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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	10001-03836 US
	Application Number	
Title of Invention	Dynamic Real-Time Tiered Client Access	

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Title of Invention	Dynamic Real-Time Tiered Client Access	

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Title of the Invention	Dynamic Real-Time Tiered Client Access		
Attorney Docket Number	10001-03836 US	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		**Suggested Figure for Publication (if any)**	

Publication Information:

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☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	13491417	2012-06-07
Prior Application Status	Patented		Remove

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	10001-03836 US
	Application Number	
Title of Invention	Dynamic Real-Time Tiered Client Access	

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13491417	Continuation of	11620577	2007-01-05	8219129	2012-07-10

Prior Application Status	Expired	Remove	
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11620577	non provisional of	60760362	2006-01-06

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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

Authorization to Permit Access:

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	10001-03836 US
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Clear

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Country [i]	US	Postal Code	97701
Phone Number		Fax Number	

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Title of Invention	Dynamic Real-Time Tiered Client Access	

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Signature	/Matthew Holmes/			Date (YYYY-MM-DD)	2013-05-02
First Name	Matthew	Last Name	Holmes	Registration Number	65160

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	10001-03836 US
	Application Number	
Title of Invention	Dynamic Real-Time Tiered Client Access	

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DYNAMIC REAL-TIME TIERED CLIENT ACCESS

INVENTORS: DAVID L. BROWN AND FRED S. HIRT

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority, under 35 U.S.C. § 120, to U.S. Patent Application No. 13/491,417, filed June 7, 2012 and entitled "Dynamic Real-Time Tiered Client Access," which claims the benefit, under 35 U.S.C. § 120, of U.S. Patent Application No. 11/620,577, filed January 5, 2007 and entitled "Dynamic Real-Time Tiered Client Access," which claims the benefit, under 35 U.S.C. § 119, of U.S. Provisional Patent Application No. 60/760,362, filed January 6, 2006 and entitled "Securing Transactions Between an Electric Key and Lock Within Proximity of Each Other," the entireties of which are hereby incorporated by reference.

BACKGROUND

[0002] Optimizing sales transactions, providing secure access to physical and digital assets, uniquely identifying individuals, and generally improving communications and data exchange are challenges faced by many businesses and organizations. Ensuring that these processes are safe, efficient, reliable, and simple is important to companies, merchants, service providers, users, and consumers. Well-known technologies such as user-specific magnetic cards (e.g., credit and debit cards, employee badges), and more recent developments such as contactless cards designed to allow access or authorization when placed near a compatible reader, are examples of attempts to address the need to instill efficiency and integrity in, for example, the general classes of transactions described above.

SUMMARY

[0003] According to at least one aspect of one or more embodiments of the present invention, a method of facilitating data exchange includes: assigning a first specific time slot for a first client device to wirelessly communicate with a fixed proximity-based reader device; and assigning a second specific time slot for a second client device to wirelessly communicate with the fixed proximity-based reader device.

[0004] According to at least one other aspect of one or more embodiments of the present invention, an apparatus includes: a physical, portable key device adapted to wirelessly communicate data with a fixed reader device when located in a wireless coverage area of the fixed reader device, where the key device is arranged to communicate with the fixed reader device during a time slot determined based on a bit field stored in the key device.

[0005] According to at least one other aspect of one or more embodiments of the present invention, a system includes: a fixed reader device operatively connected to a network device and having a first wireless coverage range within a second wireless coverage range; and a portable client device arranged to wirelessly communicate data with the fixed reader device when the client device is within the first wireless coverage range, where a time slot during which the client device communicates data with the fixed reader device is determined based on synchronization information received by the client device.

[0006] According to at least one other aspect of one or more embodiments of the present invention, a system includes: a network device arranged to wirelessly broadcast synchronization information in a first wireless coverage range; and a portable client device adapted to wirelessly communicate data with a reader device when the client device is located in communication proximity of the reader device, where the client device is arranged to receive data from the

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network device during a time slot determined based on the synchronization information.

[0007] According to at least one other aspect of one or more embodiments of the present invention, a system includes: a network device configured to wirelessly broadcast synchronization information; and a portable client device configured to wirelessly receive the synchronization information, where the received synchronization information includes information assigning a time slot during which the client device can receive data from the network device.

[0008] According to at least one other aspect of one or more embodiments of the present invention, a method of facilitating data exchange includes: wirelessly broadcasting synchronization information to a portable client device, where the synchronization information includes information assigning a time slot during which the client device can receive data; and wirelessly broadcasting data for reception by the client device during the time slot.

[0009] The features and advantages described herein are not all inclusive, and, in particular, many additional features and advantages will be apparent to those skilled in the art in view of the following description. Moreover, it should be noted that the language used herein has been principally selected for readability and instructional purposes and may not have been selected to circumscribe the present invention.

BRIEF DESCRIPTION OF DRAWINGS

[0010] Figure 1 shows a single wireless cell in which a reader decoder circuit (RDC) and a personal digital key (PDK) are present.

[0011] Figure 2 shows partially overlapping RDC cells.

[0012] Figure 3 shows synchronized partially overlapping RDC cells.

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[0013] Figure 4 shows a synchronized multi-cell system in accordance with one or more embodiments of the present invention.

[0014] Figure 5 shows a PDK in accordance with one or more embodiments of the present invention.

[0015] Figure 6 shows a portion of the PDK shown in Figure 5.

[0016] Figure 7 shows a portion of the PDK shown in Figure 5.

[0017] Figure 8 shows an RDC in accordance with one or more embodiments of the present invention.

[0018] Figure 9 shows an RDC in accordance with one or more embodiments of the present invention.

[0019] Figure 10 shows an arrangement of a timeslot in accordance with one or more embodiments of the present invention.

[0020] Figure 11 shows a superframe in accordance with one or more embodiments of the present invention.

[0021] Figure 12 shows a coordinator superframe in accordance with one or more embodiments of the present invention.

[0022] Figure 13 shows an overall framing structure in accordance with one or more embodiments of the present invention.

[0023] Figure 14 shows an RDC beacon for use in a single cell system in accordance with one or more embodiments of the present invention.

[0024] Figure 15 shows a single cell system in accordance with one or more embodiments of the present invention.

[0025] Figure 16 shows a PDK-RDC handshake in accordance with one or more embodiments of the present invention.

[0026] Figure 17 shows a coordinator beacon configuration in accordance with one or more embodiments of the present invention.

[0027] Figure 18 shows a PDK transmit timeslot enable operation in accordance with one or more embodiments of the present invention.

[0028] Figure 19 shows a location tracking system configuration in accordance with one or more embodiments of the present invention.

[0029] Figure 20 shows a coordinator RDC (CRDC) location tracking handshake in accordance with one or more embodiments of the present invention.

[0030] Figure 21 shows a configuration in which RDCs and PDKs are coordinated within a CRDC cell in accordance with one or more embodiments of the present invention.

[0031] Figure 22 shows a CRDC framing and PDK timeslot response operation in accordance with one or more embodiments of the present invention.

[0032] Figure 23 shows a CRDC beacon and PDK response handshake in accordance with one or more embodiments of the present invention.

[0033] Figure 24 shows a PDK/RDC association in a CRDC cell in accordance with one or more embodiments of the present invention.

[0034] Figure 25 shows an RDC beacon transmission in accordance with one or more embodiments of the present invention.

[0035] Figure 26 shows a deep sleep state diagram in accordance with one or more embodiments of the present invention.

[0036] Figure 27 shows an authorization denial handshake operation in accordance with one or more embodiments of the present invention.

[0037] Figure 28 shows an authorization grant and association handshake in accordance with one or more embodiments of the present invention.

[0038] Figure 29 shows a single cell with multiple PDK access in accordance with one or more embodiments of the present invention.

[0039] Figure 30 shows multiple single cell RDCs with cell overlap in accordance with one or more embodiments of the present invention.

[0040] Figure 31 shows a floor layout and cell distribution in accordance with one or more embodiments of the present invention.

[0041] Figure 32 shows a gambling table with RDCs in accordance with one or more embodiments of the present invention.

[0042] Figure 33 shows a CRDC beacon to central server flow in accordance with one or more embodiments of the present invention.

[0043] Figure 34 shows a CRDC beacon to central server handshake in accordance with one or more embodiments of the present invention.

[0044] Figure 35 shows a configuration of overlapping CRDC cells in accordance with one or more embodiments of the present invention.

[0045] Figure 36 shows a c-beacon handoff for RDC-PDK communication in accordance with one or more embodiments of the present invention.

[0046] Figure 37 shows a PDK wakeup and response state flow in accordance with one or more embodiments of the present invention.

