

U.S. Patent No. 11,334,918	
1[pre]: A mobile wireless device comprising:	9[pre]: A method for facilitating the use of proximity beacons, the method executing within a mobile device, and the method comprising:
1[a]: a first radio;	
1[b]: a second radio;	
1[c]: one or more processors;	
1[d]: 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:	
1[e]: receiving, using the first radio, identifier related information associated with a proximity beacon service, from one or more servers;	9[a]: communicating between the mobile device and one or more servers and receiving, at the mobile device, identifier related information, using a first radio;
1[f]: (1) receiving, using the second radio, a plurality of short range transmissions, including a plurality of proximity beacon transmissions when the device is located within a detection range of one or more beacon transmitter devices associated with the proximity beacon service,	9[b]: (1) receiving, at the mobile device using a second radio, a plurality of short range transmissions, including a plurality of proximity beacon transmissions from one or more beacon transmitter devices associated with a proximity beacon service,
1[f]: (2) each of the proximity beacon transmissions including a respective MAC address, a respective unique identifier, and a Proximity Beacon Service Identifier (PBSI);	9[b]: (2) each of the proximity beacon transmissions including a respective MAC address, a respective unique identifier (UID), and a Proximity Beacon Service Identifier (PBSI);
1[g]: determining if a particular short range transmission of the plurality of short range transmissions a) includes a MAC address, and b) includes the proximity beacon service identifier (PBSI) and if c) the PBSI indicates the particular short range transmission is a proximity beacon transmission associated with the proximity beacon service; then:	9[c]: a) determining that a particular short range transmission of the plurality of short range transmissions includes a MAC address, b) determining that the Proximity Beacon Service Identifier (PBSI) is present, and c) determining that the PBSI indicates the particular short range transmission is a proximity beacon transmission associated with the proximity beacon service; and when the three determining steps a) b) and c) are each true, then

1[h]: determining if an entity or object associated with the proximity beacon service is in proximity to the mobile wireless device by utilizing the identifier related information and the unique identifier	9[d]: d) determining that an entity or object associated with the proximity beacon service is within proximity to the mobile device, by utilizing the identifier related information and the unique identifier.
2: The mobile wireless device of claim 1, wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.	11: The mobile wireless device of claim 9 wherein the MAC address is selected from a group consisting of (a) a randomly generated 48 bit number matching a format of a MAC address and (b) a Bluetooth BD_ADDR.
3[pre]: The mobile device of claim 1, wherein the one or more processors further execute the instructions to perform operations including:	10[pre]: The method of claim 9,
3[a]: receiving, by the second radio, a first proximity beacon transmission including a first MAC address and a first unique identifier at a first time; and	10[a]: wherein a first one of the plurality of proximity beacon transmissions received at a first time includes a first unique identifier, and
3[b]: receiving, by the second radio, a second proximity beacon transmission including a second MAC address and a second unique identifier at a second time, the second MAC address being different from the first MAC address and the second unique identifier being different from the first unique identifier; and	10[b] wherein a second one of the plurality of proximity beacon transmissions received at a second time includes a second unique identifier being different from the first unique identifier; and
3[c]: associating the first and second unique identifier with a single beacon transmitter device.	10[c]: associating both the first unique identifier and the second unique identifier with a particular entity or object in proximity to the mobile device.
8[pre]: The mobile wireless device of claim 1 wherein the one or more processors further execute the instructions to perform operations including:	12[pre]: The method of claim 9
8[a]: receiving, via a second radio, the plurality of proximity beacon transmissions further includes receiving a first unique identifier at a first time that is different from a second unique identifier received at a second time; and	12[a]: wherein a first one of the plurality of proximity beacon transmissions is received at a first time and includes a first unique identifier and first MAC address, and the Proximity Beacon Service (PBSI); and

	12[b]: where a second one of the plurality of proximity beacon transmissions received at a second time includes a second unique identifier different from the first unique identifier and second MAC address different from the first MAC address, and the Proximity Beacon Service Identifier; and
8[b]: associating the first and second unique identifier with a single beacon transmitter device.	12[c]: associating both the first unique identifier and the second unique identifier with the same entity or object in proximity to the mobile device.
31[pre]: The mobile wireless device of claim 3 wherein the one or more processors further execute the instructions to perform operations including:	
31[a]: receiving, via a second radio, the plurality of proximity beacon transmissions further includes receiving a first unique identifier at a first time that is different from a second unique identifier received at a second time; and	
31[b]: associating the first and second unique identifier with a single beacon transmitter device.	
4: The mobile wireless device of claim 1, wherein the one or more processors further execute the instructions to perform operations including: further determining that at least one beacon transmitter device associated with the proximity beacon service is in proximity to the mobile wireless device, by utilizing an action function including one or more previously downloaded unique identifiers.	
5: The mobile wireless device of claim 1, wherein the one or more processors further execute the instructions to perform operations including determining, based upon at least a portion of the identifier related information, that at least one beacon transmitter is a broadcast device having a predetermined location.	

