UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.;
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner

v.

SECURE COMMUNICATION TECHNOLOGIES, LLC,
Patent Owner.

Case No. IPR2025-01051
U.S. Patent No. 11,687,971

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,687,971

TABLE OF CONTENTS

Page

I. INTRODUCTION 1

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8 1

III. FEE AUTHORIZATION 3

IV. GROUNDS FOR STANDING 3

V. PRECISE RELIEF REQUESTED 3

VI. THE CHALLENGED PATENT 4

VII. PROSECUTION HISTORY OF THE '971 PATENT 6

VIII. LEVEL OF ORDINARY SKILL IN THE ART 7

IX. PRIORITY DATE 7

X. CLAIM CONSTRUCTION 7

XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART 8

A. Watanabe (Ex-1005, Ex-1006) 8

B. Ribaudo (Ex-1007) 11

C. Behrens (Ex-1008) 13

XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS 14

A. Ground 1: Claims 1, 12-13, 15, 29-31, 34, 36, 50, 56, 61, 64-65, 67, and 80 are obvious over Watanabe in view of Ribaudo. 14

1. A POSITA would have been motivated to combine Watanabe's teachings with Ribaudo's teachings and would have had a reasonable expectation of success. 14

2. Independent Claims 1 and 50 18

a. Element 1[pre]: A method comprising: Element 50[pre]: A computer program product for installation in a non-volatile memory in a wireless device, the computer program product comprising computer program instructions that, when read from the non-volatile memory, and then executed by one or more processors in the wireless device, cause the wireless device to: 18

TABLE OF CONTENTS
(continued)

Page

b. Elements 1[a]/50[a]: [receiving, at a wireless device,]/[process a first plurality of beacon transmissions, received at the wireless device] via a [short range]/[Bluetooth] wireless protocol, [a first plurality of beacon transmissions,] each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not otherwise accessible to the wireless device utilizing the [short range]/[Bluetooth] wireless protocol; 20

c. Elements 1[b]/50[b]: [receiving, at the wireless device via a second wireless protocol, the stored information from one or more servers,]/[process stored information transferred from one or more servers to the wireless device via a second wireless protocol, wherein] the stored information relat[ing]/[es] to [a particular]/[an] entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the [short range]/[Bluetooth] wireless protocol; 28

TABLE OF CONTENTS
(continued)

Page

d. Elements 1[c]/50[c]: [causing selection of]/[select] one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service; and 31

e. Elements 1[d]/50[d]: [taking]/[perform a] first further action[, the first further action] relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers. 35

3. Dependent Claims 12-13, 15, 29-31, 34, 36, 56, 61, 64-65, 67, and 80 37

a. Claims 12/64: The [method]/[computer program product] of claim [1]/[50] wherein the [taking] first further action [further]/[additionally] includes causing the wireless device[,] to: send the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and [subsequently] receive the stored information in response [thereto]. 37

b. Claims 13/65: The [method]/[computer program product] of claim [1]/[50] wherein the [computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to receive] stored information [is received] at the wireless device from at least one of the one or more servers prior to [the taking]/[performing] of the first further action.....38

TABLE OF CONTENTS
(continued)

Page

c. Claims 15/36/67/80: The [method]/[computer program product] of claim [1]/[50] [further comprising]/[wherein the] [computer program instructions][,]/[that,] [when executed by the one or more processors] [in the wireless device, further] [cause the wireless device to]: us[ing]/[e] the stored information to determine if the first unique identifier is present among the [first] selected one or more [of the] unique identifiers [from the first plurality of beacon transmissions]. 39

d. Claims 29/56: The [method/computer program product] of claim [1/50] wherein the first further action is [additionally] related to receiving advertising information for presentation to a user of the wireless device, based upon the [first] unique identifier, or [based upon] information derived from the first unique identifier. 39

e. Claim 30: The method of claim 1 wherein the first further action includes receiving content from a server based upon information derived from the first unique identifier. 40

f. Claims 31/61: The [method/computer program product] of claim [1/50,] wherein [following the taking of] the first further action[,/additionally includes causing the wireless device to send information to] a server associated with an account for a user of the wireless device[, and enabling the server to/performs a step of] send[ing] a[n email] message to an email address associated with the account for the user as a result of the first further action.....42

g. Claim 34: The method of claim 1 wherein the first further action is related to either a product tied to a location or an advertisement tied to a location. 43

TABLE OF CONTENTS
(continued)

Page

B. Ground 2: Claims 2-10, 14, 16, 18-19, 22-28, 35, 37-44, 46, 48-49, 51-55, 57-60, 62, 66, 68, 72, 75-79, and 81-83 are obvious over Watanabe in view of Ribaudo and Behrens. 43

1. A POSITA would have been motivated to combine Watanabe-Ribaudo's teachings with Behrens' teachings and would have had a reasonable expectation of success.....44

2. Independent Claim 37 51

a. Element 37[pre]: A mobile wireless device comprising: 51

b. Element 37[a]: one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol; 52

c. Element 37[b]: one or more processors; and.....52

d. Element 37[c]: one or more memory devices coupled to the one or more processors, the one or more memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including: 53

e. Element 37[d]: receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, the unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not otherwise accessible to the wireless device utilizing the Bluetooth wireless protocol; 55

TABLE OF CONTENTS
(continued)

Page

f. Element 37[e]: receiving from one or more servers, using the second wireless protocol, stored information related to a entity or object associated with a first unique identifier; 57

g. Element 37[f]: selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with the particular wireless beacon service; 57

h. Element 37[g]: taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; 58

i. Element 37[h]: receiving, by the wireless device, using the Bluetooth wireless protocol, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) the beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not accessible to the wireless device utilizing the Bluetooth wireless protocol; 58

TABLE OF CONTENTS
(continued)

Page

j. Element 37[i]: selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that a particular received beacon transmission is associated with the same particular wireless beacon service;.....60

k. Element 37[j]: taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from a same transmitting device; and 60

l. Element 37[k]: wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier. 63

3. Dependent Claims 2-10, 14, 16, 18-19, 22-28, 35, 38-44, 46, 48-49, 51-55, 57-60, 62, 66, 68, 72, 75-79, and 81-83.....65

a. Claims 2 and 51 65

TABLE OF CONTENTS
(continued)

Page

b. Claims 3/52: The [method]/[computer program product] of claim [2]/[51] wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier, and wherein a plurality of beacon transmissions including the particular [beacon] service identifier and the first unique identifier are received in the first time period, and no beacon transmissions including the same [particular] service identifier and the second unique identifier are received in the first time period.....67

c. Claims 4/40/53: The [method]/[mobile wireless device]/[computer program product] of claim [3]/[37]/[52] wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service. 69

d. Claims 5/41/54: The [method]/[mobile wireless device]/[computer program product] of claim [4]/[40]/[53] wherein the function is related to a current phone call, music being played, a video being played, a multi-player game, or a shared application.....70

e. Claims 6/55: The [method]/[computer program product] of claim [2]/[51] wherein the first or the second further action is [additionally] related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifier, or information derived from the first or second unique identifier. 71

TABLE OF CONTENTS
(continued)

Page

f. Claims 7/42/57: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] wherein one or more of the first further action and the second further action [additionally] includes [causing the wireless device to] receiv[ing]/[e] content from a server based upon information derived from either the first unique identifier or the second unique identifier.....71

g. Claims 8/43/59: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51], wherein the first or second further action [additionally] includes [sending a message] [or] [causing a server to send a message]/[causing the wireless device to send a message] to another device associated with an account related to the first and the second unique identifiers[, or information derived from the first or the second unique identifiers].....71

h. Claim 9: The method of claim 2 wherein following the taking of the first or second further action, a server associated with an account for a user of the wireless device performs a step of sending an email message to an email address associated with the account for the user, the email message relating to the particular entity or object.....73

i. Claims 10/44/62: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] wherein the second further action [additionally] includes [causing the wireless device to] prevent[ing] sending of the second unique identifier or information derived from the second unique identifier by the [mobile] wireless device to at least one of the one or more servers. 73

TABLE OF CONTENTS
(continued)

Page

j. Claims 14/66: The [method]/[computer program product] of claim [2]/[51] wherein the [computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to: receive] stored information [is received] at the wireless device from at least one of the one or more servers prior to performing one or more of the first and the second further action. 74

k. Claims 16/68: The [method]/[computer program product] of claim [2]/[51] wherein all beacon transmitter devices participating in the particular wireless beacon service have the same particular beacon service identifier. 75

l. Claim 18: The method of claim 2 wherein the steps performed at the wireless device are performed as a result of an application program executing on the wireless device. 75

m. Claims 19/72: The [method]/[computer program product] of claim [2]/[51] wherein the second further action is [additionally] related to either a product tied to a location or an advertisement tied to a location.....76

n. Claims 22/48/75: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] wherein the second further action [additionally] includes [causing the wireless device to] allow[ing] a user associated with the [mobile] wireless device to [be provided] access to an object or device associated with the wireless beacon service. 76

TABLE OF CONTENTS
(continued)

Page

o. Claims 23/35/49/76: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[3]/[37]/[51] wherein the [taking]/[first or] second further action additionally comprises: controlling further communications between the [mobile] wireless device and at least one device or server associated with an entity or object in proximity to the wireless device [based upon information derived from the first or second unique identifier]. 77

p. Claims 24/82/77: The [method]/[mobile wireless device]/[computer program product] of claim [3]/[37]/[52] [further comprising:]/[wherein the operations further comprise]/[wherein the computer program instructions, when executed by the wireless device, further cause the wireless device to:] receiv[ing]/[e], at the [mobile] wireless device, timing notification information for coordination of active times for beacon transmissions.....78

q. Claims 25/83/78: The [method]/[computer program product] of claim [24]/[53]/[77] wherein the [receiving, at the wireless device of the] timing notification information is not [received] directly from the beacon transmitter. 79

TABLE OF CONTENTS
(continued)

Page

r. Claims 26/38/79: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] [further comprising:]/[wherein the operations further comprise]/[wherein the computer program instructions, when executed by the wireless device, further cause the wireless device to:] us[ing]/[e] the stored information to determine if the second unique identifier is present among the selected one or more of the unique identifiers from the second plurality of beacon transmissions.....80

s. Claims 27/39/81: The [method]/[mobile wireless device]/[computer program product] of claim [1]/[37]/[50] wherein [the]/[each] MAC address [or a respective beacon transmission] is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.....80

t. Claim 28: The method of claim 3 wherein the short range protocol is derived from Bluetooth.....81

u. Claim 46: The mobile wireless device of claim 37 wherein the operations further comprise: using the stored information to determine if the first unique identifier is present among the first selected one or more unique identifiers.....82

v. Claim 58: The computer program product of claim 52 wherein the first further action additionally includes causing the wireless device to receive content from a server based upon information derived from the first unique identifier. 82

TABLE OF CONTENTS
(continued)

Page

w. Claim 60: The computer program product of claim 51, wherein the computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to: after the first or second further action: send information to a server associated with an account for a user of the wireless device, to enable the server to send a message to an email address associated with the account for the user. 82

XIII. CONCLUSION.....83

LIST OF EXHIBITS[1]

Ex. No.	Description
Ex-1001	U.S. Patent No. 11,687,971 ("the '971 Patent)
Ex-1002	Declaration of Dr. Sundeep Rangan
Ex-1003	Curriculum Vitae of Dr. Sundeep Rangan
Ex-1004	Prosecution History of U.S. Patent No. 11,687,971
Ex-1005	JP Patent Publication No. 2005/12973 to Watanabe
Ex-1006	Certified translation of JP Patent Publication No. 2005/12973 to Watanabe ("Watanabe")
Ex-1007	U.S. Patent Publication No. 2007/0030824 to Ribaudo ("Ribaudo")
Ex-1008	PCT Patent Publication No. WO2008/132241 to Behrens ("Behrens")
Ex-1009	PCT Patent Publication No. WO2008/076827 to Krikorian ("Krikorian")
Ex-1010	U.S. Patent Publication No. 2005/00174975 to Mgrdechian ("Mgrdechian")
Ex-1011	Declaration of James A. Proctor, Jr.
Ex-1012	INTENTIONALLY LEFT BLANK
Ex-1013	INTENTIONALLY LEFT BLANK
Ex-1014	INTENTIONALLY LEFT BLANK
Ex-1015	INTENTIONALLY LEFT BLANK

[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. No.	Description
Ex-1016	INTENTIONALLY LEFT BLANK
Ex-1017	INTENTIONALLY LEFT BLANK
Ex-1018	INTENTIONALLY LEFT BLANK
Ex-1019	INTENTIONALLY LEFT BLANK
Ex-1020	Claim Mapping Table
Ex-1021	Bluetooth Specification v.2.0 + EDR (Nov. 2004) ("Bluetooth Specification v.2.0 + EDR")
Ex-1022	Telecom Dictionary (2007) ("beacon channel," "beaconing")
Ex-1023	Webster's New World Telecom Dictionary (2008) ("beaconing")
Ex-1024	Wikipedia, "*Radio beacon*"
Ex-1025	IEEE 802.11 Specification IEEE Standard 802.11, Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications (June 2007) ("Wi-Fi Specification")
Ex-1026	IEEE 802.15 Specification IEEE Standard 802.15.1, Part 15.1: Wireless medium access control and physical layer (PHY) specifications for wireless personal area networks (WPANs) (June 2005) ("Bluetooth Specification")
Ex-1027	US Patent No. 7,000,001 to Lazaridis et al. ("Lazaridis")
Ex-1028	US Patent Publication No. 2009/0239467 to Gulin et al. ("Gulin")
Ex-1029	US Patent Publication No. 2004/0248569 to Kondou et al. ("Kondou")
Ex-1030	US Patent Publication No. 2006/0287813 to Quigley et al. ("Quigley")
Ex-1031	US Patent Publication No. 2005/0130634 to Godfrey ("Godfrey")

Ex. No.	Description
Ex-1032	Wayne Jansen et al., Proximity Beacons and Mobile Device Authentication NISTIR 7200 (June 2005) ("Jansen")
Ex-1033	US Patent Publication No. 2003/0220114 to Langensteiner et al. ("Langensteiner")
Ex-1034	US Patent Publication No. 2008/0261526 to Suresh ("Suresh")
Ex-1035	US Patent Publication No. 2009/0059878 to Tamura ("Tamura")
Ex-1036	US Patent No. 8,411,662 ("Saund")
Ex-1037	US Patent Publication No. 2008/0045181 to Suzuki ("Suzuki")
Ex-1038	PCT Patent Publication No. WO2006/028640 to Briancon et al. ("Briancon")
Ex-1039	Sorte et al., *Service publishing to support an efficient network selection in an 802.11 multi-access environment* (Jan. 2006) ("Sorte")
Ex-1040	US Patent No. 6,928,263 to Blake et al. ("Blake")
Ex-1041	Yeong, J. H., et al., *802.11 a MAC layer: firmware/hardware co-design.*, FOURTH INTERNATIONAL CONFERENCE ON INFORMATION, COMMUNICATIONS AND SIGNAL PROCESSING, 2003 ("Yeong")
Ex-1042	Huang, L. et al., *Enhancing wireless location privacy using silent period*, IEEE WIRELESS COMMUNICATIONS AND NETWORKING CONFERENCE, (Vol. 2, pp. 1187-1192) (Mar. 2005) ("Huang")
Ex-1043	IEEE 802 Specification IEEE Standard 802: IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture (Mar. 2002) ("IEEE 802 2002")
Ex-1044	IEEE 802 Specification IEEE Standard 802.11g, Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications, Amendment 4: Further Higher Data Rate Extension in the 2.4 GHz Band (June 2003) ("IEEE 802.11g")

Ex. No.	Description
Ex-1045	IEEE 802 Specification IEEE Standard 802.15.4, Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low-Rate Wireless Personal Area Networks (LR-WPANs) (Oct. 2003) ("IEEE 802.15.4")

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Petitioner") request *inter partes* review ("IPR") of Claims 1-10, 12-16, 18-19, 22-31, 34-44, 46, 48-62, 64-68, 72, and 75-83 of U.S. Patent No. 11,687,971 ("the '971 Patent") (Ex-1001), currently assigned to Secure Communication Technologies, 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. and Samsung Electronics America, Inc.

Related Matters: PO has asserted the '971 Patent against Petitioner in *Secure Communication Technologies, LLC v. Samsung Electronics Co., Ltd., et al.*, No. 2:24-cv-484 (E.D. Tex.) ("Samsung litigation").

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- ommsamsungsecurecommunicationsedtx@omm.com

III. FEE AUTHORIZATION

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. LA500639.

IV. GROUNDS FOR STANDING

Petitioner certifies that the '971 Patent is available for review, and Petitioner is not barred or estopped from requesting review.

V. PRECISE RELIEF REQUESTED

Petitioner requests review and cancellation of Claims 1-10, 12-16, 18-19, 22-31, 34-44, 46, 48-62, 64-68, 72, and 75-83 as unpatentable based on the following grounds, supported by a declaration from Dr. Rangan. Ex-1002 ¶¶1-63; Ex-1003.

Ground	Summary
1	Claims 1, 12-13, 15, 29-31, 34, 36, 50, 56, 61, 64-65, 67, and 80 are obvious over Watanabe (Ex-1006) in view of Ribaudo (Ex-1007)

Ground	Summary
2	Claims 2-10, 14, 16, 18-19, 22-28, 35, 37-44, 46, 48-49, 51-55, 57-60, 62, 66, 68, 72, 75-79, and 81-83 are obvious over Watanabe in view of Ribaudo and Behrens (Ex-1008)

VI. THE CHALLENGED PATENT

The '971 Patent relates to techniques for mobile wireless devices (e.g., cellular phones) in proximity with one another to exchange information utilizing both a short range, first wireless capability and a second wireless capability that allows the devices "to communicate with a central server via the Internet." Ex-1001, 1:49-63. The '971 Patent concedes that conventional cellular phones already had access to both "wide area" cellular connection between the device and a central server, and short-range "Bluetooth" "peer to peer" capability. Ex-1001, 1:11-36. The '971 Patent proposes combining these two wireless capabilities to broker the exchange of information between two wireless devices. *Id.*, 1:51-56.

As shown in Figure 1 below,[2] "a central server 100 [red] is connected to devices 106 and 108" (blue) through "wide area wireless links 104 and 103 respectively" (green), via a combination of the Internet and a cellular network. Ex-1001, 3:44-55, Fig. 1 (annotated). The devices are also able to communicate directly with each other via "a short range wireless link 107" (yellow). *Id.*, 4:36-47.

[2] Throughout, emphasis and annotations are added unless otherwise specified.