[0047] Figure 38 shows a configuration of an electronic game with an integrated RDC in accordance with one or more embodiments of the present invention.

[0048] Figure 39 shows an electronic game player tracking and game enable handshake in accordance with one or more embodiments of the present invention.

[0049] Figure 40 shows an electronic game player association handshake in accordance with one or more embodiments of the present invention.

[0050] Figure 41 shows a configuration of an electronic game with an integrated RDC in accordance with one or more embodiments of the present invention.

[0051] Figure 42 shows an electronic game player tracking and game enable handshake in accordance with one or more embodiments of the present invention.

[0052] Figure 43 shows an electronic game player association handshake in accordance with one or more embodiments of the present invention.

[0053] Each of the figures referenced above depict an embodiment of the present invention for purposes of illustration only. Those skilled in the art will readily recognize from the following description that one or more other embodiments of the structures, methods, and systems illustrated herein may be used without departing from the principles of the present invention.

DETAILED DESCRIPTION

[0054] In the following description of embodiments of the present invention, numerous specific details are set forth in order to provide a more thorough understanding of the present invention. However, it will be apparent to one skilled in the art that the present invention may be practiced without one or more of these specific details. In other instances, well-known features

have not been described in detail to avoid unnecessarily complicating the description.

[0055] In general, embodiments of the present invention relate to a technique for wirelessly communicating with a plurality of client devices without data collision. Particularly, in one or more embodiments, individual client devices are assigned time slots during the client devices may wirelessly communicate.

[0056] At perhaps a most basic level, one or more embodiments includes a personal digital key ("PDK") and a reader decoder circuit ("RDC"). In general, a PDK is a portable wireless device that may be conveniently carried by an individual to facilitate wireless tracking and/or allow the individual to wirelessly access various applications, assets, and/or services. As further described in detail below with reference to Figures 5 – 7, a PDK may be any device that (i) may be worn, placed in a pocket, wallet, or purse of a user, or attached to equipment, (ii) has a bi-directional wireless communications transceiver, and (iii) stores public and/or secret electronic identification numbers, as possibly some set of cryptographic keys. The form factor of the PDK is not limiting, so long as the PDK may be portably, and preferably conveniently and seamlessly, carried by an individual. For example, a PDK may be in the form of a "key fob" or a card, or in certain embodiments, a PDF may actually be integrated with or implemented in another device, such as a watch or mobile computing device (e.g., cellular phone, personal digital assistant (PDA)).

[0057] An RDC, as used in one or more embodiments, is a device that can wirelessly interact with a PDK to link the PDK user with various applications, assets, and/or services. The RDC may be a fixed access point serving as a gatekeeper for a PDK requesting access to a particular system. An RDC may be used in various settings and/or applications. For example, an RDC may be physically incorporated into a casino floor itself, an electronic game, a doorway,

a pedestrian traffic monitoring point, a personal computer application, an e-commerce device (e.g., an automatic teller machine (ATM)), or any other application requiring a secure transaction or access control.

[0058] Further, secure data exchange for various financial and/or retail applications may be facilitated through use of a PDK and RDC in accordance with one or more embodiments. For example, a purchasing system may be implemented whereby a consumer can purchase goods or services using his/her personal "key" (e.g., a PDK) based on the key being in detectable wireless proximity of a reader device (e.g., an RDC). The purchase transaction may then be carried out based on some data exchange between the key and the reader device, where the key stores accessible, and possibly encrypted or encoded, information about the consumer (e.g., name, address, phone number, bank account information, biometric information, credit or debit card information). The validation or authentication of the consumer may occur either on the key itself and/or by the reader device. In the case of "on-key" validation, for example, the reader device may pass some information about the consumer (e.g., a biometric input, such as fingerprint data) to the key, which then matches the data provided by the reader device with permanently stored secure data about the consumer.

[0059] Various other applications or uses involving any number of PDK and RDC devices are possible in accordance with one or more embodiments. Accordingly, while examples of scenarios and applications are described herein for purposes of illustration and clarity, the present invention is not limited to any particular application, scenario, setting, or use.

Single Cell Operation of the RDC and PDK

[0060] Now referring to Figure 1, it shows a single cell **10** in which, at some point in time, an RDC **12** and a PDK **14** are present. The RDC **12** may be some fixed device that has a

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cell radius defined by its wireless coverage boundary. When an individual carrying the PDK **14** comes into proximity of the RDC **12** by entering a coverage area of the RDC **12**, a wireless communications session is initiated between the PDK **14** and the RDC **12**. If the RDC **12** determines that the PDK **14** is authorized to communicate, information between the PDK **14** and the RDC **12** may be securely exchanged. Information securely obtained from the user's PDK **14** may then be used locally or sent through a back-end communications channel to a central server (not shown). When the transaction completes or when the PDK **14** leaves the coverage area of the RDC **12**, wireless communication between the RDC **12** and the PDK **14** ceases. Thereafter, the RDC **12** may remain idle (i.e., be in a "tracking" mode) until a PDK again enters the cell **10**.

Unsynchronized Multi-Cell Operation of Multiple RDCs and PDKs

[0061] Now referring to Figure 2, in certain implementations, multiple RDC cells **20**, **22**, **24** may exist in an area. The RDCs in the multiple cells **20**, **22**, **24** may or may not be aware of each other, but are able to interact with one or more PDKs. The PDKs, in turn, are capable of interacting with the RDCs. As shown in Figure 2, there are three partially overlapping RDC cells **20**, **22**, **24**. An RDC **26**, **28**, **30** in cells **20**, **22**, **24**, respectively, is independent and may not be in association with the other RDCs. Although the cells **20**, **22**, **24** partially overlap, each RDC **26**, **28**, **30** is capable of wirelessly communicating with any PDK **29**, **31** within its cell boundary.

[0062] In one or more embodiments, the RDC **26**, **28**, **30** is capable of determining if energy is present on any given wireless channel. The RDC **26**, **28**, **30** may then determine the best channel to operate on and continue to place an identification marker (or "beacon") out for any PDK **29**, **31** that enters its cell boundary.

[0063] The PDK **29**, **31** itself may be responsible for locating an RDC **26**, **28**, **30** by searching through available wireless channels, communicating with an RDC **26**, **28**, **30**, and

notifying the RDC **26**, **28**, **30** of its presence. In an implementation where two RDCs can communicate with one another (e.g., RDCs **26**, **28** in cells **20**, **22** shown in Figure 2), the RDCs may select different communication frequencies. However, in the case where cells overlap, but each RDC cannot directly communicate with one another (e.g., RDCs **28**, **30** in cells **22**, **24** shown in Figure 2), any PDK intending to access an RDC, may have to alert the RDC of possible collisions on the wireless channel on which the RDC is operating.

Synchronized Multi-Cell Operation of Multiple RDCs and PDKs

[0064] In certain implementations, multiple RDCs may be placed to allow an overlap of cells between each adjacent RDC within a confined area. This permits each RDC to be aware of its surrounding RDCs, thereby allowing synchronization of each RDC to the other. For example, now referring to Figure 3, there are shown three partially overlapping RDC cells **40**, **42**, **44** with RDCs **46**, **48**, **50**. The cell **40**, **42**, **44** of each respective RDC **46**, **48**, **50** overlaps the cell of the adjacent RDC **46**, **48**, **50**. In such a manner, each RDC **46**, **48**, **50** may initiate wireless communication with an adjacent RDC **46**, **48**, **50**. This begins a negotiation process among the RDCs **46**, **48**, **50** to determine which RDC **46**, **48**, **50** should be the coordinator and on what channel to communicate.

[0065] Although any of the RDCs **46**, **48**, **50** may be the coordinator, in the example shown in Figure 3, RDC **48** in cell **42** may be a favorable candidate. Its selection permits ubiquitous coverage of the RDCs **46**, **48**, **50** shown in Figure 3, additionally providing multiple transactions and timing alignment through a "daisy chain" whereby RDC **46** synchronizes RDC **48** and RDC **48** synchronizes RDC **50**.

[0066] Still referring to Figure 3, each RDC **46**, **48**, **50** may also share frequency and timeslot information among each other and with one or more PDKs. It is noted that if a PDK is

located at an edge of, for example, cell **40**, that PDK may still monitor the other channels that adjacent RDCs **48**, **50** are operating on, but may not have access to these RDCs. Thus, in a configuration such as that shown in Figure 3, a PDK may be forced to consume more energy due to the monitoring of multiple channels. Further, it is noted that as cell density increases, more collisions may begin occurring and/or active communication times may increase.

