Olson's teachings and would have had a reasonable expectation of success in doing so.**

A POSITA would have been motivated to combine the teachings of Olson with Rippon and would have had a reasonable expectation of success in doing so, especially as each relates to the same technologies. Ex-1002 ¶180. In fact, both relate

to location-based methods for reducing power consumption in wireless communication devices. Ex-1008, Abstract; Ex-1010 ¶7. And both describe activating and deactivating network radio functionality based on known, stored locations and profiles. Ex-1008 ¶¶25, 33; Ex-1010 ¶7. Although Rippon discloses using known locations and profiles to activate/deactivate network radio functionality in order to reduce power consumption, Olson provides further details describing a first profile associated with a first location and a second profile associated with a second location, each including location entry and exit criteria and radio settings including activation and deactivation information for the plurality of radios. Ex-1010 ¶¶34, 48.

A POSITA would have been motivated to apply Olson’s additional teachings regarding location profiles to Rippon to enhance the power-conserving capabilities of the device. Ex-1002 ¶181. Indeed, Rippon’s stated goal is to “provide power conservation” (Ex-1008 ¶6), and Rippon recognized the power-conserving benefits of creating “profiles” using “known locations” and deactivating radios not in use (*id.* ¶¶34-35, 38-41). Olson discloses a similar goal and method, describing the invention as generally “aimed to reducing power consumption in a mobile unit” (Ex-1010 ¶4), and Olson discloses using profiles, each including location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios, to further that goal (*id.* ¶¶21-23, 29, 33-35, 38-40, 48). Based on the teachings

of Olson, a POSITA would have recognized that including profiles with explicit location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios in Rippon's disclosed system would have enhanced Rippon's power-conserving benefits. Ex-1002 ¶181. In particular, a POSITA would have recognized that applying Olson's teaching of profiles with explicit location entry/exit criteria and radio activation/deactivation information to Rippon's system would provide further opportunities for the deactivation of radios when not in use and further opportunities to limit the activation of radios to only when appropriate for the user, both furthering Rippon's power-conservation goals. *Id.* For example, a POSITA would have recognized that applying Olson's teachings regarding profiles with explicit location entry/exit criteria and activation/deactivation settings to Rippon's system would allow Rippon's device to immediately recognize appropriate radio settings upon arrival to and departure from a location, and thus maximize the amount of time that unnecessary radios are deactivated (and, as a result, the power-conserving capabilities of the device). *Id.*

Moreover, implementing Olson's power-conserving mechanisms into Rippon's device would have been a straightforward engineering task for a POSITA as both Olson and Rippon disclose standard mobile computing devices. *Id.* ¶182. Indeed, both Rippon and Olson disclose general purpose computing devices that work in the same general way and that a POSITA would have understood were

capable of using the same and/or similar programming languages and/or operating systems. *Id.* Accordingly, a POSITA would have had a reasonable expectation of success in implementing the approaches described in Olson into Rippon's system as the implementation would have been a matter of straightforward engineering and thus would have yielded predictable results. *Id.* For example, both Rippon and Olson disclose the use of standard radio systems; controlling such radio systems via software in order to conserve power, as described in Olson, on a general purpose computing device (as described in both Rippon and Olson) was well within the skills of a POSITA. *Id.*

2. Independent Claims 1, 6, and 11

**a. 1[a]/6[pre]/11[a][i]: ...a mobile platform
[comprising:]**

11[pre]: An apparatus comprising:

See Section XII.A.1.a.

b. 1[a]/6[a]/11[a][i]: ...a plurality of radios[; and]

See Section XII.A.1.b.

- c. **1[a]/6[b][i]/11[a][i]: logic to, detect a change in location for [the/a] mobile platform [having a plurality of radios], wherein each of the plurality of radios supports a different wireless technology, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss, and**

1[pre]: A non-transitory computer readable storage medium comprising a set of instructions which, when executed by one or more processors, cause a system to:

See Section XII.A.1.c.

- d. **6[b][ii]/1[b]/11[a][ii]: activate a Wi-Fi radio in response to the change in location,**

See Section XII.A.1.d.

- e. **1[c]/6[c]/11[b]: wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios.**

Olson discloses wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios. A POSITA would have been motivated to apply Olson's teachings regarding profiles with location entry/exit criteria and radio activation/deactivation information to

Rippon's disclosed system, and would have had a reasonable expectation of success in doing so, for the reasons discussed in Section XII.C.1. Ex-1002 ¶189.

Olson discloses a system that is “programmed to control activation of” the “WiFi interface” “in response to stimulus” indicating that “the mobile unit is within a proximity range of one or more trusted or preferred wireless networks.” Ex-1010 ¶33. Accordingly, Olson discloses profiles including radio settings including activation information for the Wi-Fi radio. Ex-1002 ¶¶187-206.

Moreover, Olson discloses “deactivat[ing]” or “turn[ing] off” the Wi-Fi radio “such that it utilizes no power” when it is not in use, for example, after a certain amount of time has passed since it has been in use and/or been in connection with a network. Ex-1010 ¶29; *see also id.*, Claims 12, 30. Accordingly, Olson discloses profiles including radio settings including deactivation information for the Wi-Fi radio. Ex-1002 ¶¶187-206.

Furthermore, Olson discloses controlling the activation and deactivation of further wireless interfaces (e.g., “GPS, cellular, WiMax or the like”) in the same manner. Ex-1010 ¶¶21-23; *see also id.* ¶23 (“system 10...is configured to control ***one or more of the interfaces*** 12, 14 and 16 to reduce power consumption”). Accordingly, Olson discloses profiles including radio settings including activation and deactivation information for the plurality of radios. Ex-1002 ¶¶187-206.

Olson discloses that the proximity range that triggers radio activation does not need “to enable communication” between the mobile unit and the wireless network but can instead “be a looser proximity range, such that there is an increased likelihood that communication...may be enabled.” Ex-1010 ¶33. Indeed, the criteria that is used “to trigger activation of the WiFi interface” may be tailored “to a desired level geographic or regional specificity.” *Id.* ¶40. Accordingly, Olson discloses a first profile associated with a first location and a second profile associated with a second location, the profiles each including location entry criteria and location exit criteria. Ex-1002 ¶¶187-206.

Indeed, Olson discloses “network location data” that may “include predefined location criteria that is associated with a geographical region or zone that includes one or more preferred wireless network” and/or may be “programmed based on a known set of such data” that has been supplied by the carrier(s) providing services for a particular zone or region, for example, “from a comparison of a cellular coverage maps with the location of the access points in the wireless enterprise network.” Ex-1010 ¶¶34-35. A “compare function” can determine “whether the location determined by the location calculator...substantially matches at least one of the pre-programmed location-indicating data in the network location data” and/or ascertain “a match based on a comparison of the extracted parameter(s) relative to the pre-programmed data in the network location data.” *Id.* ¶38. A “match...occurs

when the mobile unit resides within a predetermined region, such as may be defined to contain one or more known wireless networks.” *Id.*

Moreover, Table 1 shows a potential “set of location identifying data” that may “be stored in the network location data.” *Id.* ¶39. Specifically, Table 1 depicts “cellular location information for a given building” that comprises “access points AP1, AP2, AP3, AP4 and AP5 in a multi-building enterprise” (though “network location data...can be extended to accommodate different sizes and configurations of wireless networks and enterprises, which may include any number of wireless networks”). *Id.*

TABLE 1

ACCESS POINT	CELL ID	LAC	SECTOR ID
AP1	CID_2, CID_4	LL5	SS2
AP2	CID_2, CID_4, CID_5	LL5	SS3
AP3	CID_2, CID_4	LL5	SS2
AP4	CID_2, CID_3, CID_5	LL5	SS3
AP5	CID_2, CID_4,	LL5	SS1

For example, as shown in Figures 4-6, when “mobile unit 216” “has entered the building 202 through the entry 212,” the mobile unit may still “receive cellular network parameters in signals 222 and 224 from the base stations 218 and 220” and, further, the wireless network “can handoff the mobile unit 216 to connection to any of the access points AP1, AP2, AP3, AP4 and AP5 as the mobile unit moves within the building 202.” *Id.* ¶48, Figures 4-6.