6: The mobile wireless device of claim 1, wherein the identifier related information comprises application software for execution upon the mobile wireless device, and the one or more processors further execute the instructions to perform operations including sending of the unique identifier by the mobile wireless device to at least one server of the one or more servers; and in response to the sending of the unique identifier, downloading the application software.	
7[pre]: The mobile wireless device of claim 3, wherein	
7[b]: further determining that at least one beacon transmitter device associated with the proximity beacon service is further matched with an entity included within the list of contact information based upon comparing a contact identifier information with at least a portion of the unique identifier, and	
7[c]: the mobile wireless device, upon determining there is a match, allowing further communications with the detected beacon transmitter device associated with the entity included within the list of contact information, wherein the further communications utilize the first radio.	
30[pre]: The mobile wireless device of claim 1 wherein:	
30[a]: the identifier related information comprises a list of contact information, and the one or more processors further execute the instructions to perform operations including:	
30[b]: further determining that at least one beacon transmitter device associated with the proximity beacon service is further matched with an entity included within the list of contact information based upon comparing a contact identifier information with at least a portion of the unique identifier, and;	

30[c]: the mobile wireless device, upon determining there is a match, allowing further communications with the detected beacon transmitter device associated with the entity included within the list of contact information, wherein the further communications utilize the first radio.	
	17: The method of claim 9, further comprising: receiving, using the first radio, access code information by the mobile device from at least one of the servers; and utilizing the access code information to gain access to the entity or object determined to be in proximity to the mobile device.
28: The mobile wireless device of claim 1, wherein the receiving of the identifier related information, using the first radio, is performed in response to the one or more processors executing instructions for: sending at least the unique identifier to at least one of the one or more servers using the first radio.	18: The method of claim 9, wherein receiving the identifier related information, using the first radio, is performed in response to sending at least the unique identifier to at least one of the one or more servers using the first radio.
15. The mobile wireless device of claim 1, wherein the instructions further comprise: preventing the sending of the unique identifier, using the first radio, to the one or more servers, based upon previous detections of the respective unique identifier associated with the proximity beacon transmission.	13. The method of claim 9, further comprising preventing the sending of the unique identifier, using the first radio, to the one or more servers, based upon previous detections of the respective unique identifier associated with the proximity beacon transmission.
14: The mobile wireless device of claim 1, wherein the instructions further comprise: sending the unique identifier, using the first radio, to at least one server of the one or more servers, and receiving further information relating to an object or entity associated with being within proximity to the mobile device.	19: The method of claim 9, additionally comprising: sending the unique identifier, using the first radio, to at least one server of the one or more servers, and receiving further information relating to an object or entity associated with being within proximity to the mobile device.
	20: The method of claim 19, wherein the further information relates to one or more of the following: a

	loyalty program; a payment service; or a coupon relating to an entity in proximity to the mobile device; or advertising content.
	22: The method of claim 19, wherein the further information relates to a nearby user of an application on another device, in common with an application on the mobile device.
	23. The method of claim 22, wherein the application is a multiuser game.
16: The mobile wireless device of claim 1, wherein the instructions further comprise controlling further communications between the mobile device and at least one device or server associated with an entity or object in proximity to the mobile device.	24: The method of claim 9, additionally comprising: controlling further communications between the mobile device and at least one device or server associated with an entity or object in proximity to the mobile device.
27: The mobile wireless device of claim 1, wherein the one or more processors further execute the instructions to perform the operations for determining that an entity or object is within proximity by further: comparing the identifier related information with the unique identifier or information derived from the unique identifier.	25: The method of claim 9, wherein the step of determining that an entity or object is within proximity further comprises: comparing the identifier related information with the unique identifier or information derived from the unique identifier.
	26 <pre>[pre]</pre> : The method of claim 9, additionally comprising:
	26 <pre>[a]</pre> : sending the unique identifier, using the first radio, to at least one server of the one or more servers, and wherein the one or more servers perform the following steps:
	26 <pre>[b]</pre> : associating an object or entity as being within proximity to the mobile device;
	26 <pre>[c]</pre> : storing a user's purchasing practices or requests from the one or more servers, related to the associated

	object or entity information as stored proximity user behavior;
	26[d]: retrieving a stored user email address associated with an account associated with the mobile device; and
	26[e]: sending an email, addressed to the user email address containing customized content based upon the stored proximity user behavior.
	29: The method of claim 9, wherein the proximity beacon transmissions are received, at the mobile device, without requiring the mobile device to first perform a step of transmitting to the one or more beacon transmitter devices from which the plurality of proximity beacon transmissions are received.