Coordinated Multi-Cell Operation

[0067] Now referring to Figure 4, it shows an exemplar synchronized (or "coordinated") multi-cell system **60** in accordance with one or more embodiments. As will be apparent from the description below, a synchronized multi-cell system may provide ubiquitous PDK and RDC synchronization as well as PDK battery conservation within the system **60**. Further, in addition to ubiquitous synchronization, channel and frequency capacity may both be coordinated, thereby reducing collisions while increasing system throughput.

[0068] Turning now to Figure 4 particularly, a coordinator RDC ("CRDC") **62** has ubiquitous coverage of a plurality of cells **64**, **66**, **68** in the system **60**. In one or more embodiments, the CRDC **62** provides beacon transmissions, which can be used to synchronize a plurality of devices within the coverage area **76** of the CRDC **62**. In other words, by providing wide-area coverage, a plurality of devices, both RDCs **70**, **72**, **74** and PDKs (shown, but not labeled in Figure 4), in the coverage area **76** are able to monitor a wireless transmission beacon broadcast by the CRDC **62** and determine how and when to communicate in a coordinated manner. Further, in one or more embodiments, the CRDC **62** may broadcast additional information including, but not limited to, a beacon transmission rate, framing information, channel information, system identification, and/or cluster identification. Moreover, it is noted that although the CRDC **62** may provide timing and certain system related information, RDCs

70, **72**, **74** and PDKs may still communicate among themselves.

[0069] As described above with reference to Figures 1 – 4, there are at least three different types of devices (or software entities) that may be used, for example, in a synchronized multi-cell system, such as that shown in Figure 4. A PDK is a trackable device having secure electronic keys and that may be portably carried by a user. An RDC is a device that acts as a gatekeeper controlling access of a PDK to a particular system. A CRDC is a device that is used to synchronize one or more RDCs and PDKs within a particular geographic area formed of either a single cell or multiple cells. A more detailed description of each of these components is now provided below.

PDK

[0070] Now referring to Figure 5, it shows an example PDK **80** in accordance with one or more embodiments. Based on a specific application or use of the PDK **80**, the PDK **80** may have different configurations for interacting with the PDK user. For example, the PDK **80** may have no user input mechanism or display, may have a single button input mechanism, may have a multi-button input mechanism, may have a biometric input mechanism, and/or may have an interactive user input mechanism and/or display.

[0071] As shown in Figure 5, the PDK **80** has a wireless radio frequency (RF) media access control (MAC) and physical layer device **82** that facilitates bi-directional communications with external wireless RF devices, such as an RDC (not shown). In one or more embodiments, the wireless RF MAC and physical layer device **82** may communicate according to an IEEE 802.15.4 protocol. However, in one or more other embodiments, the PDK **80** may be capable of communicating according to one or more different wireless protocols.

[0072] The PDK **80** also has a service and application layer controller **84** that includes a

MAC portion **94** that serves as an interface with the wireless RF MAC and physical layer device **82**. Further, the service and application layer controller **84** also includes portions that provide specific functions used to protect electronic keys and services of the PDK **80**. Further still, the service and application layer controller **84** may support an optional user interface **86**, which if implemented, allows user interaction with the PDK **80**. A cryptography engine **88** may also be resident on the PDK **80**.

[0073] Now also referring to Figure 6, it shows a non-volatile memory storage **90** and a volatile memory storage **92** of the PDK **80**. These two devices **90**, **92** are related to security storage. In one or more embodiments, these devices **90**, **92** may be accessible by an RDC (not shown) having the appropriate security algorithms and by private service providers having the correct security information. However, in one or more other embodiments, certain secured data may not be wirelessly communicated at all, in which case, validation or authorization occurs on the PDK **80** itself.

[0074] Specifically as to the non-volatile memory storage **90**, a public serial number may be used to identify the PDK **80** and allow secure look-up of a secure serial number and a cryptography key via a remote server (not shown). The secure serial number may be thought of as being equivalent to, for example, encoded user identification information stored in a magnetic strip of a credit card, whereby such information is not visible to the outside world. The cryptography key may be used to allow decoding of the secure serial number from, for example, an RDC (not shown).

[0075] Further, it is noted that in one or more embodiments, the non-volatile memory storage **90** and associated parameter lengths may be dynamically assigned, with overall constraints depending on, for example, available memory in the PDK **80**.

[0076] Now, specifically as to the volatile memory storage **92**, this area may be used for security and may allow a service provider to store a profile containing secret keys and other secure information, such as privilege information. A service provider identification value may be stored to allow the service provider to easily identify the user. In addition, a service provider service identification value may be stored and used to allow that service provider to access that information. The PDK **80** validates that service provider identification value via the service provider secret key before allowing access to that service provider's profile area in the PDK **80**. Further, as shown in Figure 6, the volatile memory storage **92** may have a number of service provider profiles.

[0077] Now also referring to Figure 7, the service provider profile area may be of a variable length and allow a service provider the flexibility to store various parameters. The length may be determined by a byte count following the service provider's secret key in the memory area as shown in Figure 7.

RDC

[0078] Next, turning to a more detailed description of an RDC **100** according to one or more embodiments, reference is made below to Figures 8 and 9. In general, an RDC **100**, as described above, may be fixed and used to allow a PDK access into a particular system (e.g., gaming/casino system, financial institution, retail system). The RDC **100** may have different configurations to support different types of secure transactions. Some examples of applications and uses of RDCs include, but are not limited to, casino slot machines and gaming consoles, secure entryway control, user/equipment location tracking, personal computers and components thereof (e.g., disk drives), financial institution interactions, and retail purchasing. In the case of a personal computer, or any computer system for that matter, a reader device, such as an RDC,

may be used to control access to certain data stored in the computer system. Thus, in such embodiments, an RDC **100** may be thought of as providing a form of digital content management.

[0079] In certain cases, the RDC **100** effectively acts as a gatekeeper allowing authorized individuals access to specific information or transactions. In other cases, because an RDC **100** may use proximity detection for determining if a PDK is within a particular geographical area, the RDC **100** may also be used for tracking one or more PDKs within a given area or network. In still other cases, an RDC **100** may be used for both location tracking and secure transaction purposes.

[0080] Figure 8 shows a type of RDC **100** that uses a single wireless RF MAC and physical layer device **102**. In RDC **100**, communications are passed through the single wireless RF MAC and physical layer device **102**. The single wireless RF MAC and physical layer device **102** facilitates bi-directional communication with one or more external RF wireless devices, such as a PDK (not shown). Thus, the single wireless RF MAC and physical layer device **102** may communicate with both PDKs according to assigned time slots (further described below) and one or more CRDCs (described in further detail below). Further, it is noted that in one or more embodiments, the single wireless RF MAC and physical layer device **102** may wirelessly communicate according to an IEEE 802.15.4 protocol. However, in one or more other embodiments, the RDC **100** may be capable of communicating according to one or more different wireless protocols.

[0081] The RDC **100** also has a service and application layer controller **104**. The service and application layer controller **104** has a MAC portion **106** specific to a wireless protocol of the RDC **100**. The service and application layer controller **104** may further provide functions related

to associating and tracking PDKs (not shown), as well as providing information back to a service provider.

[0082] The service and application layer controller **104** includes system parameters and configuration information **108** that may be used to identify the RDC **100** and define how the RDC **100** operates within a given environment. Further, the system parameters and configuration information **108** may define how the RF link is time slotted and/or how RF frequencies are used in the system. In one or more embodiments, these values may be optimized to reduce power consumption within one or more PDKs (not shown).

[0083] Still referring to the RDC **100** shown in Figure 8, a cryptography engine **110** may also be present. One or more of various storage elements may also exist in the service and application layer controller **104**. A secure key storage area **112** may be programmed to define public, secret, and/or cryptography keys for the RDC **100**.

[0084] Further, in one or more embodiments, the service and application layer controller **104** may have additional memory areas, one or more of which may dynamically change dependent on system changes and wireless PDK connections. A volatile service provider storage **114** may allow a service provider to store semi-static information related to a specific PDK (not shown) or group of PDKs (not shown) for real-time access for those devices. An example might relate to a hotel room door lock. With a hotel room door, service provider information related to a PDK may be stored in the RDC. When a user comes within proximity of the door, the door could unlock. Thus, in this example, the RDC is not required to interface with a back-end server in real-time, thereby reducing bandwidth consumption to the back-end server, while allowing the user immediate access. Moreover, in one or more embodiments, the RDC may have a connection to a network or other infrastructure for receiving control signals as to which PDKs

should be allowed to unlock the door.

[0085] The service and application layer controller **104** may also have a proximity tracking PDK list **116** that includes PDK identity information, signal quality metrics, and/or time stamps for each PDK (not shown) that is in proximity of the RDC **100**. Such information may be used in the RDC **100** to perform an operation and/or may be relayed to a back-end server when, for example, location tracking is desired.