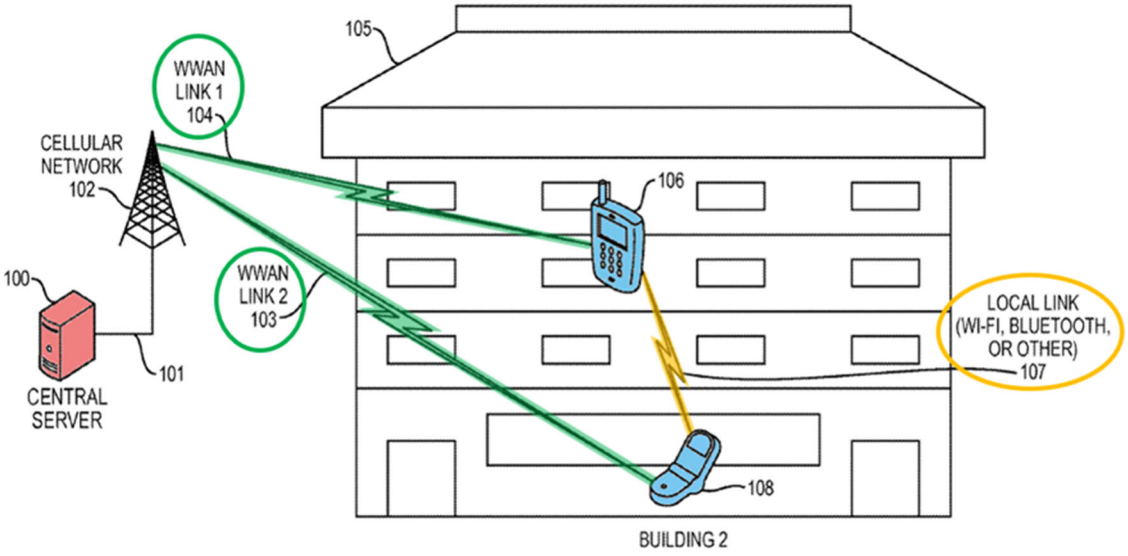


Figure 1

The '971 Patent uses the concept of "beacon service" transmissions to facilitate communications between nearby devices over the short range link first, before establishing communications using a long range, cellular link. Ex-1001, 1:49-67. As shown in Figure 6 below, the beacon transmissions include MAC address, the basic service set identifier (BSSID), and ad-hoc network name (SSID), where "one or both of the BSSID and the SSID may be used to indicate these particular beacons are associated with a [given] service." *Id.*, 8:25-38, Fig. 6 (annotated); Ex-1002 ¶¶64-66.

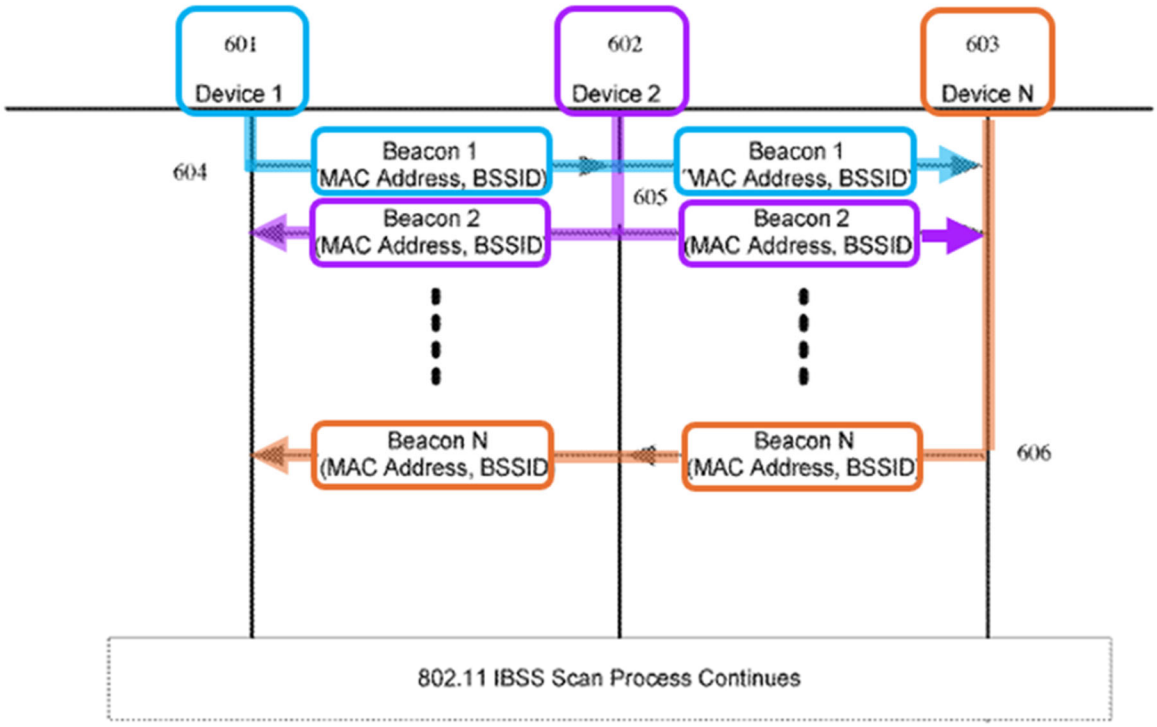


Figure 6 - 802.11 IBSS Beacon Process

VII. PROSECUTION HISTORY OF THE '971 PATENT

The '971 Patent was filed September 12, 2022, as a continuation of a series of patents, the earliest of which was filed on February 3, 2009. The '971 Patent also claims priority to provisional application Nos. 61/095,359 and 61/095,001, filed on September 8, 2008 and September 9, 2008, respectively.

The prior art combinations and arguments in this Petition were not before the PTO during prosecution. Ex-1004; Ex-1002 ¶¶67-70.

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 electrical engineering, computer science, computer engineering, or a related field, and two-to-three years of experience in the research, design, development, or testing of wireless data communication systems, with additional education substituting for experience and vice versa. Ex-1002 ¶¶25-27.

IX. PRIORITY DATE

For purposes of this proceeding only, Petitioner applies the earliest alleged priority date of the '971 Patent: September 8, 2008.[3] Accordingly, pre-AIA 35 U.S.C. §103 applies and the '971 Patent was never eligible for PGR.

X. CLAIM CONSTRUCTION

Petitioner interprets the claims according to *Phillips*. 37 C.F.R. §42.100(b). To resolve this Petition, Petitioner does not believe that any term requires express construction.[4] CTPG, 44; Ex-1002 ¶71.

[3] Petitioner respectfully reserves the right to challenge the priority date in other proceedings.

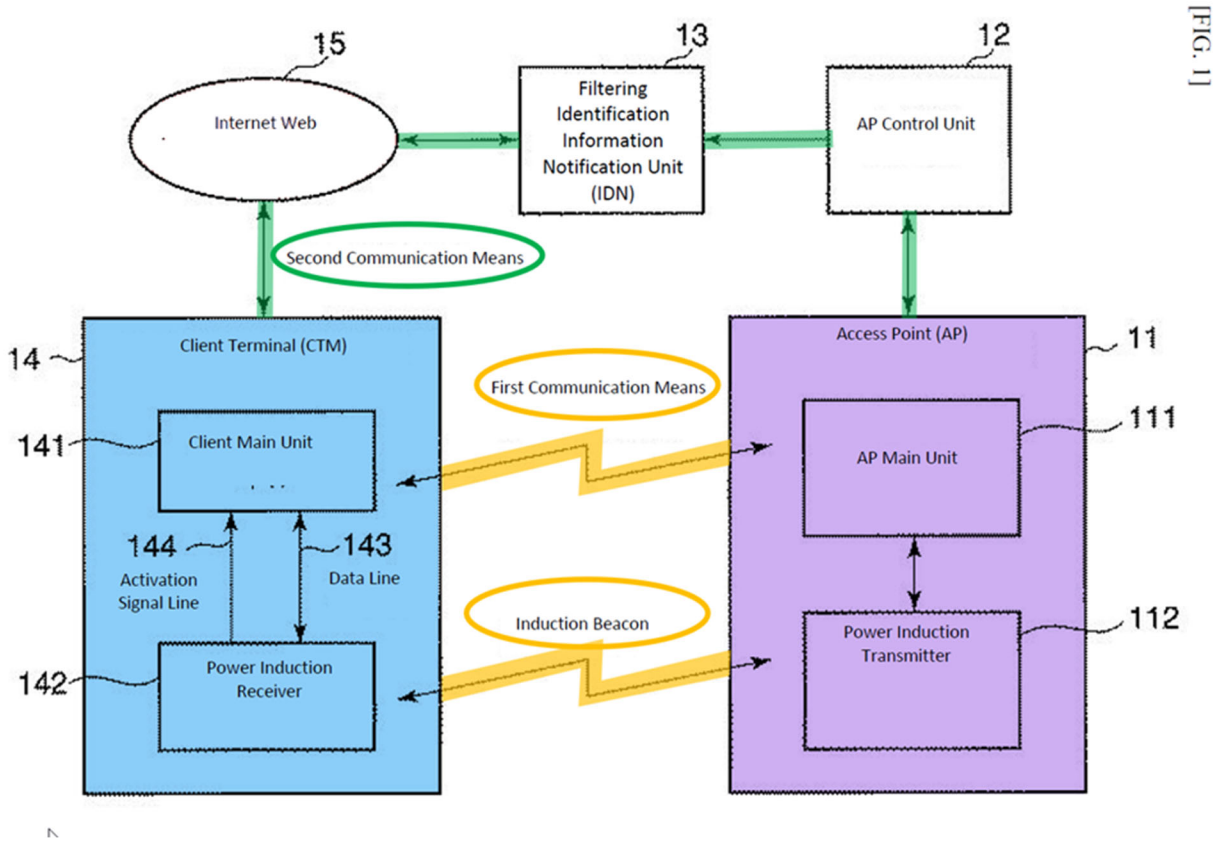
[4] The Samsung litigation is in its infancy and claim construction proceedings have not yet begun. Petitioner respectfully reserves all rights to raise claim construction and other arguments in district court and will request leave to submit the district court's claim construction as soon as it becomes available. Additionally, should PO raise express or implied claim construction arguments in its Preliminary Response, Petitioner will respectfully seek a Preliminary Reply to respond. Consolidated Trial Practice Guide (CTPG), 44-45.

XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART

A. Watanabe (Ex-1005, Ex-1006)

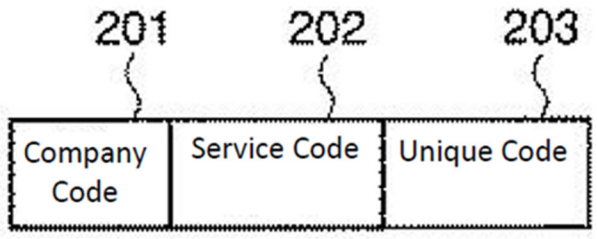
Watanabe (JP Patent Publication No. 2005/12973) was published January 13, 2005 and is prior art to the '971 Patent under 35 U.S.C. §102(b). Ex-1002 ¶¶72-76. Watanabe citations herein are to the certified English translation of Ex-1005, attached as Ex-1006.

Watanabe teaches a wireless communication system that "reduce[s] power consumption by a mobile terminal when not communicating with an access point" ("AP"). Ex-1006, Abstract. As shown in Figure 1 below, "client terminal 14" (blue) "communicates with an electronic information device (e.g., server), not illustrated, connected to the network via the [AP] 11" (purple). Ex-1006 ¶¶12, 53, Fig. 1 (annotated). "Each of the [APs] 11 has an AP main unit ... 111 as a first communication means" (yellow) "for [short or medium-distance] wireless communication (data communication) with the client terminal 14" (i.e., mobile device). Ex-1006 ¶¶14, 27. Client terminal 14 also has a "second communication means" (green) for communicating, through internet 15. Ex-1006 ¶26.



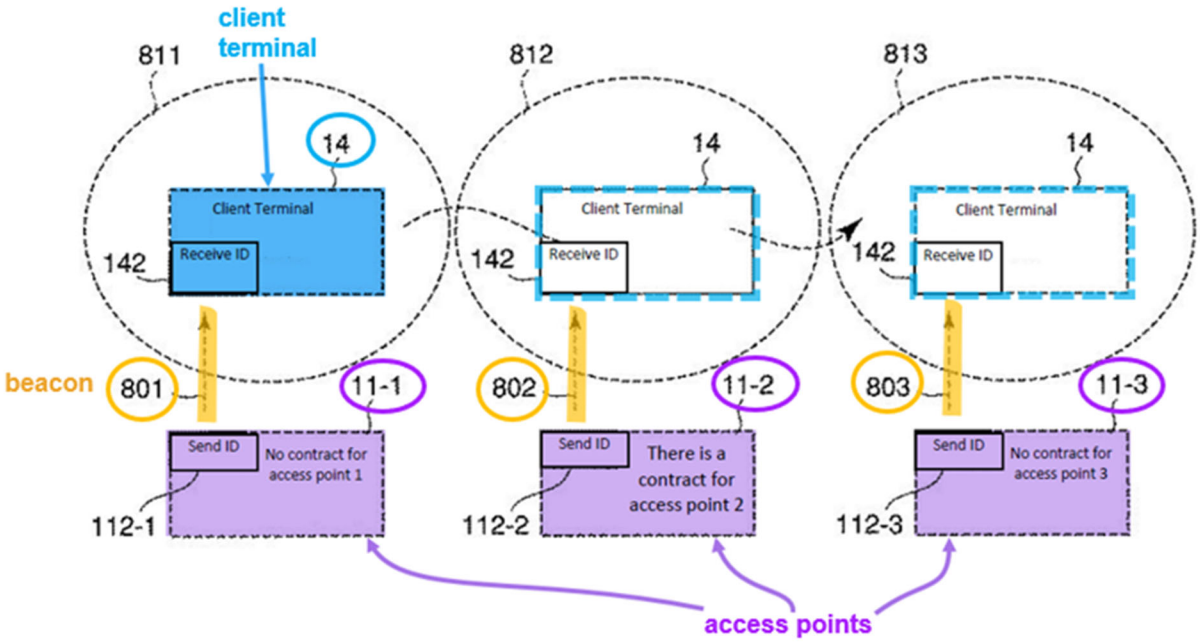
As Watanabe explains, each AP 11 "generates an induction ***beacon*** (power supply signal) that uses the first communication means to supply power" and report "transmitter identification information." Ex-1006 ¶¶14, 49. Transmitter identification information includes: a "company code 201 indicating the service provider," a "service code 202 indicating the type of service that can be provided via that [AP]," and "a unique code 203 unique to that power induction transmitter." *Id.*, ¶15, Fig. 2.

[FIG. 2]



"When the power induction receiver 142 of a client terminal 14 receives the beacon, the transmitter identification information included therein is extracted and compared to identification information for filtering that has been set in advance," and, "[i]f the comparison result is a match, the client main unit 141 is started up." Ex-1006 ¶47.

Watanabe's wireless system is illustrated in Figure 8 (below), where a trio of APs 11-1, 11-2, and 11-3 (purple) "transmit induction beacons 801, 802, and 803" (yellow) "to provide a power supply to the client terminal 14" (blue) "at locations within the areas [811, 812, and 813] that are covered by each" AP. Ex-1006 ¶49.



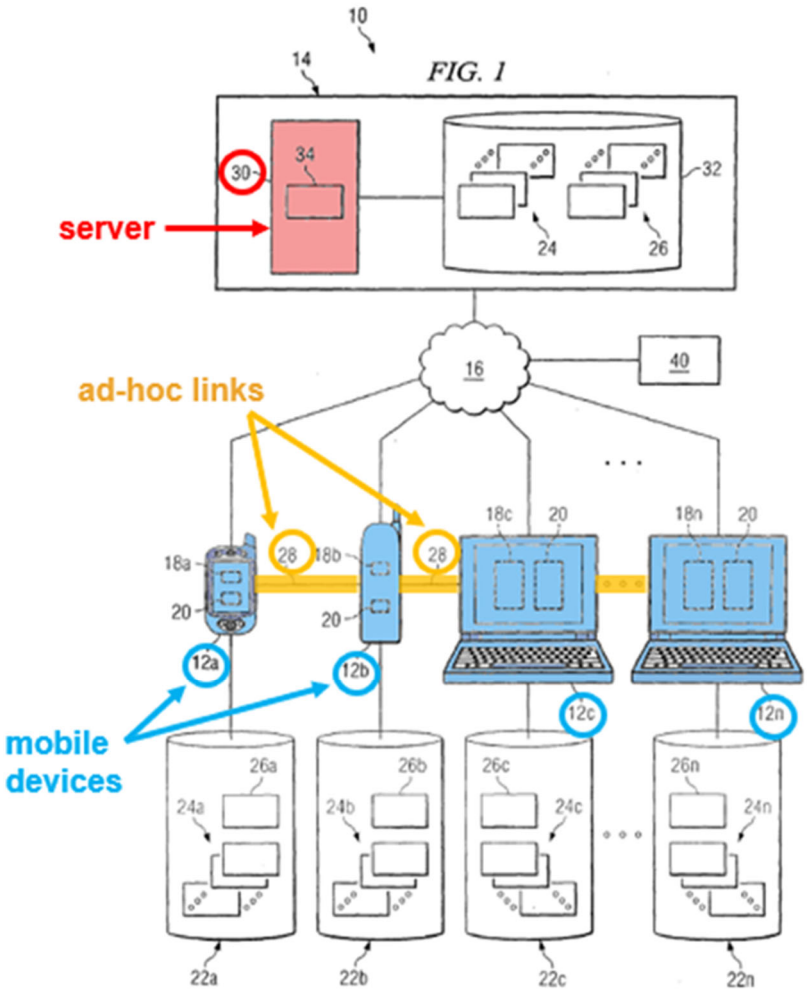
B. Ribaudo (Ex-1007)

Ribaudo (U.S. Patent Publication No. 2007/0030824) was published on February 8, 2007 and is prior art under §102(b). Ex-1002 ¶¶77-80.

Ribaudo teaches "a system and method for providing communication services to mobile device users incorporating proximity determination." Ex-1007 ¶¶2, 8. Specifically, "when the user is in proximity to another user, the user's mobile device detects the presence of the other user's mobile device, receives an identifier associated with the detected other user, and compares the received identifier with the pre-processed match data stored on the user's mobile device to determine whether the other user is one of the user's predetermined matches." Ex-1007 ¶6.

Ribaudo's system, illustrated in Figure 1 below, "includes one or more mobile devices 12" (blue) with "links 28" (yellow) indicating "ad-hoc connections between

[the] devices," "a data center 14" that "includes a server system 30" (red), "and a network 16" that connects the mobile devices to the server. Ex-1007 ¶¶15, 34, 66, Fig. 1.



As Ribaudo explains, "a user (e.g., of mobile device 12a) may be associated with one or more client IDs, which may identify the user publicly," which "may be the unique MAC address[es] of the Wi-Fi NIC of the user's mobile device[s] 12." Ex-1007 ¶68. In operation, the mobile device "may beacon data such as the client ID of the user associated with [the] mobile device" (Ex-1007 ¶57) and an SSID of a

proprietor of system 10. Ex-1007 ¶123. Moreover, "[t]he unique MAC address of mobile device 12a may be beaconed when the BLUETOOTH interface of mobile device 12a is active." Ex-1007 ¶157.