- 3. Claims 2, 7, 12: ...the change in location is a change in relative location with respect to an access point**

See Section XII.A.2.

- 4. Claims 4, 9, 14: ...the access point is a Wi-Fi access point**

See Section XII.A.3.

- 5. Claims 5, 10, 15: ...the change in relative location is based on a proximity to the access point**

See Section XII.A.4.

- D. Ground 4: Claims 1-2, 4-7, 9-12, 14-15 are obvious over Arumi in view of Moy.**

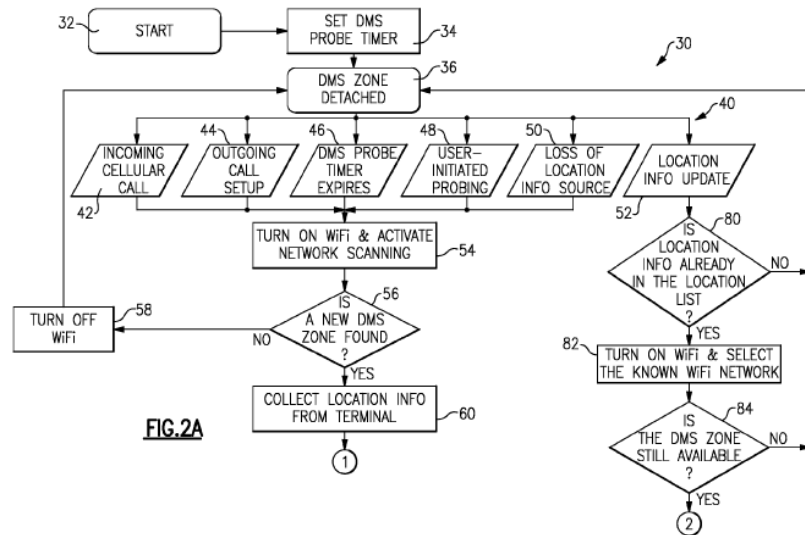
- 1. A POSITA would have been motivated to combine Arumi with Moy's teachings and would have had a reasonable expectation of success in doing so.**

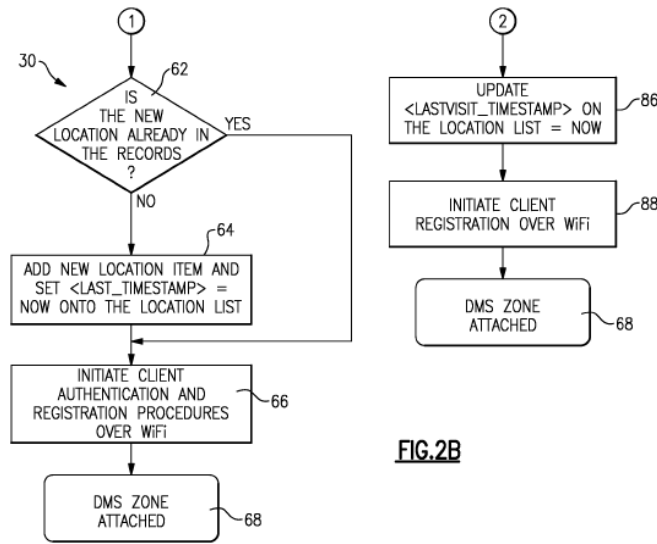
A POSITA would have been motivated to combine the teachings of Moy with Arumi and would have had a reasonable expectation of success in doing so, especially as each relates to the same technologies. Ex-1002 ¶210. In fact, both relate to location-based methods for reducing power consumption in wireless communication devices. Ex-1009, Abstract; Ex-1011 ¶¶4-6. And both describe activating and deactivating a Wi-Fi network based on stored location lists or profiles. Ex-1009, 2:25-31, 5:16-20, 6:35-44; Ex-1011 ¶¶21-22, 27.

Specifically, Arumi discloses a method “of managing Wi-Fi capability for a mobile station,” including “turning off a Wi-Fi communications portion...when the mobile station is not being used for Wi-Fi communications” and activating the Wi-

Fi capability in response to a “triggering event.” Ex-1011 ¶¶7, 15, 18, 20, Figure 1. These “triggering events...instigate a Wi-Fi probing mode used for determining whether the Wi-Fi capability should remain active.” *Id.* ¶15.

More specifically, Figure 2A/2B depicts the exemplary process, starting at 32 in Figure 2A. “Whenever the Wi-Fi capabilities are turned off, they remain off until [a] triggering event[] occurs.” *Id.* ¶21, Figures 2A-2B. And, similarly, “once the Wi-Fi capabilities are active,” they remain active “until [the] user disconnects from the Wi-Fi access point manually or leaves the area of coverage of that DMS zone.” *Id.* ¶29, Figure 3; *see also id.*, ¶29 (explaining that if the device “leaves the existing DMS zone” (at 74), its Wi-Fi capabilities “are automatically turned off” at 76).



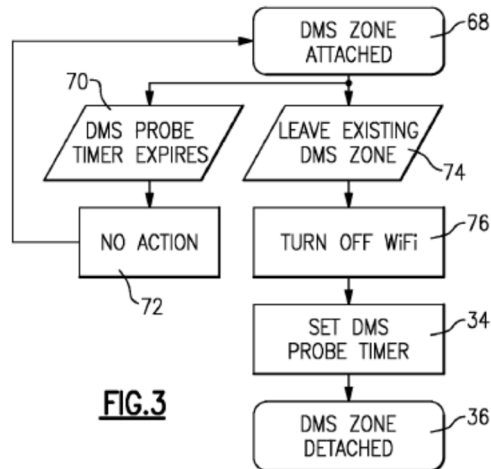


Triggering events include, for example, “a location information update at 52” and “the loss of a location information source at 50,” which “addresses a situation where the mobile station may control Wi-Fi capability based on known location information” and which “recognizes that if a mobile station loses contact” with a location information source, for example, if it “loses sight of GPS satellites,” “it may be beneficial to probe for Wi-Fi access at that time.” *Id.* ¶¶21, 25.

When any triggering event 42-50 occurs, the device’s Wi-Fi capability turns on and “a Wi-Fi probing mode begins at 54” (i.e., a triggering event “allows for selectively turning on the Wi-Fi communication capability only when it is potentially useful or needed”). *Id.* ¶26. A decision is made at 56 as to “whether a Wi-Fi access point is detected in the vicinity.” *Id.* Once “Wi-Fi network is detected and through which DMS service is accessible,” “that is considered a DMS zone.” *Id.* If a DMS zone is not found, the device’s Wi-Fi capability “is turned off at 58 and

the process returns to the step at 36.” *Id.* If “a DMS zone is found,” then information regarding the device’s current location “is collected from the mobile station at 60.” *Id.* ¶27. That location information is “compared to previously stored Wi-Fi availability locations from a location list” “stored on the mobile station.” *Id.* If that DMS zone’s location “is not already on the list based upon the determination made at 62,” then “a new location is added to the location list at 64.” *Id.* If that DMS zone’s location was already on the list or after it is added to the list, “a Wi-Fi connection begins at 66.” *Id.* Once authentication/registration with the Wi-Fi access point is finalized, “the DMS zone is considered attached at 68 and the Wi-Fi communication capabilities of the mobile station remain active.” *Id.*

Indeed, Arumi discloses that its mobile station may have “a service set identifier (SSID) whitelist of known SSIDs stored in memory.” Ex-1011 ¶28. A “known DMS zone” means that “the SSID of a discovered DMS zone is on the whitelist.” *Id.* A “new DMS zone” may be discovered by the mobile station “when it detects an unknown SSID” and successfully performs the authentication/registration procedures, in which case that SSID will be “added to the known SSID whitelist.” *Id.* The system may attempt “to locate a known DMS zone based on the known SSIDs before attempting to identify new or previously unknown SSIDs.” *Id.*



Although Arumi discloses using location lists to activate/deactivate a Wi-Fi radio in order to reduce power consumption, Moy provides further details describing a first profile associated with a first location and a second profile associated with a second location, each including location entry and exit criteria and radio settings including activation and deactivation information for the plurality of radios. Ex-1009, 2:25-31, 5:16-20, 6:35-44. A POSITA would have been motivated to apply Moy’s additional teachings regarding location profiles to Arumi to enhance the power-conserving capabilities of the device. Ex-1002 ¶¶210-218. Indeed, Arumi explains that it seeks to improve upon prior art systems that “undesirably utilize[] battery power” (Ex-1011 ¶4), and Arumi recognized the power-conserving benefits of deactivating Wi-Fi functionality when coverage is lost and creating location lists that store Wi-Fi locations (*id.* ¶¶26-29). Moy discloses a similar goal and method, describing “turn[ing] functionality off when it is not needed” in order to “conserve power on the device” (Ex-1009, 1:19-29), and Moy discloses using profiles, each

including location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios, to further that goal (*id.*, 2:10-13, 2:25-31, 5:16-20, 6:35-44). Based on the teachings of Moy, a POSITA would have recognized that including profiles with explicit location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios in Arumi's disclosed system would have enhanced Arumi's power-conserving benefits. Ex-1002 ¶¶210-218.