[0086] Still referring to Figure 8, the service and application layer controller **104** may also have an associated PDK parameter storage **118**. The associated PDK parameter storage **118** may contain a list of one or more PDKs (not shown) actively performing transactions with the RDC **100**. It is noted that in one or more embodiments, although such transactions are performed with the RDC **100**, the actual processing result of the RDC **100** to/from PDK transaction may be passed to a back-end server for further processing.

[0087] A service provider interface **120** may allow both control and query of the RDC **100**. The service provider interface **120** may further provide the transport for keys from a PDK (not shown). In one or more embodiments, the service provider interface **120** may use a universal asynchronous transmitter receiver (UART) interface and may allow some level of control and status of the RDC **100**.

[0088] An external service provider controller **122** may be attached to the service provider interface **120** with a system stack **124** residing in the external service provider controller **122**. The system stack **124** may allow a third party to easily interface with the RDC **100**, possibly requiring function calls to the system stack **124**. Further, the external service provider controller **122** may provide translation of data. It is still further noted that the external service provider controller **122** and the RDC **100** may reside on the same physical component (e.g.,

circuit board).

[0089] Now referring to Figure 9, it shows another type of RDC **130**, which has an additional wireless RF MAC and physical layer device **132**. In this configuration, components having like reference numbers as those reference numbers in Figure 8 function identically or similarly to the corresponding components in Figure 8. The additional wireless RF MAC and physical layer device **132** may be used to maintain synchronization with a CRDC (not shown) and pass networking related information, while the other wireless RF MAC and physical layer device **102** may be used to communicate with one or more PDKs (not shown) within a cell of the RDC **130**. Further, the service and application layer controller **104** may have an additional MAC portion **134** to interface with the additional wireless RF MAC and physical layer device **132**.

[0090] Still referring to the RDC **130**, the use of dual wireless transceivers **102**, **132** may allow for increased throughput and efficient use of the RF spectrum available to the system. Thus, in other words, these multiple wireless links allow simultaneous reception of data from client devices (e.g., PDKs) and of CRDC timing information on separate channels, thereby eliminating the need for back-channel synchronization of the network. Further, the multiple wireless links may allow for the simultaneous proximity sensing of multiple client devices (e.g., PDKs) in a "tracking" mode, along with the association of a client device with one particular cell for wireless application (e.g., secure transaction) purposes. For example, an RDC serving as a wireless player tracking device on a casino floor may, while keeping track of multiple transient players entering and leaving the zone of coverage of that particular tracking device, invite a particular player to begin a gaming session. This session may also include the exchange of player information with, for example, both the game and its back-end server to allow credit for games played and money spent. In another scenario, the system may facilitate another entire

suite of applications, such as, for example, unlocking a hotel room door, while simultaneously keeping track of unrelated client devices coming and going within its coverage range.

CRDC

[0091] Next, turning to a more detailed description of a CRDC according to one or more embodiments, a CRDC may, for example, be an RDC of either of the types described above with reference to Figures 8 and 9. At least one difference, however, between a CRDC and an RDC is that the CRDC has increased RF power output, or more generally, casts a broader range of wireless coverage. Another difference is that, in one or more embodiments, a CRDC may not communicate bi-directionally with a PDK, whereas an RDC of the types described above with reference to Figures 8 and 9 may. Moreover, a CRDC may be capable of communicating with another CRDC, and may also be capable of communicating with an RDC. It is noted that CRDC-CRDC communication may allow for frame synchronization and frequency planning without requiring a wired connection between the CRDCs. The same may be true for CRDC-RDC communications. In certain implementations, it may occur that CRDC cell boundaries do not overlap, and thus, the corresponding CRDCs may not be able to directly communicate with another. In this case, an RDC that is between the cells may communicate with both CRDCs and act as a communication bridge to pass frequency and other control information in an effort to coordinate the system.

[0092] Still describing the general application and use of a CRDC in accordance with one or more embodiments, the CRDC may serve as a stand-alone wireless beacon that may be used to coordinate the timing and activities of individual, physically separated wireless providers (e.g., RDCs) with defined coverage areas, along with their clients (e.g., PDKs) in an autonomous, wireless proximity sensing and data transfer network. A CRDC may also be used to propagate

system-wide information (e.g., periodic changes in cryptographic keys), thereby relieving traffic otherwise loading a wired back-end network linking individual cells to the back-end system. Thus, the CRDC may act as a system-wide master clock across multiple cells that may not be close enough to synchronize with each other directly without a wired connection.

Wireless Protocol

[0093] As described above, a system in accordance with one or more embodiments may rely, or at least partly be based, on an IEEE 802.15.4 protocol. In relation to a protocol usable in one or more embodiments, a "timeslot" is defined as a period of time that information is communicated between two devices. Figure 10 shows an example of portions of a timeslot in accordance with one or more embodiments. The timeslot is divided into a frame (or physical packet data unit (PPDU)) and inter-frame spacing (IFS). The frame includes synchronization information and carries the payload of data. The IFS allows time for a receiving end unit to process the data in the frame and transmitter turn-around time. Both the PPDU and the IFS may be variable in length as determined by an amount of data carried in the frame.

[0094] The frame is broken down into a sync header (SHR), a physical header (PHR), and a physical service data unit (PSDU). The SHR may contain a preamble sequence and start-of-frame delimiter (SFD) that allows a receiving device to acquire the RF signal and synchronize to the frame. The PSDU may then be used to carry both 802.15.4 MAC and user data information. Further, it is noted that the PSDU may be of a variable length that is determined by the type of MAC and data information being carried.

[0095] Still referring to Figure 10, the frame may be further divided into symbols, which, in turn, are divided into bits. In one or more embodiments, each symbol may includes 4 bits that are sent least significant bit to most significant bit at the base band level.

[0096] Now referring to Figure 11, a "superframe" is formed of multiple timeslots. The superframe may be used in a beacon-enabled synchronous network where PDKs can find an RDC and/or CRDC fixed device. The superframe may allow a PDK to efficiently determine if an RDC is present on any given frequency.

[0097] The superframe may be configured such that timeslot 0 (TS_0) is the "beacon timeslot." Each superframe that is transmitted may start with a beacon timeslot. Further, each timeslot may be equally spaced so that a PDK and RDC can communicate.

[0098] Further, it is noted that in one or more embodiments, a superframe may be of a variable length dependent on the resolution to a timeslot. The initial number of timeslots within a superframe may be, for example, 16; but, in one or more other embodiments, a superframe may have a different number of timeslots.

[0099] Now referring to Figure 12, a "coordinator superframe" (c-superframe) may be formed of multiple superframes. In one or more embodiments, a c-superframe may be generated by a CRDC. A c-superframe may provide one or more advantages over a superframe. For example, a c-superframe may provide better battery management for a PDK, as well as provide distributed superframe and timeslots in a high density networking environment.

[0100] As shown in Figure 12, a c-superframe may have multiple superframes. Because each superframe may have a beacon, as described above with reference to Figure 11, multiple beacons may be transmitted per c-superframe. This may allow a PDK to quickly determine if it is within a system. A c-superframe may also number the superframes, so that both an RDC and a PDK can realize their position within the framing structure.

[0101] Figure 13 shows an overall framing structure of a timeslot as described above with reference to Figure 10, a superframe as described above with reference to Figure 11, and a

c-superframe as described above with reference to Figure 12.

Beacons

[0102] As discussed above with reference to Figure 11, a beacon may be sent in every superframe. The beacon is used to alert PDKs (and RDCs when a CRDC is present) of system information and timing of the framing structure employed. In one or more embodiments, such a configuration may be implemented using an IEEE 802.15.4 protocol. However, in one or more other embodiments, communication may occur according to one or more different wireless protocols.

[0103] In a single cell configuration in which one RDC is present (shown, for example, in Figure 1), the beacon may be transmitted in timeslot 0 of a superframe boundary. By transmitting the beacon periodically, a PDK may wake up and find the beacon within a short period of time and realize that it is within some particular network.

[0104] In an unsynchronized multi-cell configuration in which multiple RDCs are geographically located near each other, but no synchronization between RDCs is implemented (shown, for example, in Figure 2), a PDK may still wake up, detect the presence of the RDCs, and synchronize and communicate with each RDC due to the presence of the beacon on each RDC.

[0105] In a high density area in which multiple RDCs are present, a CRDC may most likely be present. In such a configuration, the CRDC may transmit the beacon, and all RDCs and PDKs in the coverage area of the CRDC align to the CRDC beacon. The CRDC may send a beacon on each superframe, as well as a c-superframe and other configuration information to the RDCs and PDKs.