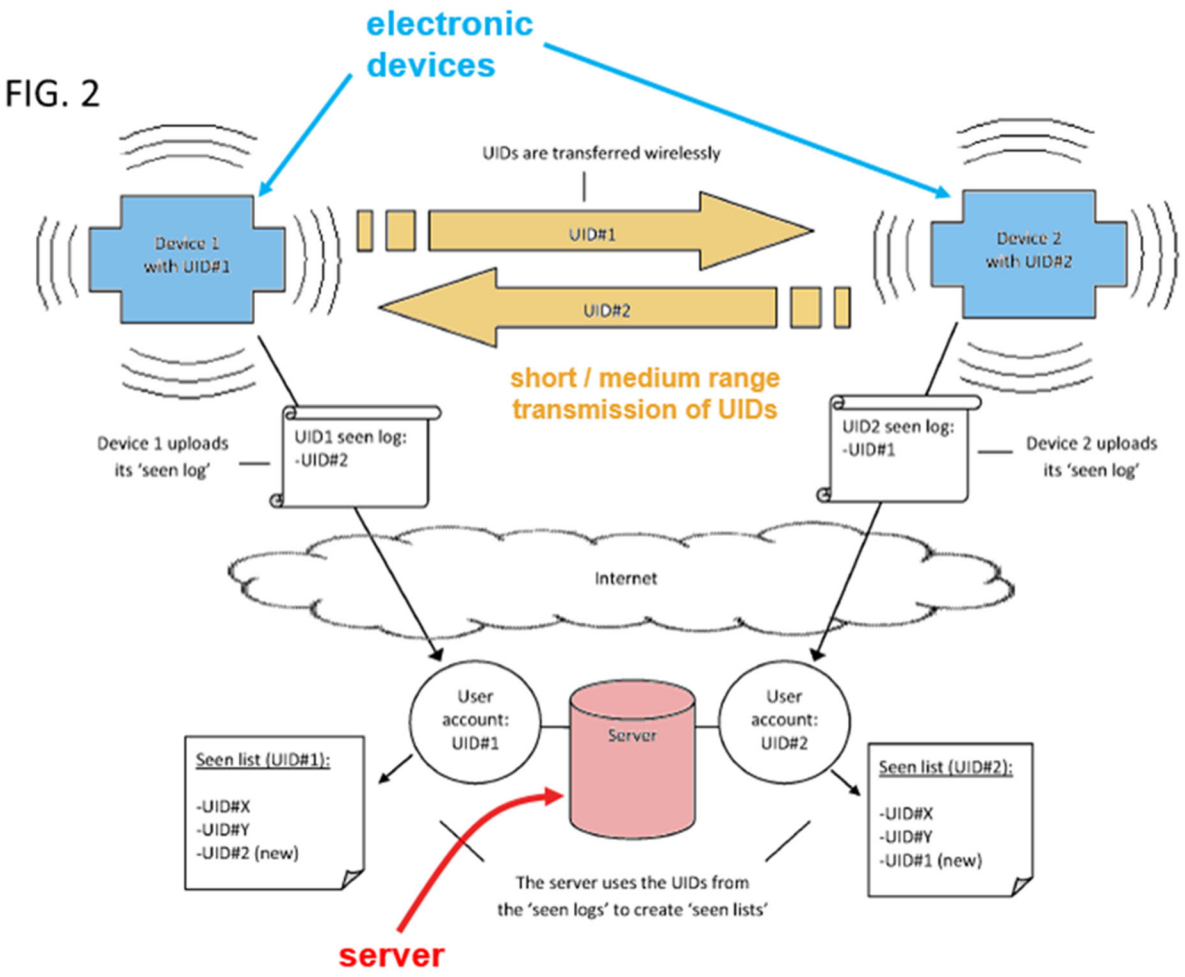
C. Behrens (Ex-1008)

Behrens (PCT Patent Publication No. WO2008/132241) was filed as a PCT application on April 30, 2008, designating the United States, published in English November 6, 2008, and is prior art under §102(e). Ex-1002 ¶¶81-83.

Behrens teaches portable electronic devices that "continuously/repeatedly transmit" and scan for "unique identifiers (UID) via non-directed wireless radio frequency transmission" in order to establish social networks. Ex-1008, Title, 11:1-5. The UID "contains information for identifying the device (and thus its user)." Ex-1008, 6:6-8. Specifically, the UID "may consist of or include a MAC (media access control) address, Bluetooth Device Address (i.e. BD_ADDR), or other unique or quasi-unique identifier." Ex-1008, 11:21-26. Behrens also teaches that it "may even allow a user to have multiple or changing UIDs and, therefore, different online identities," which "may also be linked to a single user account," where the user could manage them. Ex-1008, 23:1-5.

Figure 2 below, a schematic diagram of Behrens' method, shows mobile devices (blue) in communication with a server (red), where the "two devices send[] out UIDs" via short- and medium range transmission (yellow). Ex-1008, Fig. 2.

FIG. 2



XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS

A. Ground 1: Claims 1, 12-13, 15, 29-31, 34, 36, 50, 56, 61, 64-65, 67, and 80 are obvious over Watanabe in view of Ribaudo.

1. A POSITA would have been motivated to combine Watanabe's teachings with Ribaudo's teachings and would have had a reasonable expectation of success.

A POSITA would have been motivated to combine the teachings of Watanabe and Ribaudo and had a reasonable expectation of success in doing so because each relates to detecting nearby wireless devices and establishing communications using

both ad-hoc (e.g., WiFi or Bluetooth) and cellular network. Ex-1006, Abstract; Ex-1007, Abstract, ¶18; Ex-1002 ¶¶84-85.

Watanabe teaches that APs "11-1, 11-2, and 11-3 either continuously or periodically transmit induction beacons 801, 802**,** and 803." Ex-1006 ¶49. The beacons are transmitted using Bluetooth. Ex-1006 ¶¶14, 27. The induction beacons include "a company code that indicates the service provider that has installed and controls the [AP] 11, a service code that indicates the types of services provided by the [AP] 11, and a unique code that is unique to the power induction transmitter 112 of that [AP] 11." Ex-1006 ¶49. Watanabe further teaches that "the transmitter identification information may have a field for embedding information other than the information set forth above." Ex-1006 ¶19.

Watanabe also includes various teachings related to a MAC address.[5] And a POSITA would have been motivated to include the MAC address in the transmitter identification information in Watanabe's beacon transmission in light of Ribaudo. Ribaudo teaches a wireless communication system in which nearby devices transmit beacons to each other. Ex-1007 ¶6. Ribaudo further teaches that its devices "may beacon data such as the client ID of the user" (Ex-1007 ¶57) and an SSID of a

[5] For example, "Each AP control unit 12 associates, and controls the storing of, individual identifiers, ***such as MAC addresses***, or the like, that are assigned to each of the associated [APs] 11." Ex-1006 ¶22.

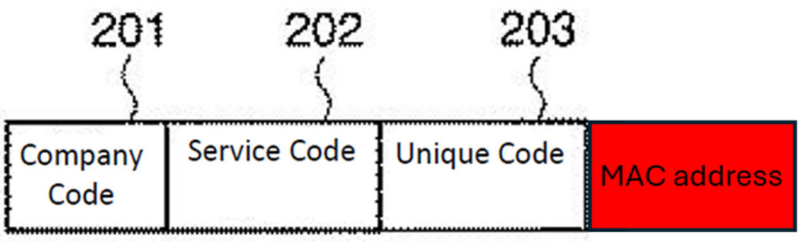
wireless network (Ex-1007 ¶123). Additionally, "[t]he unique MAC address of mobile device 12a may be beaconed when the BLUETOOTH interface of mobile device 12a is active." Ex-1007 ¶157. This would have been motivated by, for example, a POSITA's desire to comply with the Bluetooth standard, which states that each Bluetooth address (i.e., BD_ADDR) is created in accordance with the IEEE standard for MAC addresses. Ex-1021, 66 ("Each Bluetooth device shall be allocated a unique 48-bit Bluetooth device address (BD_ADDR)," which "shall be obtained from the IEEE Registration Authority."), 185, 773; *see also* Ex-1043, 20-21 (describing the "standard representation of a 48-bit LAN MAC address"). Moreover, a POSITA would have been aware that Bluetooth systems broadcast the MAC address. For example, the '971 Patent itself acknowledges that "the MAC address is always broadcast in any operation of a Bluetooth or Wi-Fi link" to "provide for an additional level of security for the device." Ex-1001, 8:42-46. Thus, a POSITA would have understood that Watanabe's broadcast message over Bluetooth should include a MAC address that complies with the Bluetooth standard, consistent with the express teachings of Ribaudo. Ex-1002 ¶86.

A POSITA would also have been motivated to include Watanabe's MAC address in the beacon, as taught by Ribaudo, because a MAC address was a well-known identifier assigned to a network interface controller for use as a network address in wireless communication systems by 2008. Indeed, MAC addresses have

long been used in various wireless networking technologies and are crucial for network communications. Ex-1002 ¶¶87-88 (citing, e.g., Exs.-1044-1045).

In the Watanabe-Ribaudo combination, the beacon would thus have at least the following elements, shown in Figure 2' below (modified to include a MAC address (red)):

[FIG. 2']



Moreover, Ribaudo specifically teaches that including a MAC address in the beacon has certain benefits, such as, for example, "shield[ing] the true identity of the user, for privacy purposes." Ex-1007 ¶¶46, 68. Thus, a POSITA would have been motivated to include Watanabe's MAC address in the beacon with the company code, service code, and unique code to identify and facilitate communication with the proper AP to achieve these security benefits. Ex-1002 ¶89.

A POSITA would have had a reasonable expectation of success in combining the teachings of Watanabe and Ribaudo. Ex-1002 ¶90. Both describe receiving beacon transmissions comprising identification information associated with a nearby AP (or other device) at a mobile device using Bluetooth, receiving stored

information relating to an entity associated with the identification information from a server using the Internet, comparing the beaconed identification information to preset identification information stored at the mobile device to determine if it matches, and taking further action relating to the stored information if it matches. Ex-1006 ¶¶46-55; Ex-1007 ¶¶6-7. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations. Ex-1002 ¶90.

2. Independent Claims 1 and 50[6]

a. Element 1[pre]: A method comprising:

Element 50[pre]: A computer program product for installation in a non-volatile memory in a wireless device, the computer program product comprising computer program instructions that, when read from the non-volatile memory, and then executed by one or more processors in the wireless device, cause the wireless device to:

Watanabe in view of Ribaudo ("Watanabe-Ribaudo") teaches[7] the preamble,

[6] Independent Claims 1, 37, and 50 contain substantially similar limitations with Claim 37 adding additional limitations, as discussed in Ground 2. Substantially similar claim elements are discussed together in the element-by-element analysis. *See* Ex-1020. Any meaningful differences are individually identified and discussed.
[7] Petitioner uses the term "teaches" to include both express teachings and those fairly suggested to a person of ordinary skill in the art. *In re Baird*, 16 F.3d 380, 383 (Fed. Cir. 1994); *In re Keller*, 642 F.2d 413, 425 (CCPA, 1981) ("The test for obviousness is...what the combined teachings of the references would have suggested to those of ordinary skill in the art." (citations omitted)).

to the extent it is limiting. Both teach wireless devices configured to communicate with other devices in proximity. For example, Watanabe's Figures 7-8 depict "a sequence diagram for explaining the operation of the client terminal" of Watanabe's wireless communication system. Ex-1006 ¶63. And Ribaudo teaches mobile devices 12 that "each have an associated memory module 22," which includes "any suitable memory, database, or other data storage arrangement" (Ex-1007 ¶32), wherein "each include any suitable combination of hardware, software, and firmware to provide the functionality described" including "applications 20 that are based on one or more programming languages" to "facilitate communication with other mobile devices 12" and the data center. Ex-1007 ¶19. A POSITA would have understood the memory to be non-volatile memory so that software or firmware program instructions are not lost when the device loses power. Ex-1002 ¶¶91-92.

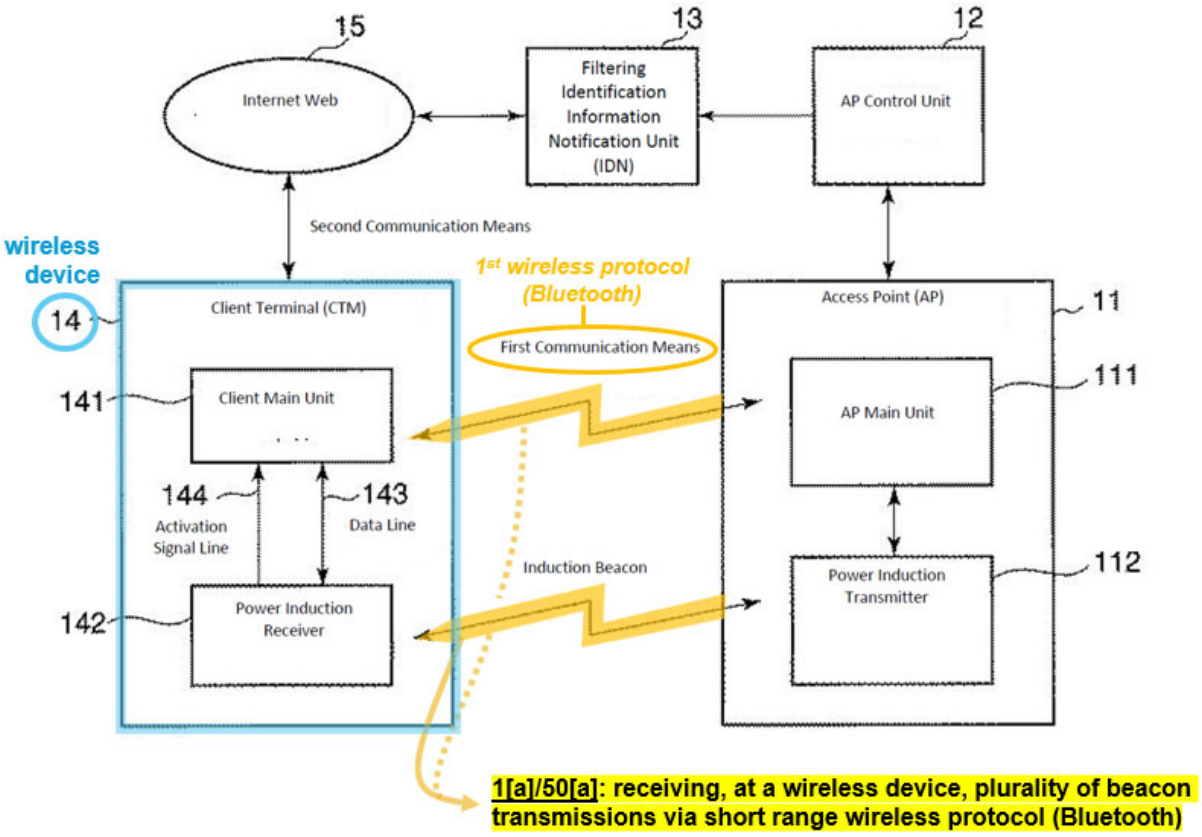
b. Elements 1[a]/50[a]: [receiving, at a wireless device,]/[process a first plurality of beacon transmissions, received at the wireless device] via a [short range]/[Bluetooth] wireless protocol, [a first plurality of beacon transmissions,] each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not otherwise accessible to the wireless device utilizing the [short range]/[Bluetooth] wireless protocol;

Watanabe-Ribaudo teaches Elements 1[a]/50[a]. Ex-1002 ¶¶93-94.

(1) Receiving at a wireless device a first plurality of beacon transmissions via Bluetooth

Watanabe teaches that "[e]ach of the [APs] 11 has an AP main unit (AP-side data communication unit) 111 as a first communication means for wireless communication (data communication) with the client terminal 14." Ex-1006 ¶14. Client terminal 14 is a "wireless device." The first communication means includes "short- and medium-distance wireless communication devices," such as "***wireless communication devices based on Bluetooth***." Ex-1006 ¶27. Watanabe further teaches that "power induction transmitters 112-1, 112-2, and 112-3 of" APs "11-1, 11-2, and 11-3 either ***continuously or periodically transmit induction beacons*** 801, 802, and 803 to provide a power supply to the client terminal 14 at locations within

the areas that are covered by each." Ex-1006 ¶49. As shown in annotated Figure 1 below, client terminal 14 "has a power induction receiver 142 that is started up by ***receiving a beacon*** from" the power induction transmitters. Ex-1006 ¶26.



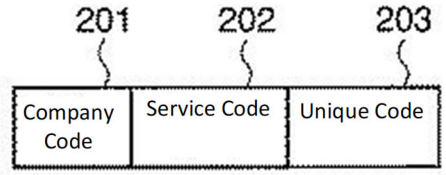
Watanabe further teaches that "each induction beacon includes … a unique code that is unique to the power induction transmitter 112 of that [AP] 11." Ex-1006 ¶49. For example, "the identification information 'C1:S1:U1' is included in the induction beacon sent from [AP] 11-1." When client terminal 14 enters area 811, for example, which is covered by AP 11-1, power induction receiver 142 receives induction beacon 801 and compares the transmitter identification information such

as "C1:S1:U1" included therein, respectively, to the filtering identification information. Ex-1006 ¶¶51-52. Induction beacon 801, which is continuously or periodically transmitted, corresponds to the recited "first plurality of beacon transmissions." Ex-1002 ¶95. Client terminal 14 is thus a wireless device that receives Bluetooth beacon transmissions.

(2) Each beacon transmission includes: a MAC address

Watanabe teaches that "[e]ach AP control unit 12 associates, and controls the storing of, individual identifiers, such as MAC addresses, or the like, that are assigned to each of the associated [APs] 11." Ex-1006 ¶22. Watanabe further teaches that the transmitter identification information provided in the beacon transmissions includes a number of identifiers, as shown in Figure 2 below. Ex-1006 ¶15, Fig. 2.

[FIG. 2]

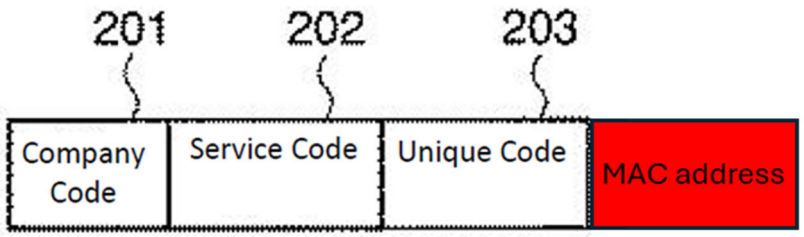


As discussed in Section XII.A.1, a POSITA would have been motivated to add the MAC address to the transmitter identification information in light of Ribaudo's disclosure that the "unique MAC address of mobile device 12a may be

beaconed when the BLUETOOTH interface of mobile device 12a is active." Ex-1007 ¶157. And Ribaudo teaches that including a MAC address in the beacon transmission has certain benefits, such as for example, "shield[ing] the true identity of the user, for privacy purposes." Ex-1007 ¶¶46, 68; Ex-1002 ¶¶96-97. Indeed, the '971 Patent itself acknowledges that "the MAC address is always broadcast in any operation of a Bluetooth or Wi-Fi link" to "provide for an additional level of security for the device." Ex-1001, 8:42-46.

In the Watanabe-Ribaudo combination, the beacon would thus have at least the following elements, shown in Figure 2' below (modified to include a MAC address (red)):

[FIG. 2']

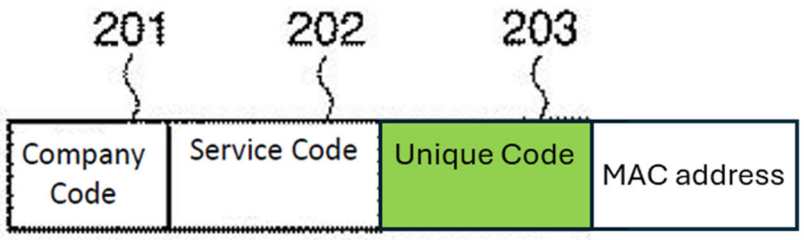


And the transmitter identification information provided in Watanabe's beacon transmissions would include a MAC address code along with the other identifier codes. Ex-1002 ¶98. For example, the transmitter identification information would include "C1:S1:U1[:**M1]**," where M1 is the MAC address code. *Id*.