In particular, a POSITA would have recognized that applying Moy's teaching of profiles with explicit location entry/exit criteria and radio activation/deactivation information to Arumi's system would provide further opportunities for the deactivation of radios when not in use and further opportunities to limit the activation of radios to only when appropriate for the user, both furthering Arumi's power-conservation goals. *Id.* For example, a POSITA would have recognized that applying Moy's teachings regarding profiles with activation/deactivation settings for the plurality of radios to Arumi's system would allow Arumi's device to maximize the number of unnecessary radios that are deactivated (and, as a result, the power-conserving capabilities of the device). *Id.* For instance, a POSITA would have understood that, for example, a user may never use Arumi's device's cellular radio while at the movies, and thus would have been motivated to apply Moy's teachings to Arumi's device to deactivate the user's cellular radio while the user is at the movie

theater. *Id.* Moreover, for example, a POSITA would have recognized that applying Moy's teachings regarding profiles with explicit location entry/exit criteria and activation/deactivation settings to Arumi's system would allow Arumi's device to immediately recognize appropriate radio settings upon arrival to and departure from a location, and thus maximize the amount of time that unnecessary radios are deactivated (and, as a result, the power-conserving capabilities of the device). *Id.*

Moreover, implementing Moy's power-conserving mechanisms into Arumi's device would have been a straightforward engineering task for a POSITA as both Moy and Arumi disclose standard mobile computing devices. *Id.* Indeed, both Arumi and Moy disclose general purpose computing devices that work in the same general way and that a POSITA would have understood were capable of using the same and/or similar programming languages and/or operating systems. *Id.* Accordingly, a POSITA would have had a reasonable expectation of success in implementing the approaches described in Moy into Arumi's system as the implementation would have been a matter of straightforward engineering and thus would have yielded predictable results. *Id.* For example, both Arumi and Moy disclose the use of standard radio systems; controlling such radio systems via software in order to conserve power, as described in Moy, on a general purpose computing device (as described in both Arumi and Moy) was well within the skills of a POSITA. *Id.*

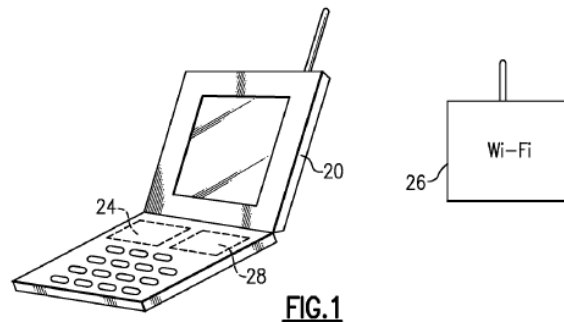
2. Independent Claims 1, 6, and 11

**a. 1[a]/6[pre]/11[a][i]: ...a mobile platform
[comprising:]**

11[pre]: An apparatus comprising:

Arumi discloses a method “of managing Wi-Fi capability for a mobile station” that “includes turning off a Wi-Fi communications portion of the mobile station when the mobile station is not being used for Wi-Fi communications” in order to conserve the device’s battery life. Ex-1011 ¶¶7, 18, 20, Figure 1.

Arumi’s Figure 1 depicts “an example mobile station 20,” which may include but is not limited to a cellular phone, personal digital assistant, notebook, or laptop computer. *Id.* ¶16. Accordingly, Arumi discloses a mobile platform apparatus. Ex-1002 ¶¶219-225.

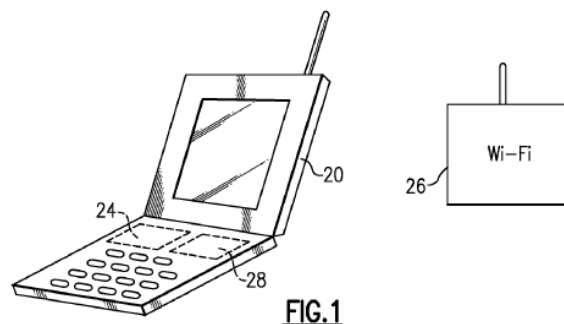


b. 1[a]/6[a]/11[a][i]: ...a plurality of radios[; and]

Arumi discloses that its “mobile stations” are able to communicate “using a cellular network, Wi-Fi communications or both” and that some mobile stations

include “a connection manager that switches between Wi-Fi and cellular-based (e.g., WAN IP connectivity) communications,” based on each network’s availability “and other criteria such as application needs.” Ex-1011 ¶4. In such mobile stations, the software for the connection manager relies on the device’s “Wi-Fi network card” in order to determine “whether a Wi-Fi communication network is currently available.” *Id.*

Arumi’s “mobile station” comprises “a first portion...that provides...Wi-Fi communication capability” (e.g., “a Wi-Fi network card”) such that the mobile station is able to “communicate with at least one source...of Wi-Fi communications” (e.g., “any known Wi-Fi access point or device”). *Id.* ¶17. The mobile station further comprises “communication capability such as cellular phone communications over a wireless network (e.g., UMTS, GSM or CDMA communications).” *Id.* ¶19. Indeed, Arumi’s mobile station is capable “of operating in more than one mode for communicating” (i.e., both “Wi-Fi communications” and “another type of communications”) and is thus “considered a dual mode service (DMS) mobile station.” *Id.* Accordingly, Arumi discloses a plurality of radios. Ex-1002 ¶¶226-232.



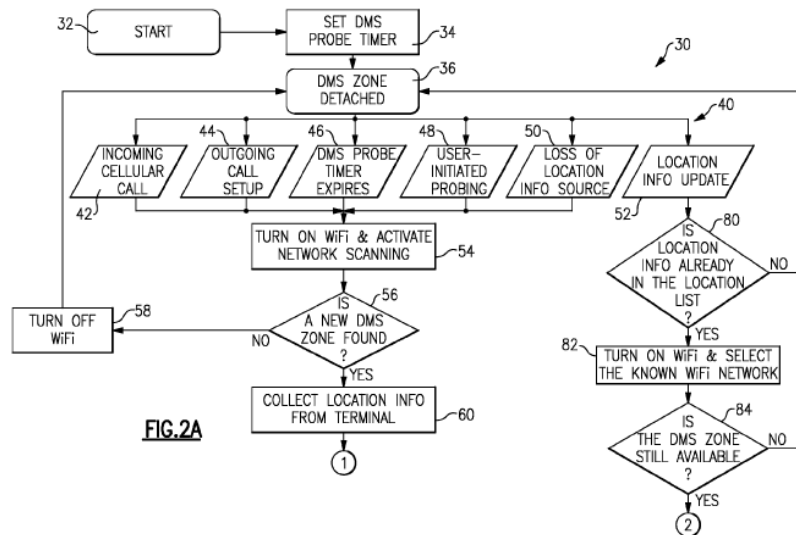
- c. **1[a]/6[b][i]/11[a][i]: logic to, detect a change in location for [the/a] mobile platform [having a plurality of radios], wherein each of the plurality of radios supports a different wireless technology, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss, and**

1[pre]: A non-transitory computer readable storage medium comprising a set of instructions which, when executed by one or more processors, cause a system to:

Arumi discloses wherein each of the plurality of radios supports a different wireless technology. Arumi discloses that its “mobile stations” communicate “using a cellular network, Wi-Fi communications or both” as the mobile stations include “a connection manager that switches between Wi-Fi and cellular-based...communications” based on each network’s availability. Ex-1011 ¶4. Indeed, Arumi’s “mobile station” comprises a radio “that provides...Wi-Fi communication capability” (e.g., “a Wi-Fi network card”) and a radio that provides “communication capability such as cellular phone communications over a wireless network (e.g., UMTS, GSM or CDMA communications).” *Id.* ¶¶17-19. The plurality of radios, each supporting a different wireless technology, allow the mobile station to “operat[e] in more than one mode for communicating” (i.e., both “Wi-Fi communications” and “another type of communications”) such that the device is “considered a dual mode service (DMS) mobile station.” *Id.*; Ex-1002 ¶¶233-252.