[0106] Now referring to Figure 14, in a single cell configuration (shown, for example, in

Figure 1), a beacon is periodically output based on a specific number of timeslots. Further, in one or more embodiments, the beacon may be used in accordance an IEEE 802.15.4 protocol, with additional data attached indicating it is an RDC. At the end of each superframe, there may exist an additional idle period that allows tolerance in an over-the-air protocol.

[0107] After a beacon is transmitted, a PDK may immediately respond provided it follows the rules of what is know in the art as "carrier sense multiple access – collision avoidance" (CSMA-CA). If a PDK finds that the channel is busy in the current timeslot, the PDK may back-off and attempt again to access the RDC in another timeslot following the same rules. In the case the PDK is not able to communicate with the RDC, the PDK may wait for the next beacon and attempt again.

[0108] Figure 15 shows a single cell configuration in accordance with one or more embodiments. As shown in Figure 15, a single fixed RDC **140** may be connected to a back-end server (not shown). The single cell system shown in Figure 15 includes, for example: a computing controller with an operating system, an application, a back-end server interface, and a system stack; the RDC **140**, which is the gateway for a PDK and performs authorization (the system stack and RDC **140** together allow a user who has a PDK to access the application dependent on authorization from the back-end server); and a PDK **142** that includes necessary security information and is within reasonable proximity to wirelessly communicate with the RDC **140**.

[0109] An example handshake of the PDK **142** with the RDC **140** is shown in Figure 16. The RDC **140** outputs a periodic beacon based on timeslot 0 of a superframe. Eventually, a user walks within the coverage area of the RDC **140**, and the user's PDK **142** detects the beacon from the RDC **140**. The PDK **142** determines if it is registered to this RDC **140** (or network), and, if

so, responds with a PDK location response. The RDC **140** then detects the PDK location response and performs a link request to the PDK **142**. The PDK **142** then accepts the request by replying with a link grant, and the two devices **140**, **142** are now in data exchange mode. In data exchange mode, the two devices **140**, **142** may transfer specific security information that result in the RDC **140** enabling access to the system through the system stack, computing controller, and/or back-end central server.

[0110] Periodically, data may be exchanged between the RDC **140** and the PDK **142** to ensure that the PDK **142** is still within close proximity of the RDC **140**. As long as data exchange continues on a periodic basis, the application may remain enabled and the user can continue to access the application.

[0111] After some amount of time, the user walks away from the RDC **140** causing the data exchange to cease, in which case, the system stack indicates to the computing controller that the PDK **142** is out of range. The computing controller then disables the application to prevent unauthorized access. Regardless of data exchange, the RDC **140** may continue to transmit periodic beacons to guarantee that other PDKs may gain access to the application.

[0112] Now referring to Figure 17, a configuration of a "coordinator beacon" (c-beacon) is shown. The coordinator beacon may be generated by a CRDC, or RDC behaving like a CRDC. As described above, a CRDC may cover a large geographic area covering a plurality of RDCs and PDKs within that area. The c-beacon may be a standard beacon sent in the first timeslot of each superframe as shown in Figure 17.

[0113] A c-beacon, in accordance with one or more embodiments, may have properties that are different than those associated with an IEEE 802.15.4 standard beacon. For example, the standard c-beacon carries a field indicating the beacon is a c-beacon. Further, a c-beacon, in

normal operation, is a unidirectional transmission from a CRDC. Further still, a c-beacon may contain other c-beacon related information: number of slots in a superframe; number of superframes in a c-superframe; the channels on which adjacent CRDCs operate; current superframe number; current c-superframe number; site ID; CRDC ID; PDK superframe mask; and PDK timeslot mask.

[0114] Further, it is noted that while beacons may be transmitted from a CRDC on timeslot 0 of each superframe, remaining timeslots of a superframe may be left open for unsynchronized communications between PDKs and RDCs. The term "unsynchronized" is used to describe communications between the PDKs and the RDCs because the RDC and PDK share a common CRDC beacon, but the PDK may not get synchronized directly to an RDC beacon. In this manner, the PDK and RDC may appear to represent a peer-to-peer network.

[0115] C-beacon information described above relates to configuration fields that allow the system to operate efficiently when using a CRDC. In the case of, for example, a large scale system, a service provider of the system may have knowledge of RDC coverage relative to the CRDC. The following description provides details of these fields.

[0116] A "superframe_len" field may be governed by an IEEE 802.15.4 protocol. The number of slots may be from, for example, 2^1 to 2^{14}. The number of slots in a superframe may be used to define the repetition rate for the beacon.

[0117] A "c-superframe_len" field may be used to define a higher layer counter used for extended power savings in a PDK. The c-superframe_len value may also define the number of beacons within a superframe. If the superframe is configured to not have a beacon, then this field may be ignored.

Name	Type	Valid Range	Description
C-Superframe_Len	Integer	0 to 15	Defines the number of Superframes in a C-Superframe. Number of Superframes is defined as $2^{\text{C-Superframe\_Len}}$

[0118] A "CRDC_chan_flags" field may be used to indicate to a PDK what channels are used by adjacent CRDCs.

Name	Type	Bit	Description
CRDC_Chan_Flags	Binary		When any bit in this field is set to a 1, an adjacent CRDC is transmitting on that frequency.
	Binary	0	1 = Channel 0 available 0 = Channel 0 not available
	Binary	1	1 = Channel 1 available 0 = Channel 1 not available
	Binary	2	1 = Channel 2 available 0 = Channel 2 not available
	Binary	3	1 = Channel 3 available 0 = Channel 3 not available
	Binary	4	1 = Channel 4 available 0 = Channel 4 not available
	Binary	5	1 = Channel 5 available 0 = Channel 5 not available
	Binary	6	1 = Channel 6 available 0 = Channel 6 not available
	Binary	7	1 = Channel 7 available 0 = Channel 7 not available
	Binary	8	1 = Channel 8 available 0 = Channel 8 not available
	Binary	9	1 = Channel 9 available 0 = Channel 9 not available
	Binary	10	1 = Channel 10 available 0 = Channel 10 not available
	Binary	11	1 = Channel 11 available 0 = Channel 11 not available
	Binary	12	1 = Channel 12 available 0 = Channel 12 not available
	Binary	13	1 = Channel 13 available 0 = Channel 13 not available
	Binary	14	1 = Channel 14 available 0 = Channel 14 not available
	Binary	15	1 = Channel 15 available 0 = Channel 15 not available

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[0119] A "superframe_cnt" field may be used to define a current superframe (or beacon) count within a c-superframe. If the superframe is configured to not have a beacon, then this field may not be transmitted.

Name	Type	Valid Range	Description
Superframe_Cnt	Integer	0 to 65535	Defines the current Superframe count.

[0120] A "c-superframe_cnt" field may be used to define a current c-superframe count. If the superframe is configured to not have a beacon, then this field may not be transmitted.

Name	Type	Valid Range	Description
C-Superframe_Cnt	Integer	0 to 65535	Defines the current C-Superframe count.

[0121] A "PDK_sf_ts_msk" field may be used to define the bits of a superframe count and the timeslot count to use for PDK superframe and timeslot sequencing while in a tracking mode. If the superframe is configured to not have a beacon, then this field may not be transmitted.

Name	Type	Valid Range	Description
PDK® _SF_TS_Msk			Defines which bits are to be used for determining PDK® superframes and timeslots to communicate with an RDC during location tracking.
Superframe Mask	Binary	0000000000000 to 1111111111111	Defines the Superframe mask 1 = enable bit 0 = mask bit
Timeslot Mask	Binary	000 to 111	Defines the Timeslot mask 1 = enable bit 0 = mask bit

[0122] The PDK_sf_ts_msk value may be used in conjunction with a portion of the service provider unique PDK identification value and may be used to determine the exact superframe and timeslot the PDK is permitted to transmit a location identifier back to the RDCs. The necessary logic and variables required to perform this operation are illustrated in Figure 18.

[0123] Further, in one or more embodiments, to set the mask value of a particular PDK, a "set_pdk_msk_val" function may be used. The mask may be used over the superframe and timeslot counts and service provider's PDK ID to determine the superframe and timeslot the PDK is active on in the framing structure. In other words, the set_pdk_msk_val function may be used to set a mask for the PDK in an effort to establish at what times the PDK can communicate with an RDC. The function may return a pass or fail indication to indicate whether the mask has been successfully set. Conversely, to obtain the mask value being used by a particular PDK, a "get_pdk_msk_val" function may be used to retrieve the current PDK superframe and timeslot mask parameters.