(3) Unique identifier

Watanabe teaches that the transmitter identification information provided in the beacon transmissions also includes "a unique code 203 unique to that power induction transmitter 112," which "can also be used to identify the [AP] 11 individually." Ex-1006 ¶15. In the Watanabe-Ribaudo combination, the unique identifier is shown in Figure 2' (green):

[FIG. 2']



Unique code 203 corresponds to the recited "unique identifier" because it is unique to the power induction transmitter and may identify the AP, but does not directly identify a location of the transmitter. Ex-1002 ¶¶99-100. The '971 Patent specification does not describe what "does not directly identify a location of a beacon transmitter" means in terms of the unique identifier—this phrase only appears in the claims. *Id.* But Watanabe explains that "a unique code 203 [is] unique to that power induction transmitter." Ex-1006 ¶15. For example, unique code U1 is beaconed by the power induction transmitter for AP 11-1. U1 is thus unique to the power induction transmitter by naming convention (U1 corresponds to 11-1, etc.). Other

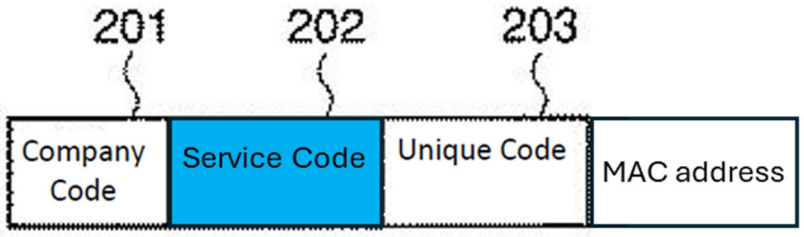
than this naming convention, Watanabe does not suggest, nor would it have made sense to a POSITA, that the unique codes contain any additional information that would directly identify a location of a beacon transmitter such as if the AP is relocated but still uses unique code U1. Ex-1002 ¶100.

(4) Beacon service identifier

(a) **Identifies the unique identifier is relevant to stored information associated with a wireless beacon service**

Watanabe teaches that the transmitter identification information provided in the beacon transmissions also includes "[a] service code 202 indicating the type of service that can be provided via that [AP] 11." Ex-1006 ¶15. In the Watanabe-Ribaudo combination, the beacon service identifier is shown in Figure 2' (blue):

[FIG. 2']



Watanabe's service code 202 corresponds to the recited "beacon service identifier" because it identifies that the unique identifier is relevant to stored information associated with a wireless beacon service. Ex-1002 ¶¶101-102. For example, Watanabe explains that its "service code" is "indicating the type of service

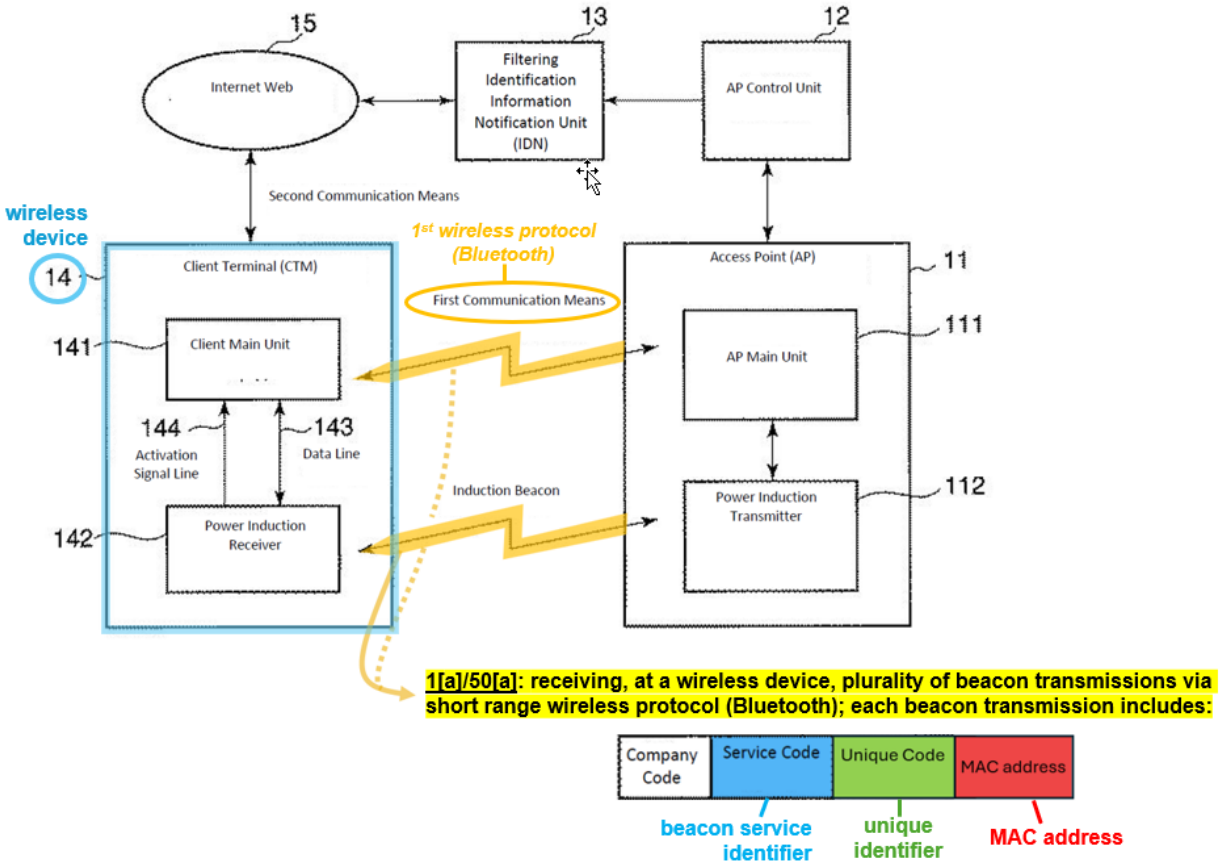
that can be provided via that [AP] 11." Ex-1006 ¶15. Moreover, AP control units 12 "***stores and controls, in mutual association, the transmitter identification information and AP identifier*** [i.e., unique identifier] that are included therein." Ex-1006 ¶31. The service code thus indicates that the unique identifier is relevant to stored information associated with the available services. Ex-1002 ¶102.

(b) **Stored information is not otherwise accessible utilizing Bluetooth**

The '971 Patent specification does not describe what "the stored information is not otherwise accessible to the wireless device" means in terms of the beacon service identifier—this phrase only appears in the claims. *Id.* But Watanabe teaches that "a group ID is set to the [AP] on the basis of a service provider with a relationship to that [AP], and a field for representing the group ID is provided in the transmitter identification information so that ***data communication can be carried out with only the [AP] with a relationship to a specific service provider***." Ex-1006, Cls. 10-11; *see also id.* ¶18. A POSITA would thus have understood that the stored information is not otherwise accessible to the wireless device utilizing Bluetooth. Ex-1002 ¶103. Watanabe explains why the stored information is only accessible in this manner, because: "the first radio portion of the client terminal 14 does not carry out wireless communication with an [AP] 11 for which wireless communication is not allowed (one for which there is no contract), this not only can achieve a reduction

in unnecessary radio traffic and a reduction in power consumption, but can extend battery life as well." Ex-1006 ¶59; *see also id.* ¶16. Moreover, during prosecution of the '971 Patent, Applicant added this phrase to the independent claims in a Preliminary Amendment (Ex-1004, 93-116) and explained that the stored information "is not accessible using the short range wireless protocol, and instead being provided via the broadcast only beacon transmitters." *Id.*, 114 (citing Ex-1001, 13:1-4, 15:43-51). Watanabe's power induction transmitter 112 is a "broadcast only" device because it "continuously or intermittently (cyclically) generates an induction beacon (power supply signal) … to supply power contactlessly" to client terminal 14. Ex-1006 ¶¶9, 14. A separate power induction receiver at the client terminal receives the beacons over Bluetooth. Ex-1006 ¶9. Thus, as Applicant explained during prosecution, the stored information is not otherwise accessible to the wireless device using Bluetooth. Ex-1002 ¶¶103-106.

In sum, as shown in Figure 1, Watanabe-Ribaudo teaches Elements 1[a]/50[a].



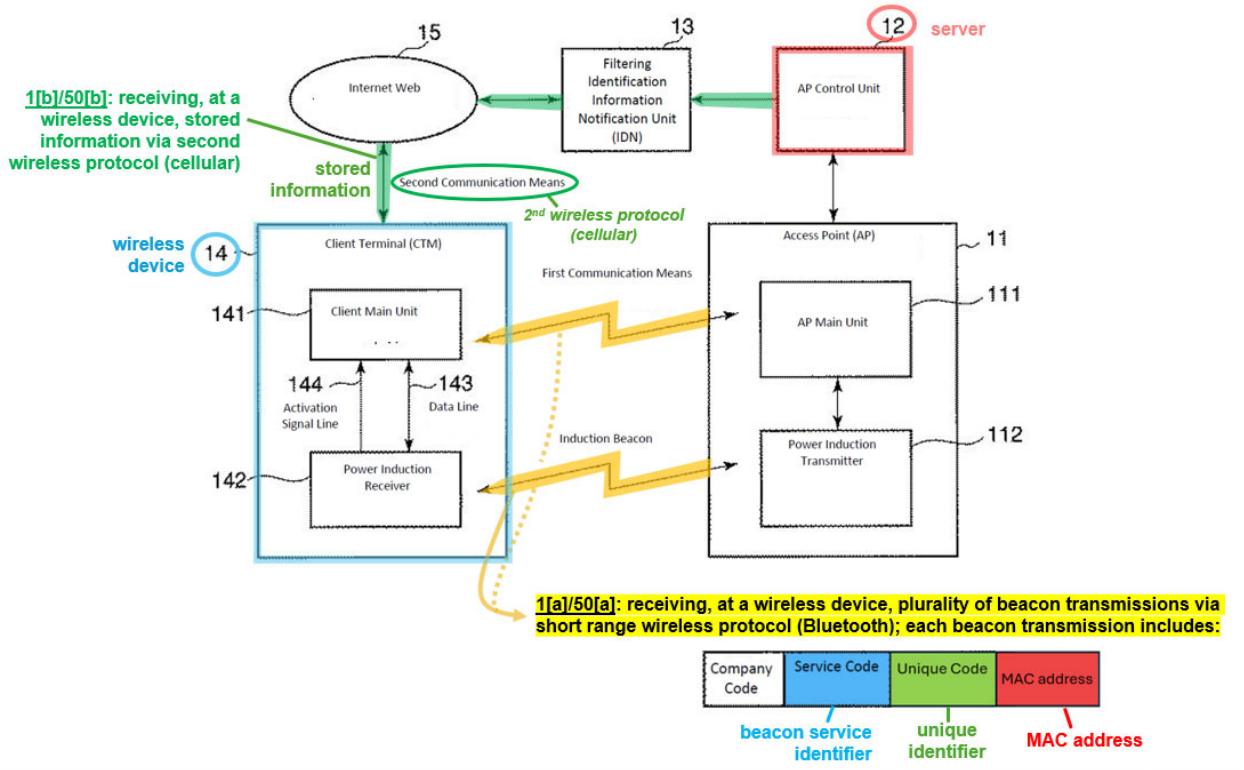
c. Elements 1[b]/50[b]: [receiving, at the wireless device via a second wireless protocol, the stored information from one or more servers,]/[process stored information transferred from one or more servers to the wireless device via a second wireless protocol, wherein] the stored information relat[ing]/[es] to [a particular]/[an] entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the [short range]/[Bluetooth] wireless protocol;

Watanabe-Ribaudo teaches Elements 1[b]/50[b].

(1) Receiving at the wireless device stored information from a server

Watanabe teaches that AP control unit 12 (i.e., the "server"), shown in Figure 1 below, "stores … the transmitter identification information and AP identifier." Ex-

1006 ¶31, Fig. 1. Watanabe further teaches that client terminal 14 (i.e., wireless device) communicates through internet 15 with filtering identification information notification unit 13. Ex-1006 ¶26. Moreover, Watanabe teaches that "unit 13, in response to … a request from a client terminal 14 generates, from information controlled by the AP control units 12, identification information for filtering" relating to client terminal 14. Ex-1006 ¶25. And "the filtering identification information notification unit 13 sends, to the applicable client terminal through the internet 15, the identification information for filtering that has been generated." Ex-1006 ¶33. Accordingly, AP control unit 12 corresponds to the recited "server" and the stored "transmitter identification information and AP identifier" corresponds to the recited "stored information." Ex-1002 ¶¶107-108. Therefore, Watanabe's wireless device receives via the second wireless protocol stored information from the server. *Id*.



(2) Using a second wireless protocol different from Bluetooth

Watanabe teaches that client terminal 14 includes a "second communication means for communicating, through the internet 15, with the filtering identification information notification unit 13" to receive the generated identification information for filtering. Ex-1006 ¶26. "Mobile telephone devices, stationary telephone sets, or physically wired LANs, or the like, are envisioned as the second communication means by which the client terminal 14 accesses the internet 15." *Id.* ¶27. Watanabe's second wireless protocol (using a mobile telephone device to communicate over internet 15) is different from its first wireless protocol (Bluetooth). Ex-1002 ¶109. A POSITA would have understood to implement Watanabe's second wireless

protocol using a known cellular protocol (e.g., CDMA, 3G, LTE). *Id.*; Ex-1007 ¶¶16, 18 (teaching that GSM or CDMA mobile devices receive data from server via network).

(3) Stored information relates to an entity or object associated with a first unique identifier

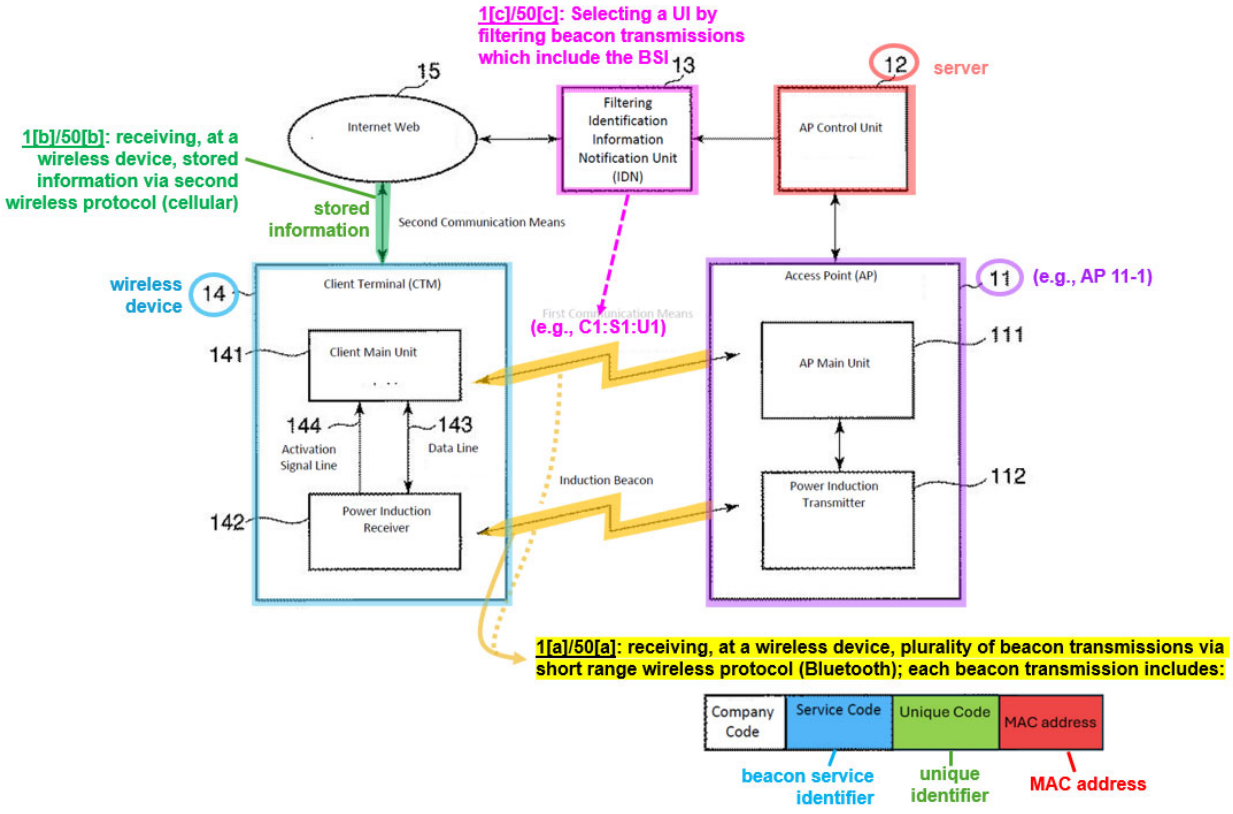
Watanabe teaches that the stored information relates to a particular entity or object associated with a first unique identifier because, as explained in Section XII.A.2.b, Watanabe's "unique code 203" that is beaconed with the transmitter identification information assigned to the AP "can also be used to identify the [AP] 11 individually." Ex-1006 ¶¶10, 15. Watanabe further teaches that "[o]ne [AP] 11 is ordinarily installed for each service provider." Ex-1006 ¶13. Thus, the stored information relates to an entity of object (e.g., Netflix) that provides streaming services using the service provider company (e.g., C1, C2) for the AP. The content service provider (e.g., Netflix) corresponds to the recited "entity or object" associated with the first unique identifier. Ex-1002 ¶¶110-111.

d. Elements 1[c]/50[c]: [causing selection of]/[select] one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service; and

Watanabe-Ribaudo teaches Elements 1[c]/50[c].

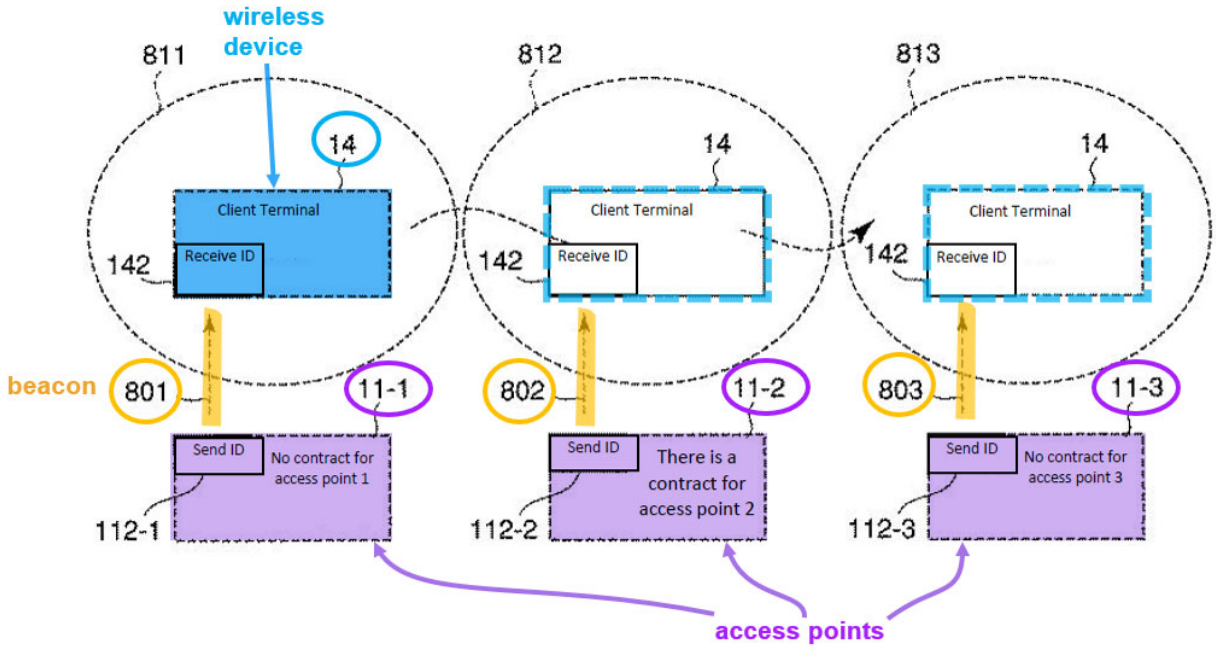
(1) Selecting a unique identifier from the first plurality of beacon transmissions by filtering the beacon transmissions

Watanabe teaches filtering the beacon transmissions. Watanabe's "filtering identification information notification unit 13 selects and combines appropriate codes from the information that has been obtained, to generate identification information for filtering in accordance with the client terminal 14." Ex-1006 ¶41. And the beacon transmitters are filtered to associate beacon transmissions with the device transmitting the beacon. For example, "three [APs] 11-1, 11-2, and 11-3" are "provided by service providers C1, C2, and C3, respectively" (Ex-1006 ¶48); "service codes indicating each of the services" provided by those companies are represented by "S1," "S2," and "S3" (Ex-1006 ¶41); and unique codes for the power induction transmitters of the APs are represented by "U1," "U2," and "U3." Ex-1006 ¶49. Thus, as shown below, "the identification information 'C1:S1:U1' is included in the induction beacon sent from [AP] 11-1, the identification information 'C2:S2:U2' is included in the induction beacon sent from [AP] 11-2, and the identification information 'C3:S3:U3' is included in the induction beacon sent from [AP] 11-3." Ex-1006 ¶49, Fig. 1.