Further, Arumi discloses logic to detect a change in location for the mobile platform, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss.

Arumi discloses a method “of managing Wi-Fi capability for a mobile station” wherein “triggering events...instigate a Wi-Fi probing mode.” Ex-1011 ¶¶7, 15, 18, 20-21, Figure 1, Figure 2A/2B (depicting the exemplary process, starting at 32 in Figure 2A).



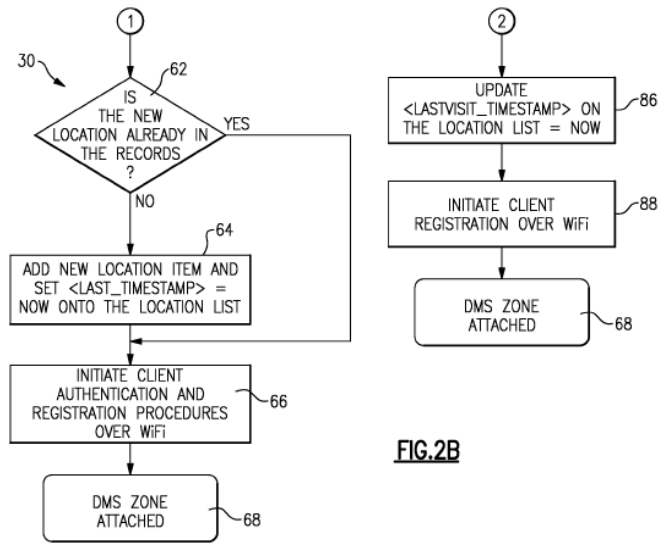


FIG.2B

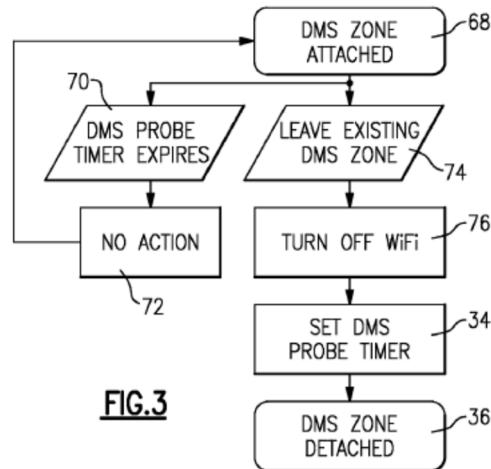
Triggering events may include, for example, “a location information update at 52.” *Id.* ¶21. Triggering event 52 “detects an update regarding a location of the mobile station,” which may, for example, “be the result of user movement between different locations.” *Id.* ¶30. Accordingly, Arumi discloses logic to detect a change in location for the mobile platform, and the change in location is based on information received from one or more active radios of the plurality of radios. Ex-1002 ¶¶233-252.

Arumi discloses that the triggering events may also include, for example, “the loss of a location information source at 50.” Ex-1011 ¶21. “Using the loss of a location information source as a triggering event (i.e., the triggering event 50) addresses a situation where the mobile station may control Wi-Fi capability based on known location information.” *Id.* ¶25. Thus, triggering event 50 “recognizes that if a mobile station loses contact” with a location information source, for example, if it “loses sight of GPS satellites, it may be beneficial to probe for Wi-Fi access at that

time.” *Id.* Accordingly, Arumi discloses detecting a change in location based on information received from one or more active radios, including a connection loss. Ex-1002 ¶¶233-252.

Moreover, Arumi discloses that when any triggering event occurs, the device’s Wi-Fi capability turns on and “a Wi-Fi probing mode begins at 54.” Ex-1011 ¶26. Accordingly, triggering event 50 “allows for potentially establishing a Wi-Fi connection, which can be used to obtain location information.” *Id.* ¶25. Thus, Arumi provides further disclosure regarding detecting a change in location based on information received from one or more active radios. Ex-1002 ¶¶233-252.

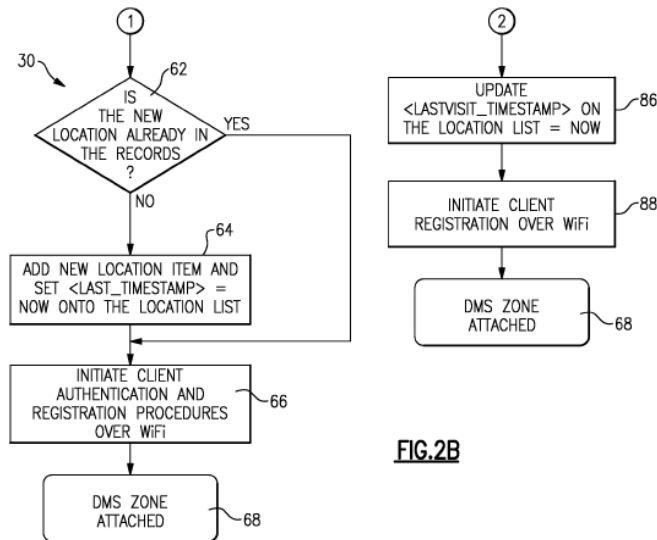
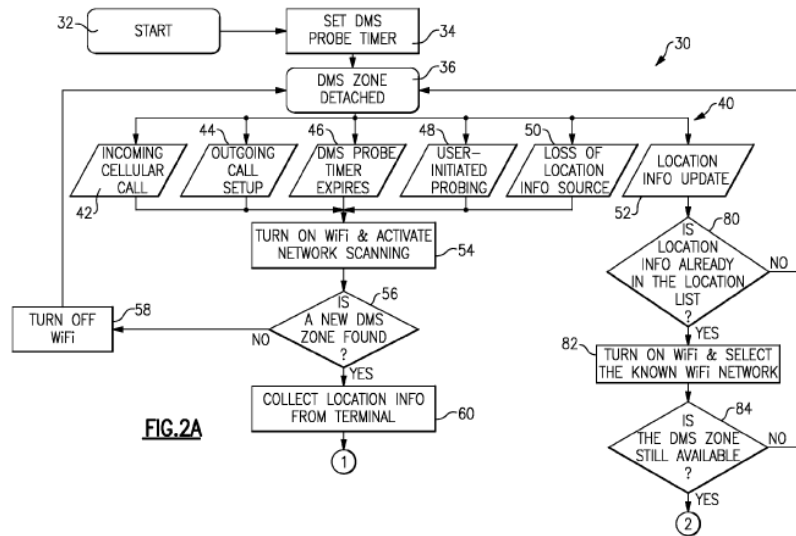
Furthermore, Arumi discloses that for all triggering events, “once the Wi-Fi capabilities are active,” they remain active until, for example, the user “leaves the area of coverage of that [Wi-Fi] zone.” Ex-1011 ¶29, Figure 3 (showing that if the device “leaves the existing [Wi-Fi] zone” (at 74), its Wi-Fi capabilities “are automatically turned off” at 76). Thus, Arumi provides further disclosure regarding detecting a change in location based on information received from one or more active radios, including a connection loss. Ex-1002 ¶¶233-252.



d. 6[b][ii]/1[b]/11[a][ii]: activate a Wi-Fi radio in response to the change in location,

Arumi discloses controlling the activation of Wi-Fi capability in response “to at least one of a plurality of...triggering events” such as “the loss of a location information source” and “a location information update.” Ex-1011 ¶¶7, 15, 18, 20-21, Figure 1; *see also id.* ¶15 (“triggering events...instigate a Wi-Fi probing mode used for determining whether the Wi-Fi capability should remain active”), ¶26 (a triggering event “allows for selectively turning on the Wi-Fi communication capability only when it is potentially useful or needed”). Accordingly, Arumi discloses activating a Wi-Fi radio in response to the change in location. Ex-1002 ¶¶253-263.