[0124] Using, for example, the masking approach described above, individual client devices (e.g., PDKs) within a given cell (e.g., an RDC's wireless coverage area) may be addressed via real-time re-provisioning on command. Thus, in other words, by reserving time slots for both client device transmission and reception (based on masks established by the network), client transmission and reception time slots may be efficiently coordinated to reduce collision likelihood and allow for tiered client access, assignment of specific classes, and/or targeting an individual user for preferential, non-contended system access. Further, in one or more embodiments, bit masks may be changed to include or exclude specific users (or classes of users). Still further, in one or more embodiments, bit masks may be changed to dynamically alter access to the network by users or classes of users as traffic load on the network changes. Moreover, it is noted that once a specific client exits the network, previously reserved time slots of that client may be reassigned to one or more other client devices in the network.

[0125] To provide an example, there may be multiple client devices (e.g., PDKs) in proximity of a particular fixed reader device (e.g., an RDC). Each of these client devices, other

than providing a location response, may request some data exchange with the reader device in order carry out a secure transaction. In an effort to reduce collision and coordinate the time slots that each client device "talks" with the reader device, a mask may be communicated to each client device to set the times at which the client device is to communicate with the reader device. Further, certain ones of the client devices may be afforded some level of priority, in which case the masks would be set accordingly. For example, masks may be set according to a class of a user of a PDK or to a class of the PDK itself. To facilitate such differentiation, priority level or tier level data may be present in an RDC or CRDC to be used when setting a mask for a particular client device or group thereof. Thus, in such a manner, there is provided a technique for dynamic real-time tiered client access. Moreover, it is noted that in one or more embodiments, a CSMA-CA mechanism may be implemented as a backup approach to facilitate data exchange.

[0126] Further, in one or more embodiments, utilization of a tiered access system to transfer and receive data to/from a specific user or client device anywhere within a wireless network may allow for simultaneously operating network-wide two-way communications without altering the network. Thus, in other words, although one or more embodiments relate to an autonomous wireless proximity sensing and data transfer network, such a network may be used to notify, page, or transfer data possibly unrelated to one or more of the applications which a majority of the client devices on the network are using (or typically use) (such applications being for the purposes of, for example, tracking, access control, and/or digital rights management). In another example, a network device may be able to associate a PDK ID to a particular user and then provide messaging capability based on the identity of the user. Thus, in this case, one or more embodiments may be combined with tiering to provide multiple

messaging levels for different users.

[0127] The ability to assign tiers to the network may also enable low latency responses from targeted client devices. Accordingly, by integrating features into the client device that may take advantage of a two-way network capability, a system in accordance with one or more embodiments may allow for the simultaneous communication and control of external devices via real-time client command along with a general purpose low data rate two-way network.

[0128] Continuing with the description of c-beacon information in accordance with one or more embodiments, a "site_ID" field may carry a value that each CRDC transmits to all PDKs and RDCs within a coverage area of the CRDC. The site_ID value allows a PDK to determine if it can access the current site or if it needs to request permissions to access the site's network.

Name	Type	Valid Range	Description
Site_ID	Integer	0 to 65535	Defines the current sites ID.

[0129] A "CRDC_ID" field may carry a value that each CRDC transmits to all PDKs and RDCs within a coverage area of the CRDC. The CRDC_ID may be used, for example, for geographical reference.

Name	Type	Valid Range	Description
CRDC_ID	Integer	0 to 65535	Defines the current CRDC ID.

[0130] Now turning to a description of a use of a c-beacon, reference is made to Figures 19 and 20. A location tracking example in accordance with one or more embodiments is shown in Figure 19. There are various different types of devices in the system **150** shown in Figure 19. First, there is a CRDC **152** that may provide system information and facilitate synchronization for RDCs and PDKs. The system **150** also has RDCs **154**, **156**, which listen for PDKs and report the status of each PDK found within its respective cell **158**, **160**. The system **150** further includes a PDK **162** that is mobile and capable of being moving around. Further, the system **150**

has a server **164**, which is the back-end computer that controls the CRDC **152**, acquires information from the RDCs **154**, **156**, and may provide a graphical representation to monitoring personnel via a computer monitor (not shown).

[0131] Accordingly, Figure 19 shows how location tracking of a PDK is possible and a handshake between different parts of the system **150**. A handshake example of PDK location tracking in a CRDC configuration is shown in Figure 20. The CRDC **152** periodically broadcasts a beacon in timeslot 0 of each superframe. Enabled client devices within the CRDC cell boundary receive the beacon. After the PDK **162** receives the beacon and determines that the beacon is from a system that it is registered to, the PDK **162** broadcasts a PDK location response that is received by the RDCs **154**, **156**. Both RDC **154** and RDC **156** receive the response, log the PDK ID, the signal quality metrics, and timestamps the information. The packet of information may then be sent to the server **164**, where the server **164** processes the data from each RDC **154**, **156** and performs a location estimation that may then be presented to an operator. At the beginning of the next superframe, the beacon is again transmitted and the process is repeated until the PDK **162** can no longer be heard due to it being out of range.

[0132] Now referring to Figure 21, it shows a system **170** in which both PDKs and RDCs are coordinated within a CRDC cell boundary. Because, in one or more embodiments, RDCs are stationary devices and may occasionally be relocated, the RDCs may be initially coordinated by manually configuring both timeslots and frequencies they operate on.

[0133] As shown in Figure 21, one CRDC cell **172** and 6 smaller RDC cells **174**, **176**, **178**, **180**, **182**, **184** exist. The CRDC cell **172** provides ubiquitous coverage to the RDC cells **174**, **176**, **178**, **180**, **182**, **184**. Each RDC cell **174**, **176**, **178**, **180**, **182**, **184** overlaps its adjacent RDCs in a manner resulting in a high rate of collisions if the RDCs **186**, **188**, **190**, **192**, **194**, **196**

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attempt to communicate with a PDK **198** on the same channel. It is envisioned that all the RDCs **186**, **188**, **190**, **192**, **194**, **196** could be on different frequencies, but then the PDK **198** would be required to access each frequency for some duration, resulting in reduced battery life. To eliminate interference between the RDCs **186**, **188**, **190**, **192**, **194**, **196** and provide the PDK **198** with an efficient means to conduct secure transactions, the system **170** shown in Figure 21 may be used.

[0134] To optimize the system **170** for battery conservation of the PDK **198**, each RDC **186**, **188**, **190**, **192**, **194**, **196** may be provided with a dual RF physical interface. The primary interface is for monitoring a c-beacon and the PDK **198** located in close proximity, and to signal the PDK **198** to switch to another channel for further communications with that particular RDC. In this case, the CRDC (not shown) may transmit c-beacons, whereby all RDCs and PDKs will gain timing synchronization.

[0135] Based on the configuration shown in Figure 21, the c-beacon fields described above may be configured as follows: superframe_len = 4 (2^4 = 16 timeslots); c-superframe_len = 4 (2^4 = 16 superframes); CRDC_chan_flags = b0000000000000010 (most significant bit to least significant bit – CRDC channels); PDK_sf_ts_msk = b000000000011111 (mask all but 2 least significant bits of the superframe count and don't mask any timeslot bits); site_ID = 0x1234 (arbitrary site identification); and CRDC_ID = 0x0001 (arbitrary CRDC_ID).

[0136] Another piece of information that may be inherent to the PDK is a unique service provider PDK ID. The unique service provider PDK ID is located in the PDK and may be compared with the superframe and timeslot count prior to applying the mask, but may not affect the superframe and timeslot counts from a time reference standpoint. In this case, the unique service providers PDK ID for this PDK may be equal to 0x0003.

[0137] Using the above described values for the c-beacon, the following system attributes result (the superframe is 16 timeslots long, so once out of every 16 timeslots, a c-beacon is created allowing the PDK to determine if a system with the correct system ID exists): the c-superframe length is set to 16; the CRDC_chan_flags indicate to the PDK the number of CRDC channels available in the system; the PDK_sf_ts_msk indicates which bits to logically AND with the superframe and timeslot count to determine which slots to respond on (in this case, the PDK_sf_ts_msk is a hex value of 0x001F that is ANDed with the superframe and timeslot count resulting in one response timeslot); and the site_ID and CRDC ID are arbitrary values and may be left to the service provider for selecting unique identification values.

[0138] Using the above described exemplar system configuration information and having a PDK with a unique service provider ID of 0x0003, Figure 22 shows how the PDK may operate in a CRDC framing structure. As shown in Figure 22, the c-superframe_len is set to 16 – thus, the superframe count counts from 0 to 15 and then starts over at 0. Each superframe then includes 16 timeslots of which the first timeslot is timeslot 0 and includes the beacon. The superframe_len is also set to 16 – thus, there are 16 timeslots for each superframe. Again, the timeslots are numbered from 0 to 15, and restart at 0 for each superframe.