Watanabe teaches selecting unique identifier(s) from the first plurality of beacon transmissions by filtering them. Watanabe describes an example where "the client terminal 14 has a contract with only service provider C2." Ex-1006 ¶48. As shown in Figure 8 below, when client terminal 14 enters into area 812 covered by AP 11-2, "the power induction receiver 142 receives the induction beacon 802 and is started up, and compares the transmitter identification information 'C2:S2:U2,' included therein, to the identification information 'C2:S2' for filtering." Ex-1006 ¶52. Because "the company codes and service codes match, … the power induction receiver 142 determines that the identification information matches" and "transmits

an activation signal to the client main unit 141 through a start line 144, to start up the client main unit 141." Ex-1006 ¶52.



Watanabe further teaches that "power induction transmitters 112-1, 112-2, and 112-3 of [APs] 11-1, 11-2, and 11-3 either continuously or periodically transmit induction beacons 801, 802, and 803 to provide a power supply to the client terminal 14 at locations within the areas that are covered by each." Ex-1006 ¶49. Watanabe thus teaches that a plurality of beacon transmissions may be continuously received from a single AP. Moreover, Watanabe teaches filtering the plurality of beacon transmissions received from the same AP to determine whether the user has a contract to receive the services provided by the AP. Ex-1006, ¶57, Fig. 8; Ex-1002 ¶¶112-114.

(2) Beacon transmissions include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service

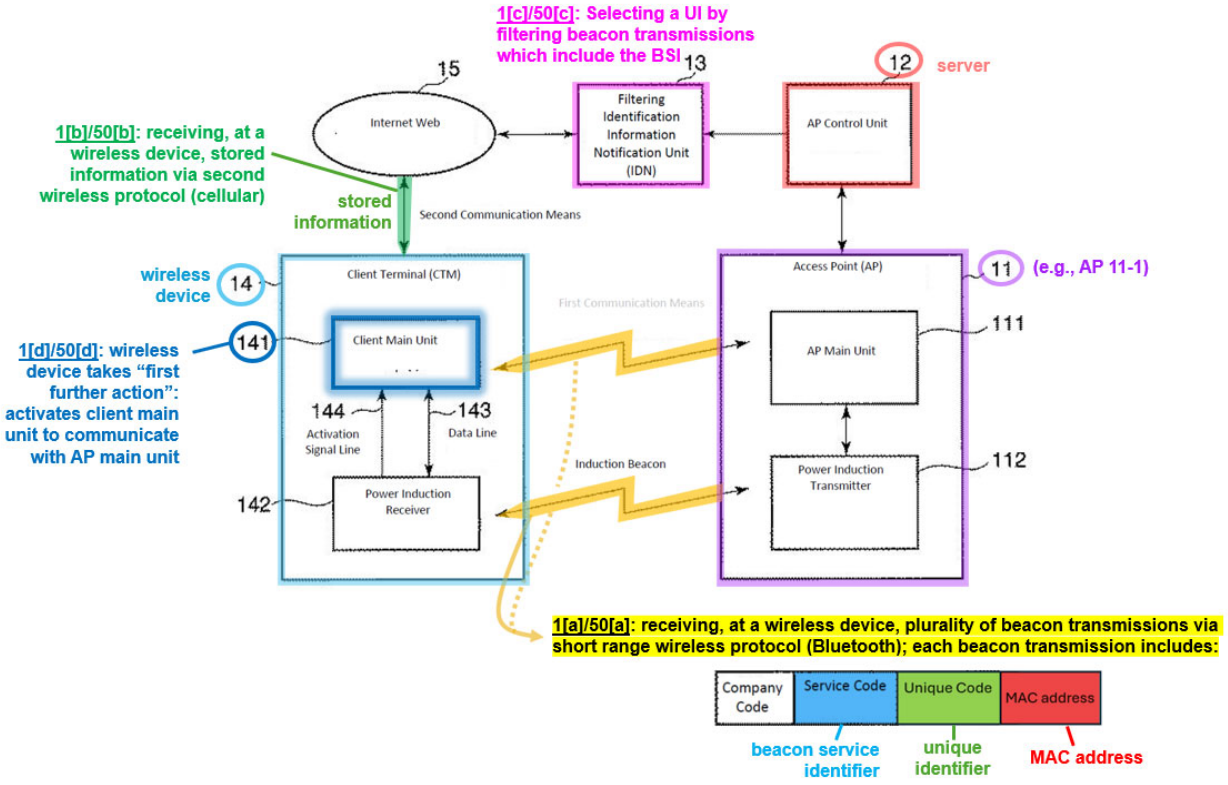
As explained in Sections XII.A.2.b-XII.A.2.c, each of Watanabe's beacon transmissions includes a beacon service identifier (i.e., service codes S1, S2, S3), which identifies a wireless beacon service such as a streaming service like Netflix. Ex-1006 ¶15; Ex-1002 ¶¶115-116. Watanabe's service code thus indicates that a particular received beacon transmission is associated with the particular wireless beacon service associated with that code. *Id*.

e. Elements 1[d]/50[d]: [taking]/[perform a] first further action[, the first further action] relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

Watanabe-Ribaudo teaches Elements 1[d]/50[d].

Watanabe teaches performing a first further action relating to the stored information, if the first unique identifier is present among the selected unique identifier(s). Watanabe teaches that when "power induction receiver 142 of a client terminal 14 receives the beacon, the transmitter identification information included therein is extracted and compared to identification information for filtering that has been set in advance," and, "[i]f the comparison result is a match, the client main unit 141 is started up." Ex-1006 ¶¶47, 52. "When the client main unit 141 is started up in this way," it "establishes a communication channel with AP main unit 111,

through a publicly known scanning method, to initiate data communication … with a server, or the like, of the service provider through the [AP] 11-2." Ex-1006 ¶53, Fig. 1 (below). Activation of the client main unit to initiate data communication with the service provider through the AP corresponds to the recited "first further action" taken with respect to the stored information if the first unique identifier (e.g., U1 in beacon 801) is present among the selected unique identifier(s). Ex-1002 ¶¶117-120.



Thus, Watanabe-Ribaudo renders obvious Claims 1/50.

3. Dependent Claims 12-13, 15, 29-31, 34, 36, 56, 61, 64-65, 67, and 80

a. Claims 12/64: The [method]/[computer program product] of claim [1]/[50] wherein the [taking] first further action [further]/[additionally] includes causing the wireless device[,] to: send the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and [subsequently] receive the stored information in response [thereto].

Watanabe-Ribaudo teaches Claims 12/64.

Ribaudo teaches causing the mobile device to send the unique identifier or information derived from it to the server and receiving the stored information in response. Ribaudo teaches that the "***data center may process the network address*** information received from mobile device 12," which "involves ***comparing the network address information received from mobile device 12*** to network address information received from one or more other mobile devices 12." Ex-1007 ¶175. For instance, "if two mobile devices 12 report having the same MAC address in range, then data center 14 may determine that these two devices are in proximity to one another" and even if they are not using the same network, "the two mobile devices 12 could be notified of one another (e.g., by data center 14) and may be able to communicate with one another, via data center 14." *Id*.

Watanabe teaches that the first further action is related to the first unique identifier, as explained in Section XII.A.2.e. Ex-1002 ¶¶121-123. In the Watanabe-

Ribaudo-Behrens combination, taking first further action additionally includes causing Watanabe's wireless device to send the first unique identifier or information derived from it to the server(s), and receive the stored information in response, as taught by Ribaudo. *Id*.

b. Claims 13/65: The [method]/[computer program product] of claim [1]/[50] wherein the [computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to receive] stored information [is received] at the wireless device from at least one of the one or more servers prior to [the taking]/[performing] of the first further action.

Watanabe-Ribaudo teaches Claims 13/65 for the reasons explained in Sections XII.A.2.c (receiving stored information at wireless device from server relating to entity/object with first unique identifier), XII.A.2.d (selecting unique identifier(s) by filtering), and XII.A.2.e (taking first further action relating to stored information if first unique identifier is present among selected unique identifier(s)). Ex-1002 ¶124.

c. Claims 15/36/67/80: The [method]/[computer program product] of claim [1]/[50] [further comprising]/[wherein the] [computer program instructions][,]/[that,] [when executed by the one or more processors] [in the wireless device, further] [cause the wireless device to]: us[ing]/[e] the stored information to determine if the first unique identifier is present among the [first] selected one or more [of the] unique identifiers [from the first plurality of beacon transmissions].

Watanabe-Ribaudo teaches Claims 15/36/67/80 for the reasons explained in Sections XII.A.2.c (receiving stored information relating to entity/object with first unique identifier), XII.A.2.d (selecting unique identifier(s) by filtering), and XII.A.2.e (taking first further action relating to stored information if first unique identifier is present among selected unique identifier(s)). Ex-1002 ¶125.

d. Claims 29/56: The [method/computer program product] of claim [1/50] wherein the first further action is [additionally] related to receiving advertising information for presentation to a user of the wireless device, based upon the [first] unique identifier, or [based upon] information derived from the first unique identifier.

Watanabe-Ribaudo teaches Claims 29/56.

Ribaudo teaches receiving advertising information for presentation to a user of the wireless device. Ribaudo teaches that data center 14 "may collect and store content generated by users of mobile devices 12" such as by associating "personal advertisements, classified advertisements, advertisements, and other suitable content to the MAC addresses and cell tower IDs that the user encounters." Ex-1007 ¶215.

Ribaudo also teaches that "advertisements, personal advertisements, and classified advertisements may be served on a per wireless access point basis (e.g., a per MAC address basis or per cell tower ID basis)" and "displayed on mobile devices 12 using application 20." Ex-1007 ¶217.

Watanabe teaches that the first further action is based upon the first unique identifier or information derived from it, as explained in Section XII.A.2.e. Ex-1002 ¶¶126-128. In the Watanabe-Ribaudo combination, the first further action is related to receiving advertising information for presentation to the user's wireless device, as taught by Ribaudo, based upon the first unique identifier or information derived from it, as taught by Watanabe. *Id*.

e. Claim 30: The method of claim 1 wherein the first further action includes receiving content from a server based upon information derived from the first unique identifier.

Watanabe-Ribaudo teaches Claim 30.

Watanabe teaches that the first further action (i.e., activating the client device to establish communication with a server of the service provider through the AP) is based upon information derived from the first unique identifier, as explained in Section XII.A.2.e. Ex-1002 ¶¶129-130. A POSITA would have understood that the first further action also includes receiving content from a server because Watanabe

teaches that the client terminal 14 "receive[s], thereafter, the contracted services through the [AP]11." Ex-1006 ¶44.

Ribaudo also teaches retrieving content from a server. Ribaudo teaches that "data center 14 is operable to gather and store information regarding users of mobile devices 12, networks detected by users of mobile devices 12," and "encounters between users of mobile devices 12, and other suitable information." Ex-1007 ¶17. Moreover, "[d]ata center 14 may retrieve appropriate match data 26 for the first and second users … based on the login information provided by the second user" by looking "up the second user's client ID and the match ID associated with the first user to determine what, if anything, should be displayed to the second user." Ex-1007 ¶134. For example, when "the user of mobile device 12a and the user of mobile device 12b are within a predetermined or other suitable proximity and it is determined that both have specified 'Harvard' as the value for 'University'[], 'Harvard' may be displayed on mobile device 12b." Ex-1007 ¶47; *see also id.* ¶78. The displayed information corresponds to the recited content retrieved from a server.

In the Watanabe-Ribaudo combination, the first further action is related to retrieving content from a server, as taught by Watanabe-Ribaudo, based upon information derived from the first unique identifier, as taught by Watanabe. Ex-1002 ¶¶131-132.

f. Claims 31/61: The [method/computer program product] of claim [1/50,] wherein [following the taking of] the first further action[,/additionally includes causing the wireless device to send information to] a server associated with an account for a user of the wireless device[, and enabling the server to/performs a step of] send[ing] a[n email] message to an email address associated with the account for the user as a result of the first further action.

Watanabe-Ribaudo teaches Claims 31/61.

Ribaudo teaches that the wireless device sends information to a server associated with the user's account and the server sends an email message to an email address associated with the account for the user. Ribaudo teaches that "if any other relevant users of other mobile devices 12 (e.g., users who are matches for the first user) are also reported to data center 14 as being nearby (i.e., either via BLUETOOTH scan, Wi-Fi, GSM, or otherwise), then the first user may receive a notification from data center 14 via SMS, email, or another suitable type of communication." Ex-1007 ¶157; *see also id.* ¶¶140, 152.

Watanabe teaches that the first further action has already been performed, as explained in Section XII.A.2.e. Ex-1002 ¶¶133-135. In the Watanabe-Ribaudo combination, the wireless device sends information to a server associated with the user's account, the server sends an email message to an email address associated with the account for the user, as taught by Ribaudo, and the email would relate to

the same particular entity or object associated with the first unique identifier as a result of the first further action, as taught by Watanabe. *Id*.

g. Claim 34: The method of claim 1 wherein the first further action is related to either a product tied to a location or an advertisement tied to a location.

Watanabe-Ribaudo teaches Claim 34.

Watanabe-Ribaudo teaches that the first further action is related to an advertisement tied to a location, as explained in Section XII.A.3.d. Ribaudo teaches that "***advertisements***, personal advertisements, and classified advertisements ***may be served on a per wireless access point basis*** (e.g., a per MAC address basis or per cell tower ID basis)" and "displayed on mobile devices 12 using application 20." Ex-1007 ¶217; *see also id.* ¶215. A POSITA would have understood that an advertisement tied to a cell tower ID would be tied to a location. Ex-1002 ¶¶136-137.

B. Ground 2: Claims 2-10, 14, 16, 18-19, 22-28, 35, 37-44, 46, 48-49, 51-55, 57-60, 62, 66, 68, 72, 75-79, and 81-83 are obvious over Watanabe in view of Ribaudo and Behrens.

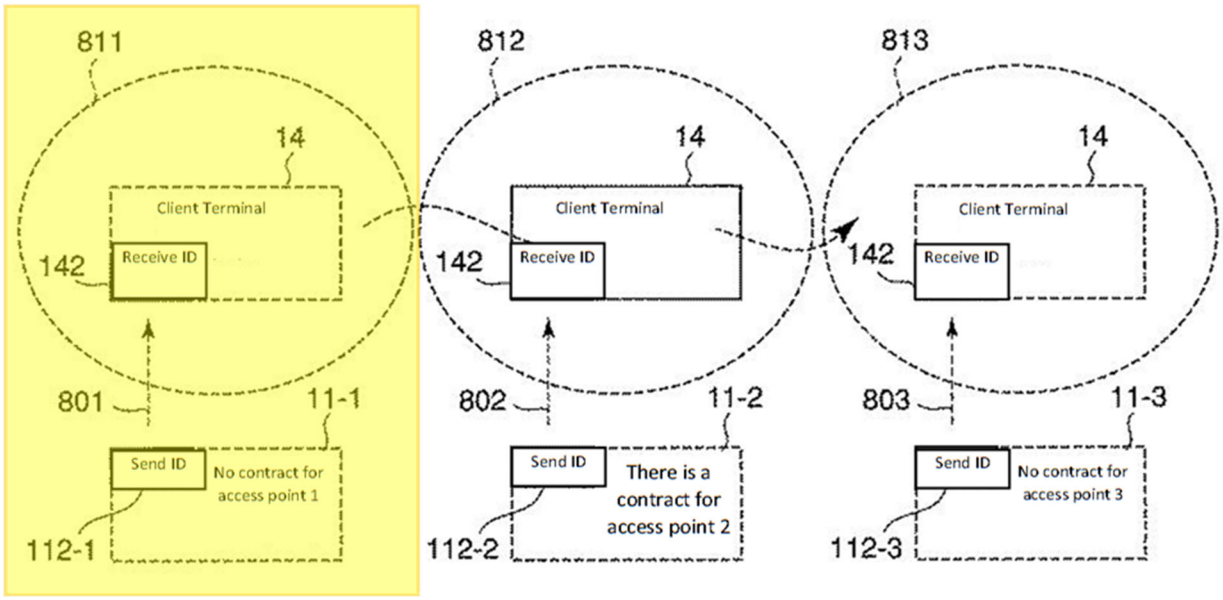
Independent Claim 37 appears to take the limitations of independent Claims 1 and 50 and repeat them twice. Specifically, Claim 37 recites the same first plurality of beacon transmissions as Claims 1 and 50 (*see* Ex-1020 (claim mapping table comparing 37[pre]-37[g] and 1[pre]/50[pre]-1[d]/50[d])) and adds a second plurality of beacon transmissions (*id.* 37[h]), which have different unique identifiers and

MAC addresses from those in the first plurality of beacon transmissions but are received from the same transmitting device and have the same beacon service identifier as the first plurality of beacon transmissions (*id.* 37[i]-37[j]).

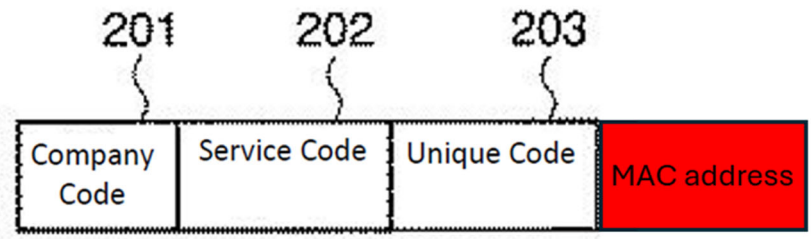
Claim 37 thus recites a system with a beacon transmitter that is like that of Claims 1 and 50 in a first time period, but during a second time period, the beacon transmitter transmits the same service identifier but with a different unique identifier and a different MAC address. The '971 Patent does not explain why the beacon transmitter would behave this way, but the prior art demonstrates why such a configuration would have been obvious. Ex-1002 ¶¶138-139.

1. A POSITA would have been motivated to combine Watanabe-Ribaudo's teachings with Behrens' teachings and would have had a reasonable expectation of success.

As explained in Section XII.A.1, the Watanabe-Ribaudo combination teaches receiving at the mobile device a first plurality of beacon transmissions during a first time period, which each include a MAC address (e.g., M1), a unique identifier (e.g., U1), and a beacon service identifier (e.g., S1). Ex-1002 ¶140. For example, as shown in Figures 2' and 8 below, when client terminal 14 enters area 811 (yellow), which is covered by AP 11-1, power induction receiver 142 receives continuous and periodic beacons 801 and filters based on the transmitter identification information, such as C1:S1:U1:M1. Ex-1006 ¶¶51-52.