More specifically, Figure 2A/2B depicts the exemplary process, starting at 32 in Figure 2A. “Whenever the Wi-Fi capabilities are turned off, they remain off until [a] triggering event[] occurs.” Ex-1011 ¶21, Figures 2A-2B.



Arumi’s disclosed triggering events include “the loss of a location information source at 50” and “a location information update at 52.” *Id.*; *see also id.* ¶25 (“[T]he loss of a location information source...(i.e., the triggering event 50) addresses a

situation where the mobile station may control Wi-Fi capability based on known location information,” “recogniz[ing] that if a mobile station loses contact” with a location information source, (e.g., if it “loses sight of GPS satellites”), “it may be beneficial to probe for Wi-Fi access at that time.”); ¶30 (Triggering event 52 “detects an update regarding a location of the mobile station,” which may, for example, “be the result of user movement between different locations”). When any triggering event occurs, the device’s Wi-Fi capability turns on and “a Wi-Fi probing mode begins at 54.” *Id.* ¶26. Accordingly, Arumi discloses logic to activate a Wi-Fi radio in response to the change in location. Ex-1002 ¶¶253-263.

- e. **1[c]/6[c]/11[b]: wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios.**

Moy discloses wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios. *See* Section XII.B.2.e.

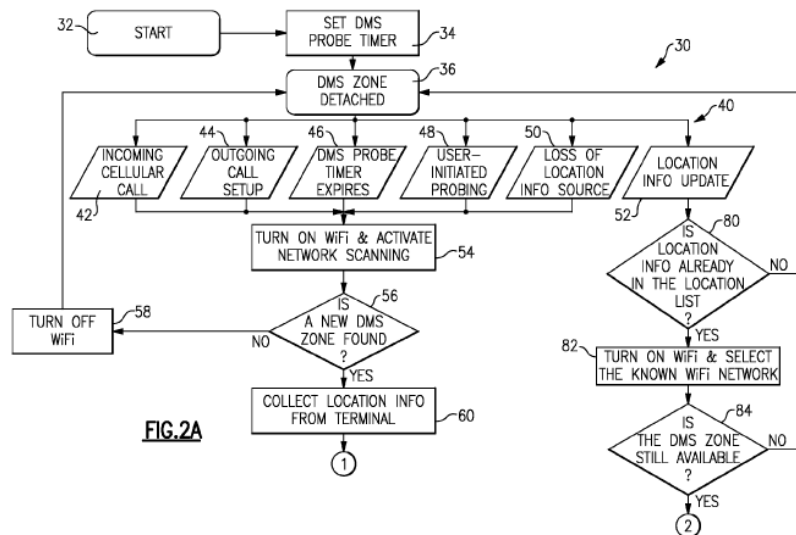
A POSITA would have been motivated to apply Moy’s teachings regarding profiles with location entry/exit criteria and radio activation/deactivation

information to Arumi's disclosed system, and would have had a reasonable expectation of success in doing so, for the reasons discussed in Section XII.D.1.

Ex-1002 ¶¶266.

3. Claims 2, 7, 12: ...the change in location is a change in relative location with respect to an access point

Arumi discloses a method “of managing Wi-Fi capability for a mobile station” wherein “triggering events...instigate a Wi-Fi probing mode.” Ex-1011 ¶¶7, 15, 18, 20-21, Figure 1, Figure 2A/2B (depicting the exemplary process, starting at 32 in Figure 2A).



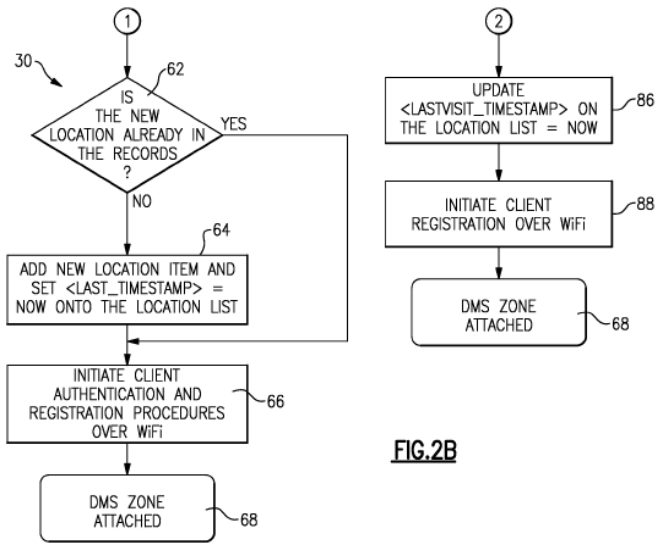
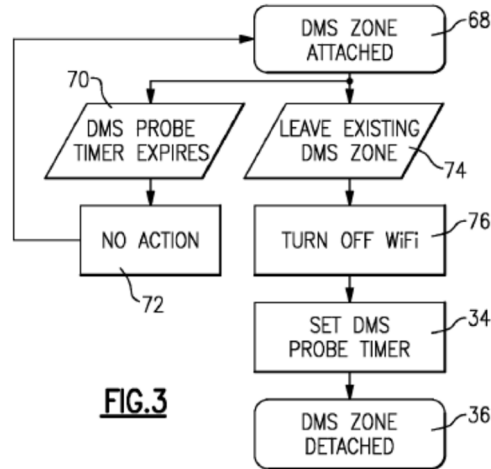


FIG. 2B

Triggering events may include, for example, “the loss of a location information source at 50.” Ex-1011 ¶21. “Using the loss of a location information source as a triggering event (i.e., the triggering event 50) addresses a situation where the mobile station may control Wi-Fi capability based on known location information.” *Id.* ¶25. Thus, triggering event 50 “recognizes that if a mobile station loses contact” with a location information source, for example, if it “loses sight of GPS satellites, it may be beneficial to probe for Wi-Fi access at that time.” *Id.* Accordingly, Arumi discloses the change in location is a change in relative location with respect to an access point (i.e., a Wi-Fi access point). Ex-1002 ¶¶268-278.

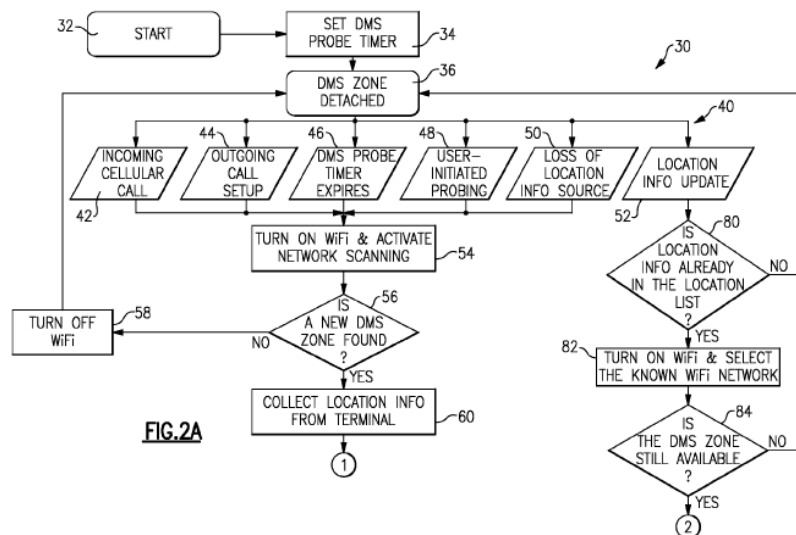
Indeed, Arumi discloses that when any triggering event occurs, the device’s Wi-Fi capability turns on and “a Wi-Fi probing mode begins at 54.” Ex-1011 ¶26. Accordingly, triggering event 50 “allows for potentially establishing a Wi-Fi connection, which can be used to obtain location information.” *Id.* ¶25. More