[0139] In one or more embodiments, based on the parameters set by the system and the unique service provider PDK ID, the PDK may periodically transmit a PDK location response in timeslot 3 of each superframe on a modulo 4 basis. This causes the PDK to respond in timeslot 3 of superframes 0, 4, 8, and 12 of a c-superframe. It is noted that the PDK may follow the CSMA-CA standard and if the PDK cannot respond in its timeslot, it may wait for its next designated superframe and timeslot to respond.

[0140] If an RDC requests to begin communication with a PDK, the RDC may

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immediately respond on the next even timeslot, which, in this case, is timeslot 4. Any RDC may respond, but RDCs may have to use the CSMA-CA rule prior to responding to the PDK transmission. If an RDC begins communications with a PDK, the following timeslot may be used to instruct the PDK to go to another channel, where bi-directional communications may commence.

[0141] Further, in one or more embodiments, an active superframe may occur when unmasked bits in the superframe count equal the corresponding unmasked bits in the unique service providers PDK ID. In this case, the superframe mask is a value of 0x003 and the unique service provider PDK ID is 0x0003.

[0142] With this information, the following calculation occurs:

	b000000000000	superframe count[15:4]
xor	b000000000000	unique Service Provider PDK® ID[14:3]
	b000000000000	result of xor function
and	b000000000111	Superframe Mask[11:0]
	b000000000000	result of AND function
	nor all bits	
	1	result is true

[0143] As shown above, a portion of the superframe count is exclusive-ORed with a portion of the unique service provider PDK ID. The result of the exclusive-OR is all 0's. Then, the superframe mask is ANDed with the result of the exclusive-OR function. The AND operation also results in all 0's. The result of the AND function is then compared to zero by NORing all of the bits together and results in a 1 or "true" output, indicating the bits compared between the superframe count and the unique service provider PDK ID are a match.

[0144] An active timeslot occurs when the unmasked bits in the 3 most significant positions of the timeslot count equal the unmasked bits in the unique service provider PDK ID's 3 least significant bits and the timeslot count least significant bit is a 1 (the PDK transmits on

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odd frames). In this case, the timeslot mask is a value of 0x7 and the unique service providers PDK ID's 3 least significant bits are 0x3.

[0145] With this information, the following calculation occurs:

	b011	timeslot count[3:1]
xor	b011	unique Service Provider PDK® ID[2:0]
	b000	result of xor function
and	b111	Timeslot Mask
	b000	result of AND function
	nor all bits	
	1	result is true

[0146] As shown above, the timeslot count is exclusive-ORed with a portion of the unique service provider PDK ID. The result of the exclusive-OR is all 0's. Then, the timeslot mask is ANDed with the result of the exclusive-OR function. The AND operation also results in all 0's. The result of the AND function is then compared to zero by NORing all of the bits together and result in a 1 or "true" output, indicating the bits compared between the timeslot count and the unique service provider PDK ID are a match.

[0147] The last portion of the calculation that needs to be completed (as described above) is to verify the last bit of the slot count is a '1,' indicating an odd slot. If the unmasked superframe and timeslot bits do not match the appropriate unique service provider PDK ID, the results will be "false" and no match will occur. In the examples described above, the superframe mask was set to unmask the 2 least significant bits of the superframe count to show that it is possible to allow a PDK to come up more frequently than the c-superframe count. By increasing the superframe mask to 4 bits, this example would allow the PDK to respond once per c-superframe (because the c-superframe was set to 16) and the modulo for the mask would be 2^4, or 16.

[0148] The timeslot mask may be set to allow all timeslot bits to be correlated to

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determine the timeslot, allowing the PDK to respond once per superframe. Further, it is noted that it may be possible to mask some of the timeslot bits to increase the number of times a PDK can respond within a superframe.

[0149] In one or more embodiments, a PDK may periodically wake up to determine whether it is within a particular system. Upon a periodic wake up, the PDK will detect a c-beacon indicating that the particular system is present, along with system information. The PDK will collect the system information and determine the current superframe count of a c-superframe. The PDK may also put parameters (e.g., PDK_sf_ts_msk) in place to start immediate battery save in the system.

[0150] Based on an approximate time, the PDK may awake just prior to where it believes the next superframe is that it should communicate on, and will listen for the beacon and begin responding with the PDK location response message.

[0151] As shown in Figure 23, a CRDC may update its system information on each superframe and output a c-beacon with current information to all PDKs and RDCs. The PDK then waits for its predefined superframe and timeslot and responds. This scenario continues to occur until the PDK leaves the CRDC cell or an RDC responds to the PDK.

[0152] As described above, a CRDC may continue to output a c-beacon, and the PDK periodically awakes to re-align to the superframe and respond to the c-beacon. If a RDC is present and wants to communicate with the PDK, the RDC may respond on the even timeslot immediately available after the PDK's transmission. Figure 24 shows how the communications handshake between the PDK and RDC may occur. Particularly, Figure 24 depicts one CRDC, one RDC with two active channels (i.e., using two wireless links), and a PDK.

[0153] With continued reference to Figure 24, the CRDC outputs a c-beacon of which the

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RDC and PDK are aligned. The PDK realizes that the c-beacon's superframe count correlates to its internal predefined active superframe count, and then waits for the appropriate timeslot to respond to the system with its PDK location response. When the PDK responds on the c-beacon channel, the RDC detects the response and determines that it wants to associate with the PDK. The RDC then creates a message including its own RDC ID, the PDK's ID, a command to switch to channel 2, and a predicted superframe and timeslot the PDK should respond on. The PDK, in response, switches to channel 2 and waits for the appropriate superframe and timeslot count and transmits a link request along with its PDK ID and the destination RDC ID. The destination RDC then receives the information and responds back to the PDK with a link grant. Communications may now begin between the two devices exchanging the appropriate information to maintain the PDK-RDC link. To maintain synchronization, the RDC may define the periodic communication frequency with the PDK and will periodically generate a request to the PDK to exchange information. The PDK may then reconfigure its wake parameters to that of the RDC, as the RDC is maintaining superframe synchronization.

[0154] It is noted that in one or more embodiments, such as that described immediately above, the RDC may have a dual physical interface, maintaining synchronization with the CRDC on channel 1, while associating with one or more PDKs on channel 2. The physical interface connected to channel 1 provides timing to the physical interface on channel 2.

[0155] Further, because the RDC may have intelligence on both channels, the RDC may provide coordination of PDKs that it wants to redirect to channel 2 and PDKs that are on channel 2. More specifically, the RDC may move the superframe and timeslot that a PDK communicates to the RDC on, if another PDK with the same timeslot requirements is present on channel 1 and the RDC wants to associate with it.

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CRDC Slot and Channel coordination

[0156] In one or more embodiments, a CRDC may be configured via a remote connection to a server or automatically. Using remote configuration, the server may have knowledge of RDCs located within the CRDC cell boundary and may perform optimum channel and timeslot planning.

[0157] When the CRDC is configured automatically, the CRDC may scan all channels and find the channel with the least interference. The CRDC may then begin transmitting a c-beacon.

[0158] All RDCs located within a CRDC cell boundary may place the CRDC into its local CRDC database and complete scanning all other channels to determine if other CRDCs are present. In the case multiple CRDCs are found, the RDC may communicate to each CRDC its findings if possible.

[0159] Each CRDC may coordinate through that RDC to setup channels and timeslots to prevent interference between CRDCs. In one or more cases, the CRDC may select another channel and disregard the timeslot information because CRDCs may not be required to be timing coordinated. Further, it is noted that any RDC that detects more than one CRDC may select the CRDC with the best signal quality.

Protocol Operation

[0160] The following describes a protocol operation in a single cell coordinated system using a CRDC configuration. In one or more embodiments, there may be additional protocol fields required to allow interoperability between single cell and coordinated multi-cell configurations. Such additional protocol fields may provide information to RDCs and PDKs that are located in near proximity to each other, or within a CRDC cell.

[0161] A network format field may provide information to RDCs and PDKs related to the specific configuration the single cell or coordinated cells are operating in.