[FIG. 2']



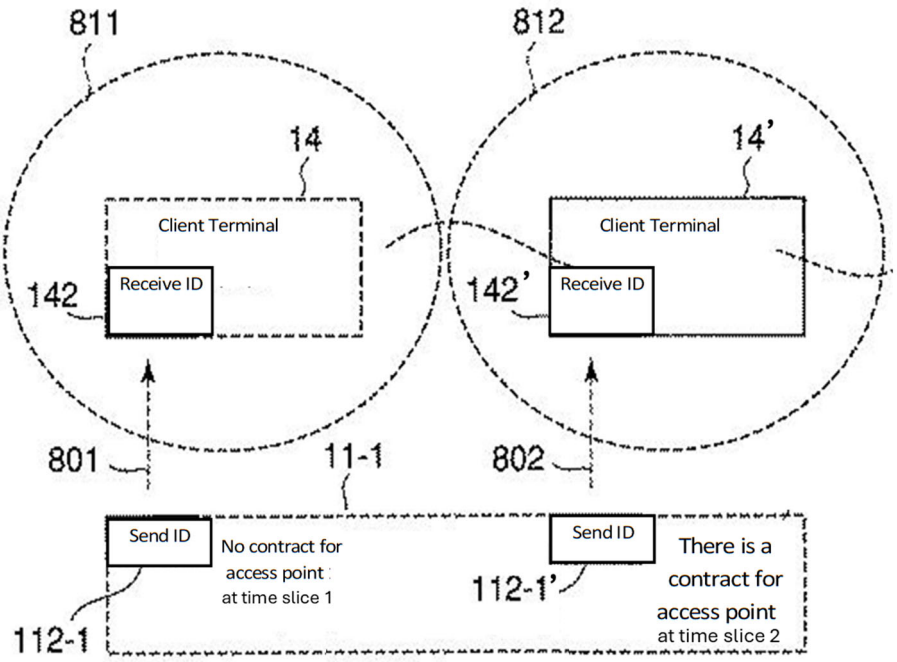
Watanabe further explains that certain of the codes transmitted by the beacon transmitter could also be used to distinguish between companies for which the client terminal (mobile device) has a preexisting relationship or contract. Ex-1006 ¶40. Watanabe states that these plurality of codes may come from several different APs (e.g., 112-1, 112-2, and 112-3). Watanabe does not state that a plurality of distinct codes would come from a single AP, but this feature is taught by both Behrens and Ribaudo.

Behrens teaches electronic devices that "continuously/repeatedly transmit" UIDs "via non-directed wireless radio frequency transmission." Ex-1008, 11:1-5. Behrens teaches that a UID "may consist of or include a MAC (media access control) address, Bluetooth Device Address (i.e. BD_ADDR), or other unique or quasi-unique identifier." Ex-1008, 11:21-26. Moreover, "[e]ven in the event that the device has a UIDs, the software may allow use of a different UID." Ex-1008, 22:28-29. Behrens teaches that "this may be beneficial to the user" because it "may even allow a user to have multiple or changing UIDs and, therefore, different online identities." Ex-1008, 23:1-5. A POSITA would thus have understood that Behrens teaches that multiple unique identifiers may be associated with a single device. Ex-1002 ¶¶141-144.

Additionally, Ribaudo similarly describes that a user "may be associated with ***one or more client IDs***, which may identify the user publicly." Ex-1007 ¶68. Ribaudo explains that a single device with multiple distinct IDs is beneficial for shielding a true identity. Ex-1007 ¶46. Ribaudo also teaches "time-slicing to join and bounce between several networks." Ex-1007 ¶72. Ribaudo defines "time slicing" as "bouncing between being associated with an [AP]for a certain period of time (e.g., milliseconds) and being in an ad-hoc mode for a certain period of time (e.g., milliseconds)." Ex-1007 ¶72. Ribaudo thus explains that for certain periods of a time a device may have an ID associated with one identity and functionality, and

during another period of time, the same device may have a different ID associated with a different functionality. *See id.* (alternatively associating with one network for detecting users in proximity and another network for accessing internet resources).

In the Watanabe-Ribaudo-Behrens combination, Watanabe's wireless communication system would have been implemented in view of Ribaudo's and Behrens' teachings that *multiple unique identifiers* may be associated with the same device. The combined system would thus look like the below modified Watanabe figure, in which two different APs are replaced by a single physical AP that provides distinct codes at different time slices, as taught by Ribaudo.



A POSITA would have been motivated to modify Watanabe in this way for a number of reasons. It is a well-established principle that a POSITA would have been

motivated to simplify a system by combining two different physical structures into one. MPEP §2143.I.A. As discussed for Claims 1/50, Watanabe-Ribaudo teaches an AP 11-1 (beacon transmitter) that transmits a plurality of beacons including company code, service code, unique identifier, and MAC address C1:S1:U1:M1. Watanabe-Ribaudo also teaches a second AP 11-2 that might transmit C2:S2:U2:M2. Watanabe also teaches that certain services might be provided by more than one company. For example, C1 may provide services S1, S2, S3, and C2 may provide S2 and S3. Ex-1006 ¶40. Because both C1 and C2 provide service S2, for example, a POSITA would have understood that it would be more efficient if the two companies could share an AP instead of providing two separate ones so that C1 could provide service S2 at certain times and C2 could provide service S2 at other times. Here, minimizing the number of physical APs would simplify Watanabe's system as a matter of routine design choice. Ex-1002 ¶145.

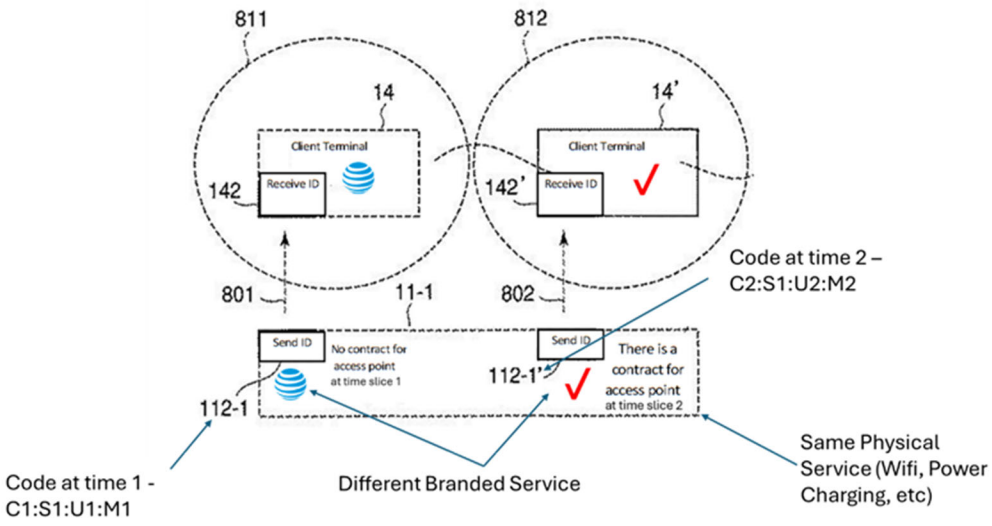
Moreover, Watanabe explains that in some cases "there are contracts with a plurality of service providers to receive different services from each" and also that in some cases "there are contracts with a plurality of service providers for identical services." Ex-1006 ¶62. So "services may be received from a plurality of service providers." *Id.* In such cases, an individual may have contracts or pre-existing relationships for a particular service from one company, but not have a relationship for the same service from another. This may happen for any number of reasons, such

as brand or company loyalty. For example, a user may prefer AT&T services over Verizon services, despite that the underlying service provided (e.g., Netflix's streaming service) is exactly the same and may be provided by the exact same hardware. In such a case where the same services are being provided, a POSITA would have been motivated to use the same underlying hardware to provide the same service, despite that a user may have contracts or business relationships with different companies that offer the same service. Ex-1002 ¶146.

Ribaudo teaches a further benefit of using two different IDs for a single device: shielding identities. In the combined system, the fact that similar services are being provided to, for example, Verizon users would have been "shielded" to a user that was brand-loyal to AT&T, as taught by Ribaudo. Ex-1007 ¶46. Behrens also teaches a similar benefit, namely that the same service, as taught by Watanabe, can be provided by companies with "different online identities," as taught by Behrens (Ex-1008, 23:1-5), using the same underlying hardware. Thus, in the combined system, pre-existing business, company, and brand relationships between different entities can be shielded from the fact that the same underlying hardware infrastructure is in use. Ex-1002 ¶147.

In the Watanabe-Ribaudo-Behrens combination, Watanabe's multiple unique identifiers received in the first and second plurality of beacon transmissions would be received via Bluetooth from the same transmitting device, as taught by Ribaudo

and/or Behrens. Ex-1002 ¶¶148-150. Specifically, as shown in Figure 8' below, Watanabe's AP 11-1 would be modified to incorporate Ribaudo's time slicing teachings such that during a first time period, the transmitter identification information C1:S1:U1:M1 would be transmitted, and during a second time period, the transmitter identification information C2:S1:U2:M2 would be transmitted.



This would allow two different companies to transmit the same service using the same hardware infrastructure but using different unique identifiers and MAC addresses so that the identity of the AP is shielded from the client. As Behrens explains, doing so would provide the user benefit of having "different online identities." Ex-1008, 23:2-4; *see also* Ex-1007 ¶46 (Ribaudo using multiple IDs "to shield the true identity of the user, for privacy purposes").

A POSITA would have had a reasonable expectation of success in combining the teachings of Watanabe-Ribaudo and Behrens. Ex-1002 ¶151. All three describe

receiving beacon transmissions comprising identification information associated with a nearby AP (or other device) at a mobile device using Bluetooth, receiving stored information relating to an entity associated with the identification information from a server using the Internet, comparing the beaconed identification information to preset identification information stored at the mobile device to determine if it matches, and taking further action relating to the stored information if it matches. Ex-1006 ¶¶46-55; Ex-1007 ¶¶6-7; Ex-1008, Abstract, 6:1-30, 19:5-14. The combination simply replaces multiple physical APs with a single one, and provides updated names of identification codes, all of which is within the routine level of skill in this art. Indeed, Ribaudo teaches a mechanism to do exactly that in a way that is transparent to the user by a method it calls "time-slicing to join and bounce between several networks." Ex-1007 ¶72. Behrens further teaches that its "software may allow use of a different UID." Ex-1008, 22:28-29. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations. Ex-1002 ¶151.

2. Independent Claim 37

a. Element 37[pre]: A mobile wireless device comprising:

Watanabe in view of Ribaudo and Behrens ("Watanabe-Ribaudo-Behrens") teaches the preamble. *See* Section XII.A.2.a. Ex-1002 ¶152.

b. Element 37[a]: one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol;

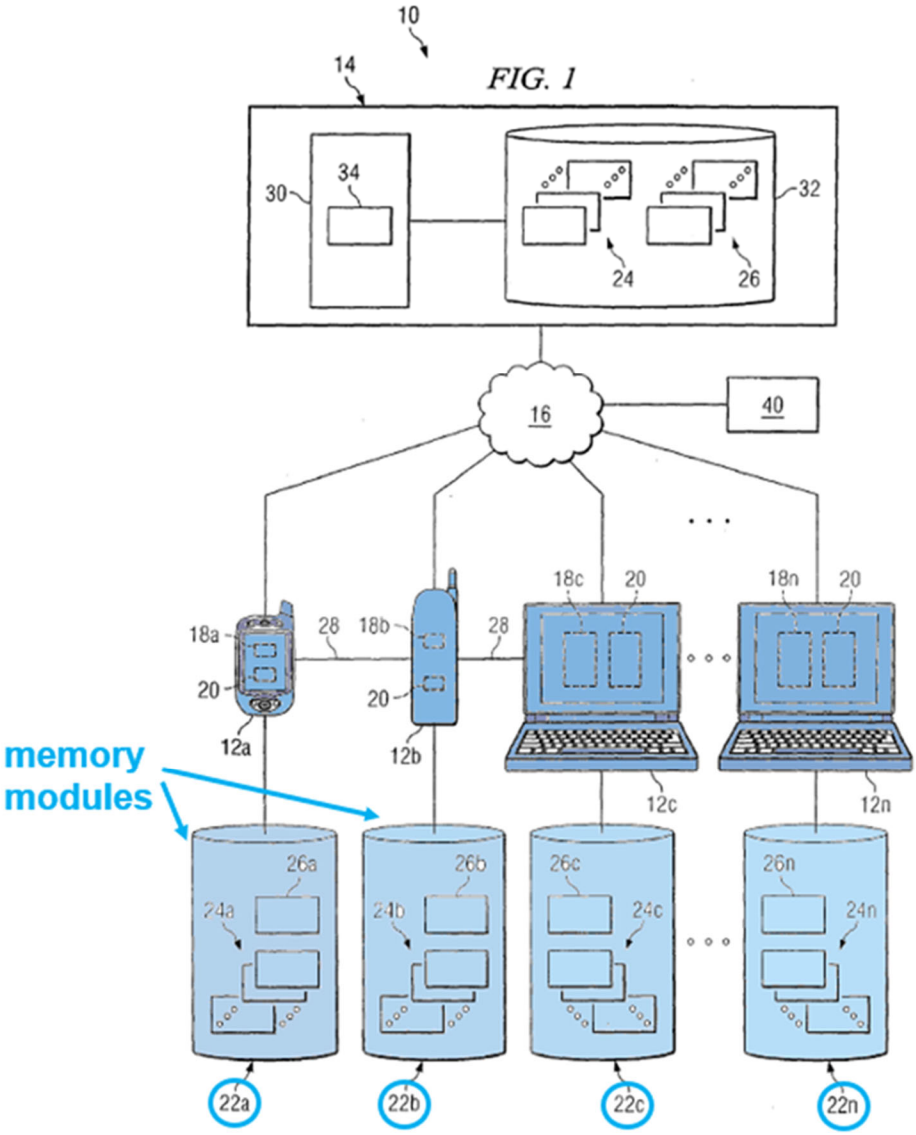
Watanabe-Ribaudo-Behrens teaches Element 37[a]. *See* Sections XII.A.2.b and XII.A.2.c. Ex-1002 ¶¶153-154.

c. Element 37[b]: one or more processors; and

Watanabe-Ribaudo-Behrens teaches Element 37[b]. *See* Section XII.A.2.a. Ribaudo teaches mobile devices 12 that "each include any suitable combination of hardware, software, and firmware to provide the functionality described" including "applications 20 that are based on one or more programming languages" to "facilitate communication with other mobile devices 12" and the data center. Ex-1007 ¶19. Accordingly, a POSITA would have appreciated Ribaudo as teaching a processor(s), as such hardware would be necessary to provide the described functionality. Ex-1002 ¶¶155-156. A POSITA would have also understood that processors are inherent components in mobile telephones, as taught by Behrens. *Id*. Behrens teaches "a small, battery-powered handheld device" such as a mobile phone, having "the components necessary for sending out, via short-range and/or medium-range radio frequency, at least one UID" including "at least one microprocessor for managing the wireless radio transmissions as well as for processing and storing data." Ex-1008, 20:31-21:15.

d. Element 37[c]: one or more memory devices coupled to the one or more processors, the one or more memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including:

Watanabe-Ribaudo-Behrens teaches Element 37[c]. *See* Section XII.A.2.a. Ex-1007 ¶¶19, 32. Ribaudo explains that its "[m]obile devices 12 may each have an associated memory module 22"—or "any suitable memory modules 22 according to particular needs"—that may be "operable to store data as one or more compressed binary files." Ex-1007, ¶32; Fig. 1.



Specifically, "[m]emory module 22 may store various data associated with the user of mobile device 12," including "one or more user profiles 24 for the user of mobile device 12[,] … match data 26 downloaded from data center 14[,]" and "any other suitable information." Ex-1007 ¶33; *see also id.* ¶84. Along with data, the memory module stores software instructions for performing the functions described below. Ex-1007, Cl. 31 ("[s]oftware for proximity determination, the software being

embodied in a computer-readable medium and when executed, operable to" perform the claimed functions). Accordingly, a POSITA would have understood Ribaudo as teaching that its memory modules are coupled to the processor(s), and store a set of software instructions that when executed by the processor(s), cause it to perform the operations described below. Ex-1002 ¶¶157-158.

A POSITA would have also understood that Element 37[c] recites components that are inherent in mobile telephones, as taught by Behrens. Ex-1002 ¶¶159-160. Behrens teaches a mobile phone including "memory, which may be FLASH memory" and "at least one microprocessor for managing the wireless radio transmissions as well as for processing and storing data." Ex-1008, 20:31-21:15.

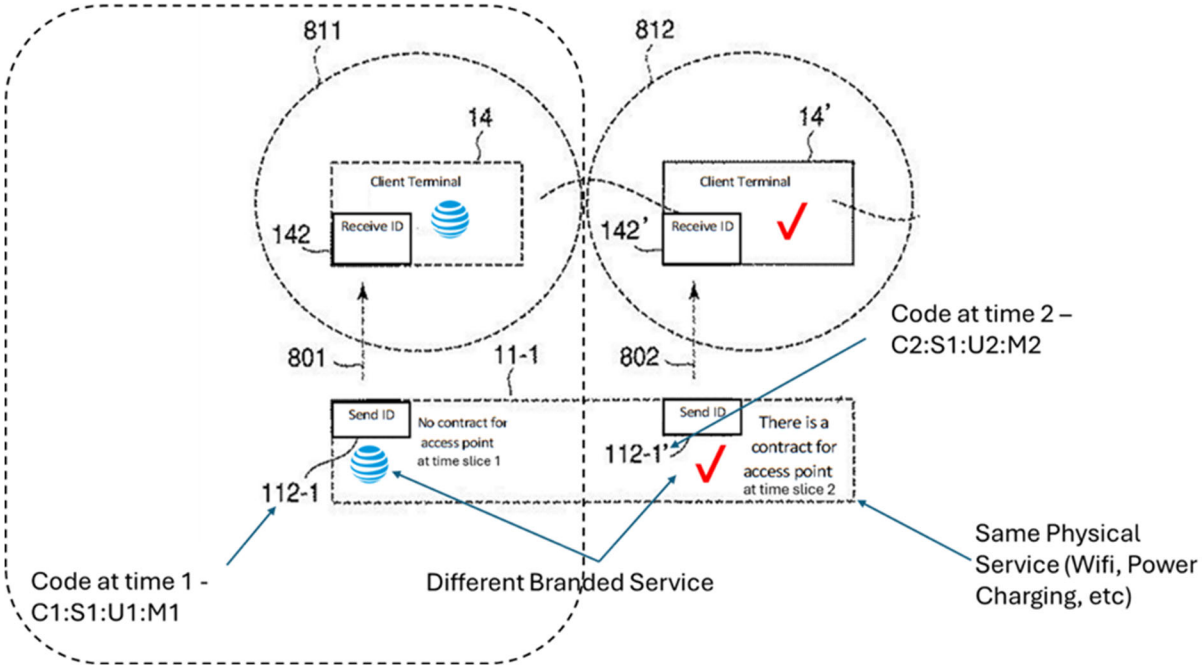
e. Element 37[d]: receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, the unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not otherwise accessible to the wireless device utilizing the Bluetooth wireless protocol;

Watanabe-Ribaudo-Behrens teaches Element 37[d]. *See* Section XII.A.2.b.