specifically, if the device's location "corresponds to a location where Wi-Fi communications are available," then "the Wi-Fi capability is turned on at 82" and previously-stored information relating to that location's Wi-Fi network "is used to begin the process of establishing a Wi-Fi connection." *Id.* ¶30. Indeed, "client registration begins to establish a Wi-Fi connection" at 88, and, if successful, "the DMS zone is attached at 68." *Id.* ¶31. Specifically, "[w]hen Wi-Fi network is detected and through which DMS service is accessible (e.g., successful registration with a VoIP gateway)," a DMS zone is attached. *Id.* ¶¶26, 31. "[J]ust recognizing a Wi-Fi network is not considered sufficient," however—it is also necessary that "a connection to some VoIP gateway over that particular Wi-Fi network is possible." *Id.* ¶26. A POSITA would have understood that whether such a "DMS zone" is found "(e.g., a Wi-Fi access point is available and it is possible to register with a VoIP gateway)" is indicative of the change in location being a change in relative location with respect to an access point. *Id.* ¶27; Ex-1002 ¶¶268-278. Furthermore, Arumi discloses that for all triggering events, "once the Wi-Fi capabilities are active," they remain active until, for example, the user "leaves the area of coverage of that [Wi-Fi] zone." Ex-1011 ¶29, Figure 3 (showing that if the device "leaves the existing [Wi-Fi] zone" (at 74), its Wi-Fi capabilities "are automatically turned off" at 76).



4. Claims 4, 9, 14: ...the access point is a Wi-Fi access point

Arumi discloses a method “of managing Wi-Fi capability for a mobile station” wherein “triggering events...instigate a Wi-Fi probing mode.” Ex-1011 ¶¶7, 15, 18, 20-21, Figure 1, Figure 2A/2B (depicting the exemplary process, starting at 32 in Figure 2A).



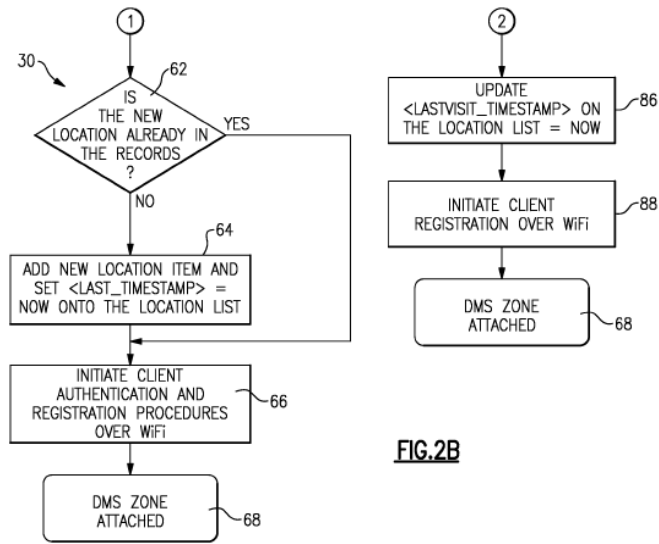


FIG. 2B

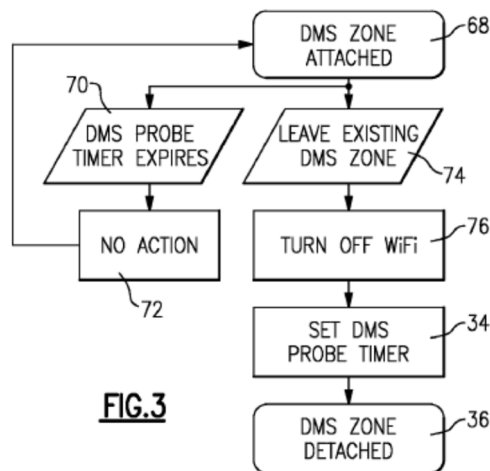
Specifically, when any triggering event occurs, the device's Wi-Fi capability turns on and "a Wi-Fi probing mode begins at 54" such that a triggering event "allows for potentially establishing a Wi-Fi connection, which can be used to obtain location information." *Id.* ¶¶25-26. Accordingly, Arumi discloses the access point is a Wi-Fi access point. Ex-1002 ¶¶280-291.

More specifically, if the device's location "corresponds to a location where Wi-Fi communications are available," then "the Wi-Fi capability is turned on at 82" and previously-stored information relating to that location's Wi-Fi network "is used to begin the process of establishing a Wi-Fi connection." Ex-1011 ¶30. Indeed, "client registration begins to establish a Wi-Fi connection" at 88, and, if successful, "the DMS zone is attached at 68." *Id.* ¶31. Specifically, "[w]hen Wi-Fi network is detected and through which DMS service is accessible (e.g., successful registration with a VoIP gateway)," a DMS zone is attached. *Id.* ¶¶26, 31. "[J]ust recognizing a

Wi-Fi network is not considered sufficient,” however—it is also necessary that a connection to some VoIP gateway over that particular Wi-Fi network is possible.”

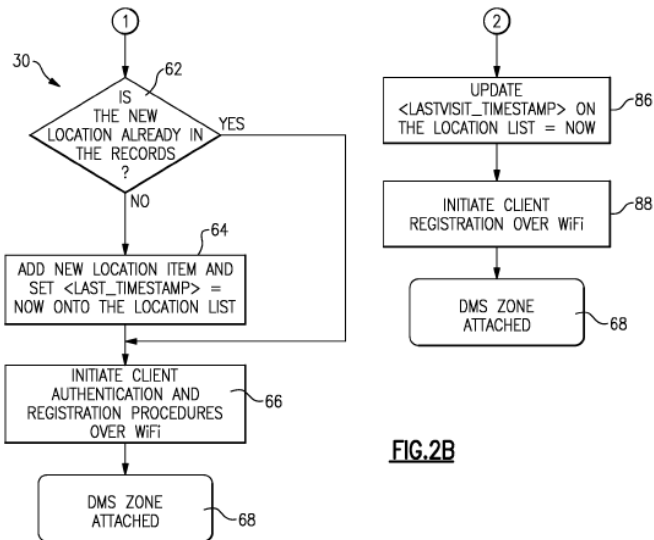
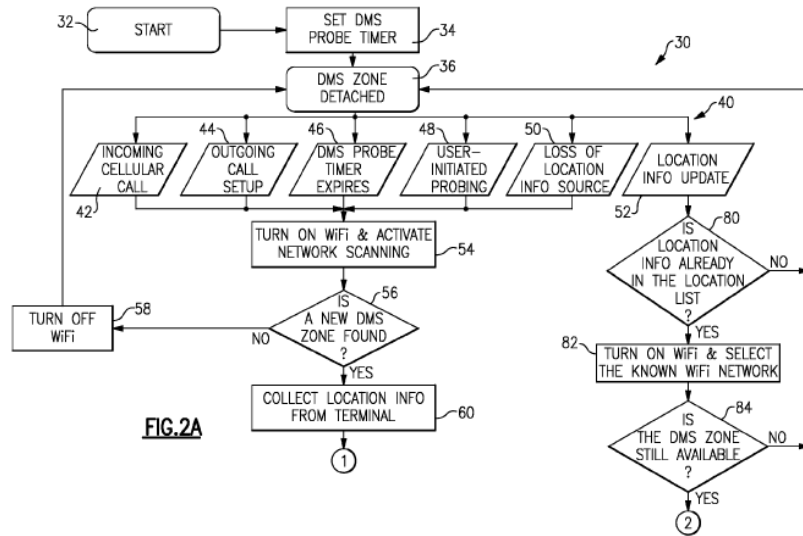
Id. ¶26.

Furthermore, Arumi discloses that for all triggering events, “once the Wi-Fi capabilities are active,” they remain active until, for example, the user “leaves the area of coverage of that [Wi-Fi] zone.” *Id.* ¶29, Figure 3 (showing that if the device “leaves the existing DMS zone” (at 74), its Wi-Fi capabilities “are automatically turned off” at 76); Ex-1002 ¶¶280-291.



5. Claims 5, 10, 15: ...the change in relative location is based on a proximity to the access point

Arumi discloses a method “of managing Wi-Fi capability for a mobile station” wherein “triggering events...instigate a Wi-Fi probing mode.” Ex-1011 ¶¶7, 15, 18, 20-21, Figure 1, Figures 2A/2B (depicting the exemplary process, starting at 32 in Figure 2A).

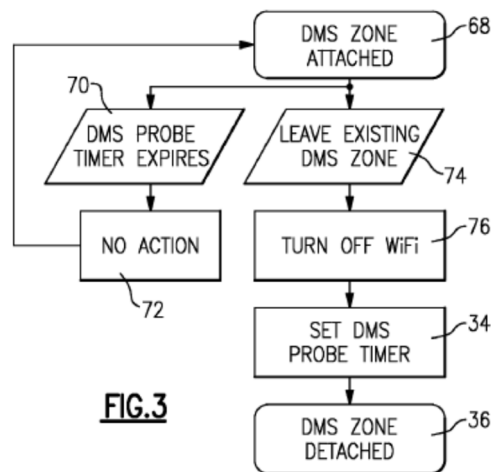


Triggering events may include, for example, “the loss of a location information source at 50.” Ex-1011 ¶21. “Using the loss of a location information source as a triggering event (i.e., the triggering event 50) addresses a situation where the mobile station may control Wi-Fi capability based on known location information.” *Id.* ¶25. Thus, triggering event 50 “recognizes that if a mobile station loses contact” with a location information source, for example, if it “loses sight of GPS satellites, it may

be beneficial to probe for Wi-Fi access at that time.” *Id.* Accordingly, Arumi discloses the change in relative location is based on a proximity to the access point. Ex-1002 ¶¶292-306.

Moreover, Arumi discloses that when any triggering event occurs, the device’s Wi-Fi capability turns on and “a Wi-Fi probing mode begins at 54.” Ex-1011 ¶26. Accordingly, triggering event 50 “allows for potentially establishing a Wi-Fi connection, which can be used to obtain location information.” *Id.* ¶25. More specifically, if the device’s location “corresponds to a location where Wi-Fi communications are available,” then “the Wi-Fi capability is turned on at 82” and previously-stored information relating to that location’s Wi-Fi network “is used to begin the process of establishing a Wi-Fi connection.” *Id.* ¶30. Indeed, “client registration begins to establish a Wi-Fi connection” at 88, and, if successful, “the DMS zone is attached at 68.” *Id.* ¶31. Specifically, “[w]hen Wi-Fi network is detected and through which DMS service is accessible (e.g., successful registration with a VoIP gateway),” a DMS zone is attached. *Id.* ¶¶26, 31. “[J]ust recognizing a Wi-Fi network is not considered sufficient,” however—it is also necessary that a connection to some VoIP gateway over that particular Wi-Fi network is possible.” *Id.* ¶26. A POSITA would have understood that whether such a “DMS zone” is found “(e.g., a Wi-Fi access point is available and it is possible to register with a VoIP gateway)” is indicative of a change in relative location based on a proximity to the

access point. *Id.* ¶27; Ex-1002 ¶¶292-306. Indeed, Arumi discloses that for all triggering events, “once the Wi-Fi capabilities are active,” they remain active until, for example, the user “leaves the area of coverage of that [Wi-Fi] zone.” Ex-1011 ¶29, Figure 3 (showing that if the device “leaves the existing DMS zone” (at 74), its Wi-Fi capabilities “are automatically turned off” at 76).



E. Ground 5: Claims 1-2, 4-7, 9-12, 14-15 are obvious over Arumi in view of Olson.

- 1. A POSITA would have been motivated to combine Arumi with Olson’s teachings and would have had a reasonable expectation of success in doing so.**

A POSITA would have been motivated to combine the teachings of Olson with Arumi and would have had a reasonable expectation of success in doing so, especially as each relates to the same technologies. Ex-1002 ¶307. In fact, both relate to location-based methods for reducing power consumption in wireless communication devices. Ex-1010 ¶7; Ex-1011 ¶¶4-6. And both describe activating and deactivating a Wi-Fi network based on stored location lists or profiles. Ex-1010

¶¶34, 48, 10:40-58; Ex-1011 ¶¶21-22, 27. Although Arumi discloses using location lists to activate/deactivate Wi-Fi radio in order to reduce power consumption, Olson provides further details describing a first profile associated with a first location and a second profile associated with a second location, each including location entry and exit criteria and radio settings including activation and deactivation information for the plurality of radios. Ex-1010 ¶¶34, 48.

A POSITA would have been motivated to apply Olson’s additional teachings regarding location profiles to Arumi to enhance the power-conserving capabilities of the device. Ex-1002 ¶308. Indeed, Arumi explains that it seeks to improve upon prior art systems that “undesirably utilize[] battery power” (Ex-1011 ¶4), and Arumi recognized the power-conserving benefits of deactivating Wi-Fi functionality when coverage is lost and creating location lists that store Wi-Fi locations (*id.* ¶¶26-29). Olson discloses a similar goal and method, describing the invention as generally “aimed to reducing power consumption in a mobile unit” (Ex-1010 ¶4), and Olson discloses using profiles, each including location entry/exit criteria and radio settings including activation/deactivation information for the plurality of radios, to further that goal (*id.* ¶¶21-23, 29, 33-35, 38-40, 48). Based on the teachings of Olson, a POSITA would have recognized that including profiles with explicit location entry/exit criteria and radio settings including activation/deactivation information

for the plurality of radios in Arumi's disclosed system would have enhanced Arumi's power-conserving benefits. Ex-1002 ¶308.

In particular, a POSITA would have recognized that applying Olson's teaching of profiles with explicit location entry/exit criteria and radio activation/deactivation information to Arumi's system would provide further opportunities for the deactivation of radios when not in use and further opportunities to limit the activation of radios to only when appropriate for the user, both furthering Arumi's power-conservation goals. *Id.* ¶309. For example, a POSITA would have recognized that applying Olson's teachings regarding profiles with activation/deactivation settings for the plurality of radios to Arumi's system would allow Arumi's device to maximize the number of unnecessary radios that are deactivated (and, as a result, the power-conserving capabilities of the device). *Id.* For instance, a POSITA would have understood that, for example, a user may never use Arumi's device's cellular radio while at the movies, and thus would have been motivated to apply Olson's teachings to Arumi's device to deactivate the user's cellular radio while the user is at the movie theater. *Id.* Moreover, for example, a POSITA would have recognized that applying Olson's teachings regarding profiles with explicit location entry/exit criteria and activation/deactivation settings to Arumi's system would allow Arumi's device to immediately recognize appropriate radio settings upon arrival to and departure from a location, and thus maximize the

amount of time that unnecessary radios are deactivated (and, as a result, the power-conserving capabilities of the device). *Id.*

Moreover, implementing Olson's power-conserving mechanisms into Arumi's device would have been a straightforward engineering task for a POSITA as both Olson and Arumi disclose standard mobile computing devices. *Id.* ¶310. Indeed, both Arumi and Olson disclose general purpose computing devices that work in the same general way and that a POSITA would have understood were capable of using the same and/or similar programming languages and/or operating systems. *Id.* Accordingly, a POSITA would have had a reasonable expectation of success in implementing the approaches described in Olson into Arumi's system as the implementation would have been a matter of straightforward engineering and thus would have yielded predictable results. *Id.* For example, both Arumi and Olson disclose the use of standard radio systems; controlling such radio systems via software in order to conserve power, as described in Olson, on a general purpose computing device (as described in both Arumi and Olson) was well within the skills of a POSITA. *Id.*

2. Independent Claims 1, 6, and 11

**a. 1[a]/6[pre]/11[a][i]: ...a mobile platform
[comprising:]**

11[pre]: An apparatus comprising:

See Section XII.D.2.a.

b. 1[a]/6[a]/11[a][i]: ...a plurality of radios[; and]

See Section XII.D.2.b.

c. 1[a]/6[b][i]/11[a][i]: logic to, detect a change in location for [the/a] mobile platform [having a plurality of radios], wherein each of the plurality of radios supports a different wireless technology, and the change in location is based on information received from one or more active radios of the plurality of radios on the mobile platform including a connection loss, and

1[pre]: A non-transitory computer readable storage medium comprising a set of instructions which, when executed by one or more processors, cause a system to:

See Section XII.D.2.c.

d. 6[b][ii]/1[b]/11[a][ii]: activate a Wi-Fi radio in response to the change in location,

See Section XII.D.2.d.

e. 1[c]/6[c]/11[b]: wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio settings including activation and deactivation information for the plurality of radios.