Additionally, Ribaudo teaches that the first plurality of beacon transmissions are received ***during a first time period***. Ribaudo teaches "time-slicing to join and

bounce between several networks." Ex-1007 ¶72. For example, "adaptor 18a may use NDIS and a WLAN driver to automatically associate mobile device 12a with both ad-hoc" networks to detect other users in proximity and infrastructure networks to access Internet resources, simultaneously, "staying within the timeout threshold for a given network[,] … which may create virtualized simultaneous networks." Ex-1007 ¶72. Ribaudo defines "time slicing" as "bouncing between being associated with an [AP]for a certain period of time (e.g., milliseconds) and being in an ad-hoc mode for a certain period of time (e.g., milliseconds)." Ex-1007 ¶72. In the Watanabe-Ribaudo-Behrens combination, Watanabe's mobile device receives a first plurality of beacon transmissions over Bluetooth from a beacon transmitter during a first time period, as taught by Ribaudo. Ex-1002 ¶¶161-165.

As explained in Section XII.B.1 and shown in Figure 8' below, in the Watanabe-Ribaudo-Behrens combination, Watanabe's multiple unique identifiers received in the first and second plurality of beacon transmissions would be received via Bluetooth from the same transmitting device in different time periods, as taught by Ribaudo and/or Behrens. During the recited "first time period," the client terminal would receive the code C1:S1:U1:M1.



f. Element 37[e]: receiving from one or more servers, using the second wireless protocol, stored information related to a entity or object associated with a first unique identifier;

Watanabe-Ribaudo-Behrens teaches Element 37[e]. *See* Section XII.A.2.c. Ex-1002 ¶¶166-167.

g. Element 37[f]: selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with the particular wireless beacon service;

Watanabe-Ribaudo-Behrens teaches Element 37[f]. *See* Section XII.A.2.d. Ex-1002 ¶¶168-169.

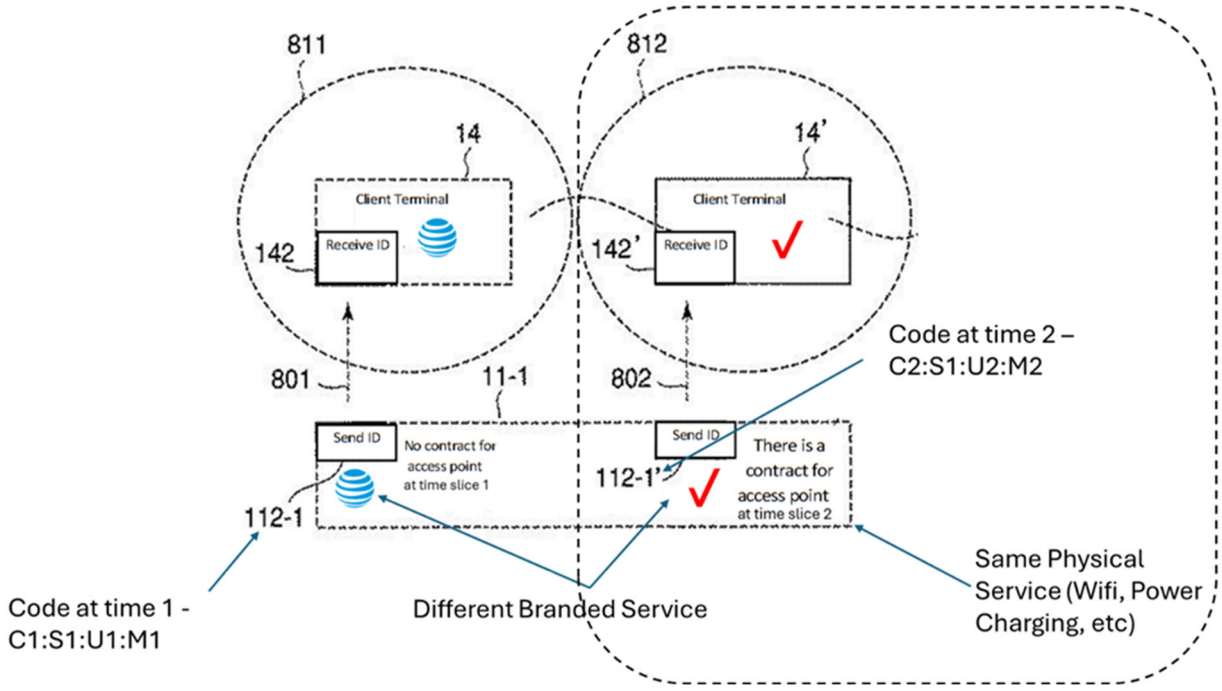
h. Element 37[g]: taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers;

Watanabe-Ribaudo-Behrens teaches Element 37[g]. *See* Section XII.A.2.e. Ex-1002 ¶¶170-171.

i. Element 37[h]: receiving, by the wireless device, using the Bluetooth wireless protocol, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) the beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not accessible to the wireless device utilizing the Bluetooth wireless protocol;

Watanabe-Ribaudo-Behrens teaches Element 37[h].

As explained in Section XII.B, Claim 37 simply repeats the "receiving" step of Claims 1 and 50, but during a second time period the beacon transmitter transmits the same service identifier but with a different unique identifier and a different MAC address. As explained in Section XII.B.1 and shown in Figure 8' below, during the recited "second time period," the client terminal would receive the code C2:S1:U2:M2. The second time period corresponds to the second period of Ribaudo's "time slicing" for bouncing between networks. Ex-1007 ¶72.



Moreover, as explained in Section XII.B.1, a POSITA would have been motivated to modify Watanabe in this way for a number of reasons, including reducing the number of physical components and simplifying the hardware, allowing for multiple different companies to use the same hardware to provide the same service, and to protect different company brand identities and shield the end user from hardware implementation details. Ex-1002 ¶¶172-176.

j. Element 37[i]: selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that a particular received beacon transmission is associated with the same particular wireless beacon service;

Watanabe-Ribaudo-Behrens teaches Element 37[i]. As discussed in Section XII.B, the only meaningful difference between the first and second plurality of transmissions is that, in the modified system, Watanabe's transmissions are changed based on Ribaudo's time-slicing teachings. So, instead of the code being "C1:S1:U1:M1" as it was during the first time period, during these steps relating to the second time period, the code is "C2:S1:U2:M2." The software and processing steps work the same way; they just operate on this modified code. *See* Sections XII.B.2.g and XII.A.2.d. Ex-1002 ¶¶177-178.

k. Element 37[j]: taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from a same transmitting device; and

Watanabe-Ribaudo-Behrens teaches Element 37[j].

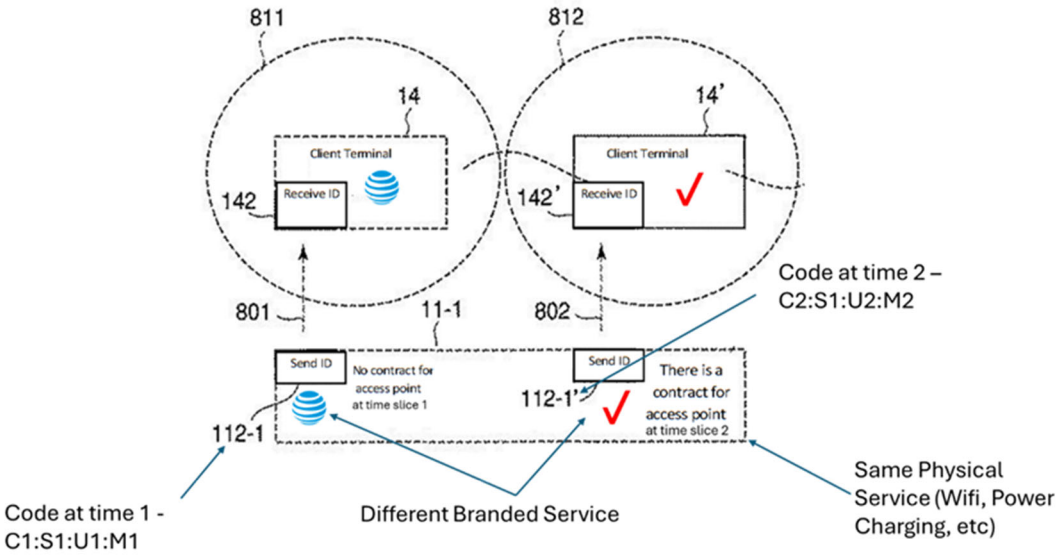
(1) Taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object

As discussed in Section XII.B, the only meaningful difference between the first and second further actions is that, in the modified system, Watanabe's transmissions are changed based on Ribaudo's time-slicing teachings. So, instead of the code being "C1:S1:U1:M1" as it was during the first time period, during these steps relating to the second time period, the code is "C2:S1:U2:M2." The software and processing steps work the same way, they just operate on this modified code. *See* Sections XII.B.2.h and XII.A.2.e. Moreover, the first and second unique identifiers are associated with the same entity or object because during both the first and second time periods, Netflix is the entity or object that provides its video streaming service to companies C1 and C2 (e.g., AT&T and Verizon) through the APs. Ex-1002 ¶¶179-180.

(2) Second unique identifier is not equal to the first unique identifier

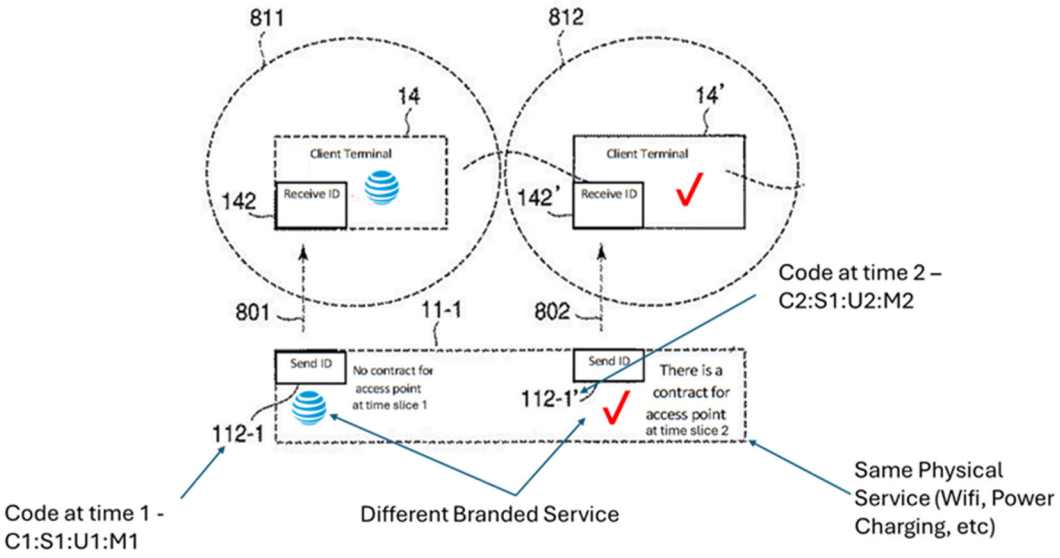
As explained in Section XII.B.1 and shown in Figure 8' below, in the Watanabe-Ribaudo-Behrens combination, the plurality of beacon transmissions include different unique identifiers, as taught by Ribaudo and/or Behrens. Ex-1002 ¶181. Specifically, an identifier such as U1 would be used when the AP is operating

during a first time slice associated with an entity or object (e.g., Netflix) whose streaming services are provided by a first company C1 (e.g., AT&T), and a different identifier such as U2 would be used when the AP is operating during a second time slice associated with an entity or object (e.g., Netflix) whose streaming services are provided by a second company C2 (e.g., Verizon):



(3) Received beacon transmissions including the first and second unique identifiers are received from a same transmitting device

As explained in Section XII.B.1, in the Watanabe-Ribaudo-Behrens combination, Watanabe's multiple unique identifiers received in the first and second plurality of beacon transmissions would be received via Bluetooth from the same transmitting device, as taught by Ribaudo and/or Behrens. Ex-1002 ¶¶182-183. Specifically, they would have been received by transmitting device 11-1 in the modified/combined figure below:

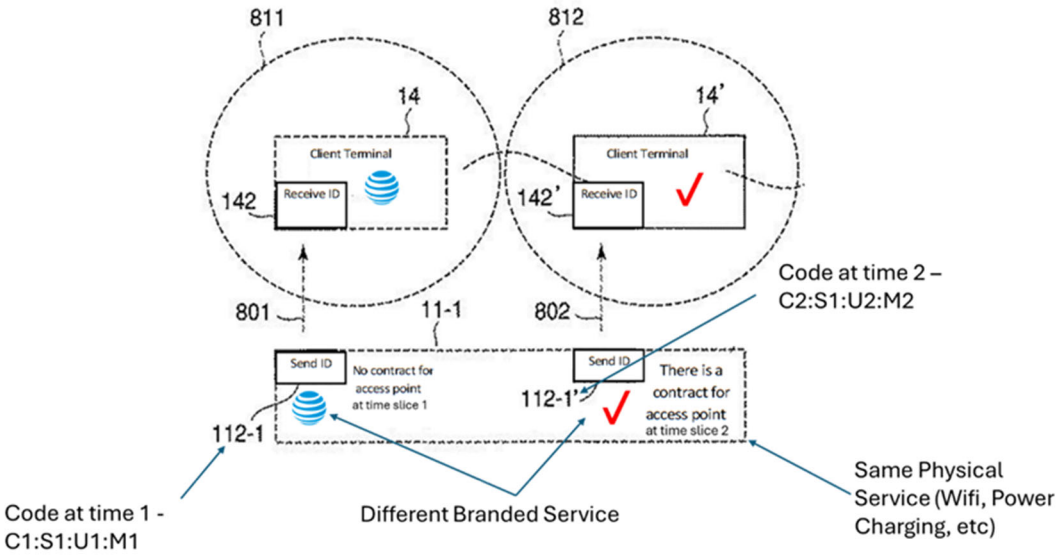


l. Element 37[k]: wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier.

Watanabe-Ribaudo-Behrens teaches Element 37[k]. Ex-1002 ¶¶184-187.

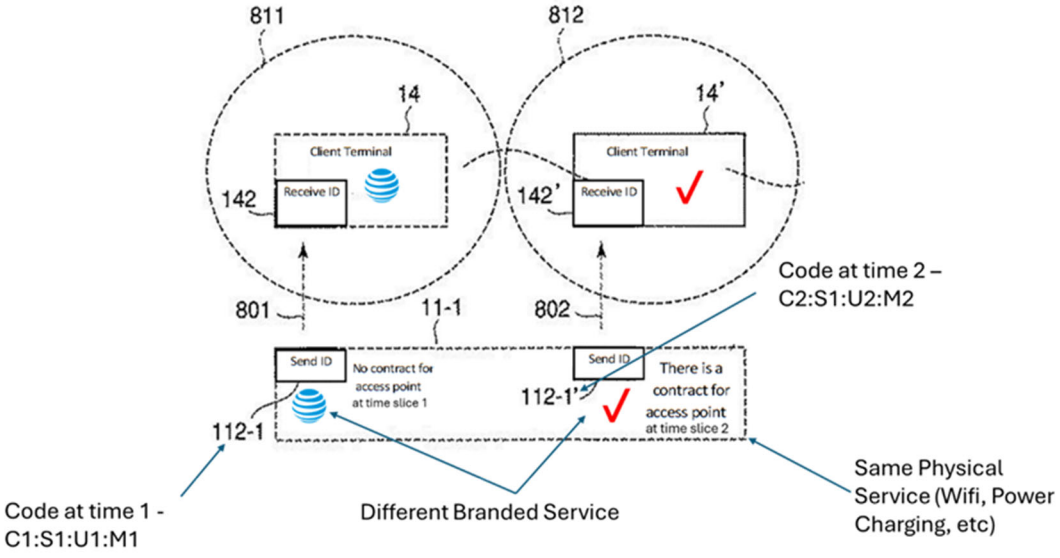
(1) MAC address received in beacon transmission including the second unique identifier is different from MAC address received in beacon transmission including the first unique identifier

As explained in Section XII.B.1 and shown in Figure 8' below, in the Watanabe-Ribaudo-Behrens combination, the plurality of beacon transmissions have different MAC addresses. Specifically, MAC address M1 would be used when the AP is operating during a first time slice associated with a first company C1 (e.g., AT&T), and MAC address M2 would be used when the AP is operating during a second time slice associated with a second company C2 (e.g., Verizon):



(2) Each beacon transmission includes the same particular beacon service identifier

As shown in the combined figure, the same service identifier, S1, is used in all cases because the same physical service is being offered (e.g., Netflix), just by a different company or brand.



3. Dependent Claims 2-10, 14, 16, 18-19, 22-28, 35, 38-44, 46, 48-49, 51-55, 57-60, 62, 66, 68, 72, 75-79, and 81-83

a. Claims 2 and 51

(1) Element 2[pre]: The method of claim 1, wherein the receiving, at the wireless device, via a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period, and,

Element 51[pre]: The computer program product of claim 50 wherein the computer program instructions, when executed by the one or more processors in the wireless device, cause the wireless device to: during a first time period: process the first plurality of beacon transmissions in the first time period, and

Watanabe-Ribaudo-Behrens teaches the preamble. *See* Section XII.B.2.e. Ex-1002 ¶188.

(2) Elements 2[a]/51[a]: [wherein the method further comprises,] during a second time period:

Watanabe-Ribaudo-Behrens teaches Elements 2[a]/51[a]. *See* Section XII.B.2.i.

(3) Elements 2[b]/51[b]: [receiving, at the wireless device, via a short range wireless protocol,]/[process] a second plurality of beacon transmissions, [received at the wireless device via the Bluetooth wireless protocol,] each of the [second plurality of] beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies that the unique identifier is relevant to stored information associated with a wireless beacon service, wherein the stored information is not accessible to the wireless device utilizing the [short range]/[Bluetooth] wireless protocol;

Watanabe-Ribaudo-Behrens teaches Elements 2[b]/51[b]. *See* Section XII.B.2.i.

(4) Elements 2[c]/51[c]: [causing selection of]/[select] one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that the particular received beacon transmission is associated with the same particular wireless beacon service; and

Watanabe-Ribaudo-Behrens teaches Elements 2[c]/51[c]. *See* Section XII.B.2.j.

(5) Elements 2[d]/51[d]: [taking]/[perform a] second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the first unique identifier and the second unique identifier are both associated with the same particular entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from a same transmitting device.

Watanabe-Ribaudo-Behrens teaches Elements 2[d]/51[d]. *See* Section XII.B.2.k. Ex-1002 ¶¶189-192.

b. Claims 3/52: The [method]/[computer program product] of claim [2]/[51] wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier, and wherein a plurality of beacon transmissions including the particular [beacon] service identifier and the first unique identifier are received in the first time period, and no beacon transmissions including the same [particular] service identifier and the second unique identifier are received in the first time period.