Olson discloses wherein a first profile is associated with a first location and a second profile is associated with a second location, and the first profile and the second profile each include location entry criteria, location exit criteria, and radio

settings including activation and deactivation information for the plurality of radios.

See Section XII.C.2.e.

A POSITA would have been motivated to apply Olson’s teachings regarding profiles with location entry/exit criteria and radio activation/deactivation information to Arumi’s disclosed system, and would have had a reasonable expectation of success in doing so, for the reasons discussed in Section XII.E.1.

Ex-1002 ¶317.

3. Claims 2, 7, 12: ...the change in location is a change in relative location with respect to an access point

See Section XII.D.3.

4. Claims 4, 9, 14: ...the access point is a Wi-Fi access point

See Section XII.D.4.

5. Claims 5, 10, 15: ...the change in relative location is based on a proximity to the access point

See Section XII.D.5.

XIII. THERE IS NO BASIS FOR ANY DISCRETIONARY DENIAL

The Board should decline to exercise its discretion to deny institution under 35 U.S.C. §314(a). While Director Vidal’s June 21, 2022 Guidance made clear that “*Fintiv* is limited to facts of that case,” for completeness, Petitioner addresses the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). The six factors set out in *Fintiv* do not justify denying institution.

The **first *Fintiv* factor** is neutral because Samsung has not yet moved to stay the district court proceedings pending IPR, and the PTAB will not infer how the district court would rule should a stay be requested. *See, e.g., Hulu LLC v. SITO Mobile R&D IP, LLC et al.*, IPR2021-00298, Paper 11 at 10-11 (PTAB May 19, 2021).

For the **second *Fintiv* factor**, the district court has set a trial date for May 20, 2024. This timing does not tip in favor of denying the petition in this case. *See, e.g., Apple Inc. v. Koss Corp.*, IPR2021-00305, Paper 14 at 13 (PTAB June 3, 2021). This Petition is filed in March 2023. An institution decision should be issued within six months of docketing, around September 2023. And a final written decision (“FWD”) should be issued in September 2024. Thus, the trial date is likely around three months before the FWD. Recent PTAB cases analyzing similar schedules have weighed the second factor as neutral or, at most, slightly in favor of denial. *See, e.g., Google LLC et al. v. Parus Holdings, Inc.*, IPR2020-00847, Paper 9 at 12 (PTAB Oct. 21, 2020) (trial scheduled for three months before FWD weighs “at best, neutral”); *Apple Inc. v. Koss Corp.*, IPR2021-00305, Paper 14 at 13-14 (PTAB June 3, 2021) (trial scheduled for two months before FWD weighs “at most, minimally in favor” of denial).

“The PTAB will also consider additional supporting factors such as the number of cases before the judge in the parallel litigation.” Director Vidal’s June

2022 Guidance. Here, the court has scheduled three other trials (2:22-cv-00312-JRG-RSP *Fleet Connect Sols. LLC v. Southern Tire Mart, LLC*; 2:22-cv-00322-JRG-RSP *Lionra Technologies Ltd. v. Fortinet, Inc.*; and 2:22-cv-00361-JRG-RSP *S3G Tech. LLC v. Nordstrom Inc.*) in the same week as the trial for this case.

If the median time-to-trial for civil actions in the Eastern District of Texas (“EDTX”) is used to estimate the trial date (i.e., to account for potential delays, etc.), as advised by Director Vidal’s June 2022 Guidance, trial should not be expected to occur until October 2024, *after* a FWD will issue. Ex-1021, at 35 (indicating a most-recent median time-to-trial for civil actions in EDTX of 24.5 months).

The **third *Fintiv* factor** weighs strongly against denial. No hearing has been set and no substantive activity has occurred in the case. Because the investment in the district court proceeding has been minimal and Petitioner acted diligently, this factor weighs strongly against discretionary denial. *See, e.g., Hulu*, Paper 11 at 13.

The **fourth *Fintiv* factor** also weighs against denial. As explained above, the median time-to-trial for civil actions in EDTX suggests that trial will not occur until after a FWD is issued. Thus, “there is a reasonable likelihood that the Board will address the overlapping validity issues prior to the district court reaching them at trial..., thereby providing the possibility of simplifying issues for trial.” *Juniper Networks, Inc. v. Packet Intelligence LLC*, IPR2020-0039, Paper 21 at 18 (PTAB Sept. 10, 2020); *see also MED-EL Elektromedizinische Geraete GmbH v. Sonova*

AG, IPR2020-00176, Paper 13 at 15 (PTAB June 3, 2020) (“As to the fourth factor, the parties do not dispute that overlap exists between the invalidity issues in this case and in the district court. This overlap may inure to the district court’s benefit, however, by simplifying issues for trial should we reach our determination on the challenges raised in the Petition before trial.”).

Moreover, Petitioner is challenging more claims than asserted in the district court litigation. PO’s infringement contentions assert only Claims 6-7 and 9-10. This Petition challenges Claims 1-2, 4-7, 9-12, and 14-15. This IPR proceeding is thus the only venue in which the invalidity challenges against several claims in the ’840 Patent will be adjudicated. Moreover, reviewing the challenged claims in this proceeding promotes efficiency in that many more claims will be addressed here, which will resolve disputes against future district court defendants. *See Fintiv*, Paper 11 at 4 (“the Board’s cases addressing earlier trial dates as a basis for denial under *NHK* have sought to balance considerations such as system efficiency, fairness, and patent quality.”). Accordingly, challenging additional claims further weighs against denial. *See, e.g., Vudu, Inc. v. Ideahub, Inc.*, IPR2020-01688, Paper 16 at 14-15 (PTAB April 19, 2021) (“differences in asserted claims” and claims challenged in the petition weighs against denial).

On the **fifth *Fintiv* factor**, the Board should give little weight to the fact that Petitioner and PO are the same parties as in district court. *See Weatherford U.S.*,

L.P., v. Enventure Global Tech., Inc., Paper 16 at 11-13 (PTAB Apr. 14, 2021).

Although Samsung is both Petitioner and litigation defendant, this factor does not outweigh the other factors that strongly weigh against discretionary denial.

“Other circumstances” under the **sixth *Fintiv* factor** further weigh against discretionary denial. The merits of the Petition are especially strong. *See Align Tech., Inc. v. 3Shape A/S*, IPR2020-01087, Paper 15 at 42-43 (PTAB Jan. 20, 2021). *See supra* Section XIII.

Taken together holistically, the *Fintiv* factors strongly weigh against denial.

XIV. CONCLUSION

For the reasons given above, Petitioner requests institution of IPR for Claims 1-2, 4-7, 9-12, and 14-15 of the '840 Patent based on each of the grounds specified in this Petition.

Respectfully Submitted,

/s/ John Kappos
John Kappos (Reg. No. 37,861)

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner certifies that this petition includes 13,938 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under § 42.8, certificates of service, word count, and exhibits.

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on March 13, 2023, by filing this document through the Patent Trial and Appeal Board P-TACTS System, as well as delivering a copy via express mail upon the following attorneys of record for the Patent Owner and Petitioner:

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Petition for *Inter Partes* Review

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