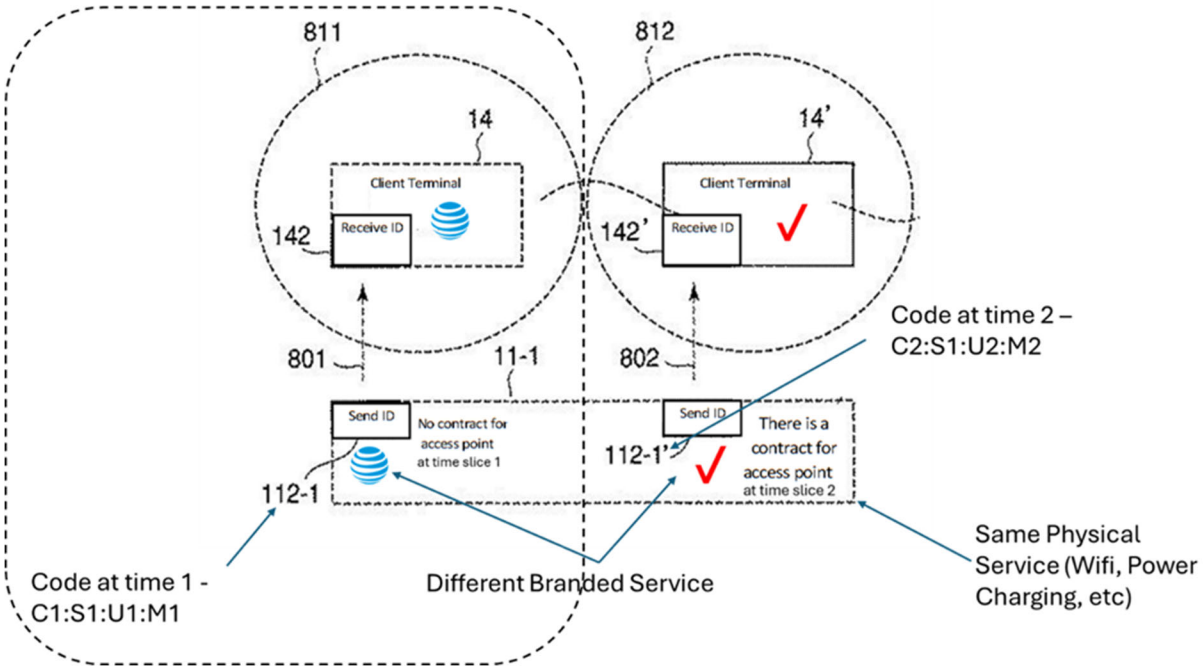
Watanabe-Ribaudo-Behrens teaches Claims 3/52.

(1) MAC address received in beacon transmission including the second unique identifier is different from MAC address received in beacon transmission including the first unique identifier but each beacon transmission includes the same beacon service identifier

Watanabe-Ribaudo-Behrens teaches this limitation for the reasons explained in Section XII.B.2.l. Ex-1002 ¶¶193-194.

(2) A plurality of beacon transmissions including the particular service identifier and the first unique identifier are received in the first time period

As explained in Sections XII.A.2.b and XII.B.2.e, the first plurality of beacon transmissions received during the first time period include the codes C1:S1:U1:M1, as shown in the annotated figure below.



See also Ex-1007 ¶72 (teaching "time-slicing"); Ex-1002 ¶¶195-196.

(3) No beacon transmissions including the same service identifier and the second unique identifier are received in the first time period

As explained in Section XII.B.2.i, the plurality of beacon transmissions sent during the ***second*** time period include the identifiers C2:S1:U2:M2, whereas the beacon transmissions sent during the ***first*** time period include the identifiers C1:S1:U1:M1. Thus, unique identifier U1 is sent only during the first time period and unique identifier U2 is sent only during the second time period. So no transmissions during the first time period include both the second unique identifier (U2) and the same service identifier (S1). Ex-1002 ¶197.

c. Claims 4/40/53: The [method]/[mobile wireless device]/[computer program product] of claim [3]/[37]/[52] wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

Watanabe-Ribaudo-Behrens teaches Claims 4/40/53 because, as explained in Section XII.B.2.k, Watanabe teaches that activation of the client's device is based upon the filter/comparison function currently being performed on the device associated with the wireless beacon service. Specifically, Watanabe teaches that "[w]hen the power induction receiver 142 of a client terminal 14 ***receives the beacon***, the transmitter identification ***information*** included therein ***is extracted and compared*** to identification information ***for filtering*** that has been set in advance

(S503)" and "***[i]f*** the comparison result is ***a match***, the client main unit 141 ***is started up*** (S504)." Ex-1006 ¶47; *see also id.* ¶52; Ex-1002 ¶198.

d. Claims 5/41/54: The [method]/[mobile wireless device]/[computer program product] of claim [4]/[40]/[53] wherein the function is related to a current phone call, music being played, a video being played, a multi-player game, or a shared application.

Watanabe-Ribaudo-Behrens teaches Claims 5/41/54.

Ribaudo teaches that the function is related to a shared application. Ribaudo teaches allowing "users of mobile devices 12 who have installed application 20 ***to distribute copies of application 20 to other users*** of other mobile devices 12 who have not installed application 20, which may allow the other users to access one or more features of system 10." Ex-1007 ¶120; *see also id.* ¶¶123, 139 (second user may "acquire application 20 from another user"), 220. Moreover, Ribaudo's shared application performs a number of functions including a filter/comparison function to identify a match and authenticate users. Ex-1007 ¶¶22 ("application 20 may perform certain functions to facilitate communication with data center 14, completion of user profiles, authentication of users, and other suitable functions"), 84, 141 (application 20 may "determine whether the first and second user's are a match"). In the Watanabe-Ribaudo-Behrens combination, Watanabe's filter/comparison function on the mobile device would be performed by a shared application, as taught by Ribaudo. Ex-1002 ¶¶199-200.

e. Claims 6/55: The [method]/[computer program product] of claim [2]/[51] wherein the first or the second further action is [additionally] related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifier, or information derived from the first or second unique identifier.

Watanabe-Ribaudo-Behrens teaches Claims 6/55. *See* Sections XII.A.2.e, XII.B.3.a.5, and XII.A.3.d. Ex-1002 ¶201.

f. Claims 7/42/57: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] wherein one or more of the first further action and the second further action [additionally] includes [causing the wireless device to] receiv[ing]/[e] content from a server based upon information derived from either the first unique identifier or the second unique identifier.

Watanabe-Ribaudo-Behrens teaches Claims 7/42/57. *See* Sections XII.A.2.e, XII.B.3.a.5, and XII.A.3.e. Ex-1002 ¶202.

g. Claims 8/43/59: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51], wherein the first or second further action [additionally] includes [sending a message] [or] [causing a server to send a message]/[causing the wireless device to send a message] to another device associated with an account related to the first and the second unique identifiers[, or information derived from the first or the second unique identifiers].

Watanabe-Ribaudo-Behrens teaches Claims 8/43/59.

Ribaudo teaches sending a message to another device associated with an account. Ribaudo teaches that "adaptor 18a may use extensible messaging and

presence protocol (XMPP) to relay XML-based messages and presence information between the user of mobile device 12a and the mobile device 12 of a matched user (e.g., mobile device 12b) … anonymously within their ad-hoc wireless network to determine," for example "a meeting place or other venue for interaction." Ex-1007 ¶79. Ribaudo teaches that "adaptor 18a may use the TCP/IP protocol to create a messaging connection between mobile devices 12a and 12b" but "[o]ther messaging mechanisms, such as short-range radio technologies, Wi-Fi, BLUETOOTH, short messaging services (SMS), voice over Internet protocol (VoIP), push-to-talk, cellular telephone, voicemail, video conferencing … may also be used." Ex-1007 ¶79; *see also id.* ¶164 (users may reply anonymously to identified matches using SMS message).

Watanabe teaches that the first or second further action is related to the first and the second unique identifiers or information derived from them, as explained in Sections XII.A.2.e and XII.B.3.a.5. Ex-1002 ¶¶203-205. In the Watanabe-Ribaudo-Behrens combination, the first or second further action includes sending a message to another device associated with an account, as taught by Ribaudo, and the action is related to the first and the second unique identifiers or information derived from them, as taught by Watanabe. *Id*.

h. Claim 9: The method of claim 2 wherein following the taking of the first or second further action, a server associated with an account for a user of the wireless device performs a step of sending an email message to an email address associated with the account for the user, the email message relating to the particular entity or object.

Watanabe-Ribaudo-Behrens teaches Claim 9. *See* Sections XII.A.2.e, XII.B.3.a.5, and XII.A.3.f. Ex-1002 ¶206.

i. Claims 10/44/62: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] wherein the second further action [additionally] includes [causing the wireless device to] prevent[ing] sending of the second unique identifier or information derived from the second unique identifier by the [mobile] wireless device to at least one of the one or more servers.

Watanabe-Ribaudo-Behrens teaches Claims 10/44/62.

Behrens teaches preventing sending of the second unique identifier or information derived from it by the wireless device to the server(s). Behrens teaches that a user may "instruct the server to ignore specific UIDs," "tell the server to block specific UIDs, or to have the server instruct his portable device to ignore specific UIDs and vice versa." Ex-1008, 20:10-15. Behrens also teaches that "blacklists containing specific UIDs may be used to eliminate these UIDs from being associated with others." Ex-1008, 26:1-2. For example "blacklists may be UID specific, whereby a user may instruct the server and/or his device to ignore certain UIDs." Ex-1008, 26:2-3. It would have been obvious to a POSITA to instead instruct the

wireless device not to send specific UIDs rather than send them and have them ignored because it would achieve the same result but reduce use of transmission bandwidth and power.

Watanabe teaches that the second further action is related to the second unique identifier, as explained in Section XII.B.3.a.5. Ex-1002 ¶¶207-209. In the Watanabe-Ribaudo-Behrens combination, the second further action involving the second unique identifier, as taught by Watanabe, includes preventing sending of the second unique identifier or information derived from it by the wireless device to at least one of the server(s), as taught by Behrens. *Id*.

j. Claims 14/66: The [method]/[computer program product] of claim [2]/[51] wherein the [computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to: receive] stored information [is received] at the wireless device from at least one of the one or more servers prior to performing one or more of the first and the second further action.

Watanabe-Ribaudo teaches Claims 14/66 for the reasons explained in Sections XII.B.3.a.3 (receiving stored information at wireless device from server relating to second plurality of beacon transmissions with second unique identifier), XII.B.3.a.4 (selecting unique identifier(s) by filtering), and XII.B.3.a.5 (taking second further action relating to stored information if second unique identifier is

present among selected unique identifier(s)). *See also* Section XII.A.3.b. Ex-1002 ¶210.

k. Claims 16/68: The [method]/[computer program product] of claim [2]/[51] wherein all beacon transmitter devices participating in the particular wireless beacon service have the same particular beacon service identifier.

Watanabe-Ribaudo-Behrens teaches Claims 16/68. *See* Section XII.A.2.b. Ex-1006 ¶40 ("AP control unit 11-1 controls services S1, S2, and **S3**," "AP control unit 11-2 controls services S2 and **S3**," and "AP control unit 11-3 controls service **S3**"); Ex-1002 ¶211.

l. Claim 18: The method of claim 2 wherein the steps performed at the wireless device are performed as a result of an application program executing on the wireless device.

Watanabe-Ribaudo-Behrens teaches Claim 18.

Ribaudo teaches that the steps performed at the wireless device are as a result of an application program executing on the device. Ribaudo teaches that "the user of mobile device 12a launches application 20 on mobile device 12a," which "may attempt to detect other mobile devices 12 in proximity to mobile device 12a" by using match data "(e.g., the match IDs) downloaded from data center 14" and beaconing "data such as the client ID of the user associated with mobile device 12a." Ex-1007 ¶84; *see also id.* ¶¶120, 123 ("application 20 may beacon an SSID of 'proprietor_name.net'"). In the Watanabe-Ribaudo-Behrens combination,

Ribaudo's application would be installed and executed on Watanabe's wireless device to perform the recited steps. Ex-1002 ¶¶212-213.

m. Claims 19/72: The [method]/[computer program product] of claim [2]/[51] wherein the second further action is [additionally] related to either a product tied to a location or an advertisement tied to a location.

Watanabe-Ribaudo-Behrens teaches Claims 19/72. *See* Sections XII.A.3.g and XII.B.3.a.5. Ex-1002 ¶214.

n. Claims 22/48/75: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] wherein the second further action [additionally] includes [causing the wireless device to] allow[ing] a user associated with the [mobile] wireless device to [be provided] access to an object or device associated with the wireless beacon service.

Watanabe-Ribaudo-Behrens teaches Claims 22/48/75. Ex-1002 ¶¶215-217.

Watanabe teaches that "the user of the client terminal 14 and the service provider that is to carry out the service, such as providing information using the [AP]11, enter into a contract for receiving services." Ex-1006 ¶37 (the user "acquire[s] the identification information necessary for filtering in order to receive services based on the contract"). Therefore, the second further action includes allowing a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service. Ex-1006 ¶44 ("This enables the client terminal 14 to receive, thereafter, the contracted services through the [AP]11.").

Ribaudo also teaches this claim. Ribaudo teaches that "[m]obile device 12 may notify its user if such a match is detected in proximity, allowing the user to initiate an interaction with the detected match if desired." Ex-1007 ¶26; *see also id.* ¶79.

o. Claims 23/35/49/76: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[3]/[37]/[51] wherein the [taking]/[first or] second further action additionally comprises: controlling further communications between the [mobile] wireless device and at least one device or server associated with an entity or object in proximity to the wireless device [based upon information derived from the first or second unique identifier].

Watanabe-Ribaudo-Behrens teaches Claims 23/35/49/76. *See* Sections XII.A.2.e, XII.B.3.a.4, and XII.B.2.k. Ex-1002 ¶218. Moreover, Watanabe teaches that "[w]hen the client main unit 141 is started up in this way, the client main unit 141 establishes a communication channel with AP main unit 111, through a publicly known scanning method, to initiate data communication" and "communication is carried out with an [AP]11 for which the group information is a match." Ex-1006 ¶53. Thus, "client terminal 14 is able to carry out data communication with a server, or the like, of the service provider through the [AP]11-2." *Id*.

p. Claims 24/82/77: The [method]/[mobile wireless device]/[computer program product] of claim [3]/[37]/[52] [further comprising:]/[wherein the operations further comprise]/[wherein the computer program instructions, when executed by the wireless device, further cause the wireless device to:] receiv[ing]/[e], at the [mobile] wireless device, timing notification information for coordination of active times for beacon transmissions.

Watanabe-Ribaudo-Behrens teaches Claims 24/82/77. Ex-1002 ¶¶219-220.

Ribaudo teaches receiving, at the wireless device, timing notification information for coordination of active times for beacon transmissions. Ribaudo teaches that "matches may be filtered by time of the detected match in proximity." Ex-1007 ¶64. For example, a "user of mobile device 12 may wish to be notified of all matches that are currently in proximity or, instead, may wish to also be notified of all matches that were at the same hotspot but at different points in time (e.g., an hour before the user, a day before the user, or at any other suitable length of time)." Ex-1007 ¶64. Ribaudo further teaches that "the user may be open to sharing more information" from the user's profile(s) based on "the time of day the match is detected" or "one or more network identifiers detected at the time of the detected match." Ex-1007 ¶78; *see also id.* ¶152. Additionally, match data "may be sent to some or all users who are members of a particular group at a particular time or location." Ex-1007 ¶163. For example, "a conference schedule may include one or more breaks at which it might be appropriate for conference members to converse

with one another." *Id.* Match data "may be sent to users during these breaks to facilitate discussions between certain attendees." Ex-1007 ¶163.

q. Claims 25/83/78: The [method]/[computer program product] of claim [24]/[53]/[77] wherein the [receiving, at the wireless device of the] timing notification information is not [received] directly from the beacon transmitter.

Watanabe-Ribaudo-Behrens teaches Claims 25/83/78 for the reasons explained in Section XII.B.3.p. Ribaudo further teaches that data center 14 "may compare the information reported for John with information for other users who reported that MAC address at the same or different times." Ex-1007 ¶201. "Mary may then query data center 14 to see what other users were in the coffee shop previously that she knows or with whom she shares something in common" and, if data center 14 considers them a match, "Mary may see John in the results of his query, possibly with an indication of when he was in the coffee shop." Ex-1007 ¶201. Ribaudo also teaches that the wireless device's receipt of the timing notification information is not directly from the beacon transmitter because it's received from the data center not the mobile device. Ex-1007 ¶191 ("mobile devices 12 may be considered reference beacons in the wireless infrastructure of system 10" and "beacon data that can be used to identify them"); Ex-1002 ¶221.

r. Claims 26/38/79: The [method]/[mobile wireless device]/[computer program product] of claim [2]/[37]/[51] [further comprising:]/[wherein the operations further comprise]/[wherein the computer program instructions, when executed by the wireless device, further cause the wireless device to:] us[ing]/[e] the stored information to determine if the second unique identifier is present among the selected one or more of the unique identifiers from the second plurality of beacon transmissions.

Watanabe-Ribaudo-Behrens teaches Claims 26/38/79. *See* Sections XII.B.3.a.3-XII.B.3.a.5 and XII.B.2.i- XII.B.2.k. Ex-1002 ¶222.

s. Claims 27/39/81: The [method]/[mobile wireless device]/[computer program product] of claim [1]/[37]/[50] wherein [the]/[each] MAC address [or a respective beacon transmission] is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

Watanabe-Ribaudo-Behrens teaches Claims 27/39/81.

Ribaudo teaches that "[t]he ***unique MAC address*** of mobile device 12a ***may be beaconed*** when the BLUETOOTH interface of mobile device 12a is active." Ex-1007 ¶157. A POSITA would have understood that the MAC address for a Bluetooth-enabled device "is a unique ***48-bit Bluetooth device address (BD_ADDR)***." Ex-1021, 232; Ex-1002 ¶¶223-224. Behrens acknowledges this, teaching that "a UID may consist of or include a MAC (media access control) address, ***Bluetooth Device Address (i.e. BD_ADDR)***, or other unique or quasi-unique identifier." Ex-1008, 11:21-26. Behrens further teaches that "[i]n the case of

Bluetooth, various address parts and lengths (e.g., ***48-bit BD_ADDR***, 24-bit LAP, etc.), Friendly Names, as well as a combination thereof may be used." Ex-1008, 19:12-14.

While Ribaudo and Behrens are silent as to whether the MAC addresses of their respective Bluetooth-enabled devices are randomly-generated, it would have been obvious to use a randomly-generated MAC address in the Watanabe-Ribaudo-Behrens system. First, it was well-known in the art that a Bluetooth MAC address may be configured as either a static, public, or randomly-generated address that changes periodically, as a privacy-enhancing option. Ex-1002 ¶225. Second, Ribaudo itself teaches that "substantial privacy" is an important consideration. Ex-1007 ¶226. Accordingly, a POSITA would have been motivated to use a randomly-generated MAC address to advance Ribaudo's objective of enhancing privacy for the user. Further, a POSITA would have had a reasonable expectation of successfully implementing a randomly-generated MAC address, as it was a well-known approach, and was one of just two options for configuring a MAC address for a Bluetooth device. Ex-1002 ¶225.

t. Claim 28: The method of claim 3 wherein the short range protocol is derived from Bluetooth.

Watanabe-Ribaudo-Behrens teaches Claim 28. *See* Section XII.A.2.b. Ex-1006 ¶27; Ex-1002 ¶226.

u. Claim 46: The mobile wireless device of claim 37 wherein the operations further comprise: using the stored information to determine if the first unique identifier is present among the first selected one or more unique identifiers.

Watanabe-Ribaudo-Behrens teaches Claim 46. *See* Section XII.A.3.c. Ex-1002 ¶227.

v. Claim 58: The computer program product of claim 52 wherein the first further action additionally includes causing the wireless device to receive content from a server based upon information derived from the first unique identifier.

Watanabe-Ribaudo-Behrens teaches Claim 58. *See* Section XII.B.3f. Ex-1002 ¶228.

w. Claim 60: The computer program product of claim 51, wherein the computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to: after the first or second further action: send information to a server associated with an account for a user of the wireless device, to enable the server to send a message to an email address associated with the account for the user.

Watanabe-Ribaudo-Behrens teaches Claim 60. *See* Sections XII.A.3.f and XII.B.3.h. Ex-1002 ¶¶229-231.

XIII. CONCLUSION

Petitioner requests institution of IPR for Claims 1-10, 12-16, 18-19, 22-31, 34-44, 46, 48-62, 64-68, 72, and 75-83 of the '971 Patent based on each of the grounds in this Petition.

Respectfully Submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner certifies that this petition includes 13,999 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 May 30, 2025, 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:

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