Name	Type	Valid Range	Description
Proxense_NWK_FMT			Defines the network configuration employed for an RDC or CRDC
Network Type	Integer	0 to 7	Defines the network type employed. 0 = Single Cell 1 = Multi-Cell coordinated 2 = Multi-Cell coordinated w/ CRDC 3 – 7 = RFU
Beacon Source	Binary	0 or 1	Defines the source of the beacon. 0 = RDC 1 = CRDC
Broadcast Flag	Binary	0 or 1	Defines if this is a broadcast message. 0 = not broadcast 1 = broadcast
Timeslot Select	Integer	0 to 3	Defines how an RDC and PDK® utilize timeslots in a system. 0 = no timeslots assigned 1 = 802.15.4 Beacon enabled 2 = PDK® uses even timeslots / RDC uses odd timeslots 3 = PDK® uses odd timeslots / RDC uses even timeslots

[0162] A network type value may be used to define a cell network configuration. An RDC receiving this field may determine its operating mode based on this field. If an RDC receives a network type of single cell from another transmitting RDC, the RDC may tune to another channel to avoid collisions with the other RDC. If the RDC receives a network type of coordinated multi-cell, the RDC may join the multi-cell coordinated system. If the RDC receives a network type of coordinated multi-cell with CRDC, the RDC may join the CRDC network if the site ID is the same.

[0163] The PDK may also receive this information and adjust its operating mode to

comply with the system employed. If the PDK detects the system to be single cell, the PDK may conform to more of an IEEE 802.15.4 protocol, communicating with the RDC in such a manner. The PDK may be aware that it is required to communicate with a specific RDC ID. The PDK may still have the capability to periodically monitor other channels for other RDCs in the local vicinity.

[0164] If a PDK detects the system is multi-cell coordinated, the PDK may receive further information indicating the other RDC frequencies in use in the coordinated network and may adjust its system operating parameters appropriately.

[0165] If the PDK determines the system is multi-cell CRDC coordinated, the PDK may adjust its operating parameters appropriately. The PDK may acknowledge that a c-beacon is present and may broadcast a PDK location response. The PDK may also understand that an RDC with a different ID other than a CRDC ID may attempt to communication with the PDK.

[0166] A "beacon source" field may indicate to all RDCs and PDKs in the general proximity of the type of beacon being generated. This information may be helpful, specifically when in a multi-cell CRDC system, and allows RDCs to distinguish between RDC generated beacons and CRDC generated beacons.

[0167] A "broadcast flag" may indicate to all recipients that the information being sent is intentionally being broadcast to all devices that can receive particular protocol information. In some cases, a message that may be sent to a specific PDK may also be broadcast to all PDKs. This flag assists the PDKs in determining how to treat the information.

[0168] A timeslot select field may indicate to PDKs and RDCs how the timeslots are configured in the system. This field may further be used to determine if an RDC and PDK are to use even-based or odd-based timeslots for responding.

[0169] In order for an RDC or PDK to determine that a network is of a particular type, a network identifier may be used.

Name	Type	Valid Range	Description
Proxense Network Identifier	ASCII	Proxense	An 8 byte ASCII value identifying the network to be a Proxense network

Single Cell Standalone Operation

[0170] The following description is based on, for example, an electronic game (such as one that may be found in a casino) operating in a single cell configuration and attached to some central server. However, it is noted that as described above, examples of applications and uses are for purposes of illustration and clarity and do not limit the present invention.

[0171] The game has a resident RDC integrated into its hardware and has a system stack that allows access to the game. The RDC may be attached to the game controller, or may use a separate controller containing the system stack and an interface to the central server.

[0172] For clarity, any interactions between the RDC and the server will assume that the reader understands that the system stack and server interface application are taken into account in the transactions described.

[0173] This description covers the basic initialization of the system and RDC / PDK interactions that occur while associated in the system. The following concept defines how, for example, a casino game in a single cell configuration may be setup with multiple player PDKs. Upon power being applied to the game and RDC, the internal circuits perform an initialization function and the operating system and game load. The game and RDC indicate to the central server that power has been applied. The system stack also loads in the controller and the RDC device is started in a static mode with its transceiver disabled. The RDC may first be configured

to operate in a single cell environment and requires some basic setup requirements as will be understood by those skilled in the art.

[0174] The server places the game into a particular configuration mode where it can set the RDC for auto-discover mode, or may choose to manually configure parameters related to the RDC's operation. If the server places the RDC into auto-discovery mode, the RDC generates a random value for its RDC ID and its password, which is then passed back to the server.

[0175] If the server chooses to manually setup the RDC, the server may supply the RDC ID and password. The server may also send the network topology and preferred channels the RDC will operate on. The central server may then send its site information to the game controller, which is also used by the RDC to allow access to the game. Once the server has configured the RDC, the server will enable the RDC and game.

[0176] The configuration information shown in the table immediately below may be used for RDC provisioning.

Site ID	0x0100	Generic value for a single cell RDC.
RDC ID	0x1234	Arbitrary value
C-Superframe Length	32	2.5 second superframe period for PDK® wakeup
Superframe Length	16	16 slots per superframe
Proxense Network Identifier	Proxense	Defines system as a Proxense system
Proxense Network Format		
Network Type	0	Single Cell
Beacon Source	0	RDC
Broadcast Flag	1	Broadcast
Timeslot Select	1	802.15.4 timeslots

[0177] In this configuration of a standalone RDC (without a site identifier): the site ID is set to 0 because this is a single cell RDC and no site information is required; the RDC ID is arbitrarily selected; the c-superframe length is set to 32 superframes indicating to the PDK that it

needs to wake up once every 32 superframes in superframe 0 to exchange information with the RDC to remain associated; the superframe length is set to 16, which may be the standard value for a superframe in a particular system; the network identifier allowing a PDK to understand the beacon is from an enabled RDC; and the network format indicates one or more of several parameters (e.g., the network type indicates to the PDK that it is a single cell network – indicating to the PDK no other RDC is associated with this RDC and therefore no other RDC should be attempting access on this channel, the beacon source indicates to the PDK that the beacon is from an RDC and not a CRDC device, the broadcast flag indicates to the PDK that the message is being broadcast from the RDC, the timeslot select field indicates that a PDK should use IEEE 802.15.4 beacon-based handshaking with the RDC). The RDC then scans all channels (or preconfigured channels) to determine if any other IEEE 802.15.4 or client devices are present or if any other interference is found.

[0178] With the pre-configured information, the RDC then begins beacon transmission on the least interfered channel with a c-superframe count, superframe count, and the information located in the table immediately described above.

[0179] Now, as shown in Figure 25, in standalone mode, the RDC will continue to transmit beacons on every superframe. The information in the table immediately described above may be transmitted along with the superframe count in every superframe to allow the PDK to configure and synchronize with the system. When the superframe count is the superframe length minus one, the superframe count will start counting from 0 for the next c-superframe.

[0180] At the end of each beacon transmission, a frame check sequence (FCS) may be appended as part of the IEEE 802.15.4 physical layer. The FCS provides protection for the data carried in the frame. Because the beacon may not occupy the entire frame (or timeslot), hashed

lines are shown indicating additional idle time between the FCS and IFS. The RDC maintains the beacon transmission until the RDC is disabled or power is removed. At this point in the sequence of operations, there are no PDKs registered with the RDC, so no PDK can gain access without registering and receiving authorization from the RDC.

[0181] Again referring to the casino game example described above, a player with a PDK that has not yet been registered to the property enters the RDC cell. The PDK is in battery save mode and periodically wakes up looking for a network. As shown in Figure 26, the PDK starts in a deep sleep state. The wakeup timer eventually expires, causing the PDK to enable and tune its receiver. The PDK then monitors the channel that it tuned to for a period of one 17 timeslots (one superframe plus one slot), or approximately 83 milliseconds. The 17 timeslot limit is based on a superframe of 16 timeslots, and the fact that the PDK, upon initial reception, could miss the beginning of a beacon. The additional slot provides the overlap necessary to guarantee reception of a beacon if one is present.

[0182] If no beacon is detected, the channel number is incremented (modulo 16) and the PDK resets its wakeup timer and returns to deep sleep mode. If a beacon is detected, the PDK checks for a network ID and if one is not found, it again increments the channel number, resets its wakeup timer, and returns to deep sleep mode. If the network ID is detected, the PDK attempts to establish a communications link with the RDC. At this point, the PDK has found a single cell network on channel 1 with an RDC ID of 0x1234, and the RDC is in broadcast mode indicating that it is attempting to gain the attention of any PDKs in the local proximity.

[0183] Now referring to Figure 27, in which an authorization denial handshake is shown, the RDC broadcasts its beacon with the information as described above. The PDK detects the beacon in broadcast mode, determines the network configuration and RDC ID and returns a PDK

location response with the RDC ID and PDK ID included. The RDC detects the response from the PDK and alerts the central server that a PDK with a public ID of 0x9876 (arbitrary) wants to attach and enable the game for play. In the meantime, the RDC may immediately respond back to the PDK indicating that the PDK should wait for authorization. This keeps the PDK responding to beacons as defined by the fields located in the beacon until the beacon is no longer present (i.e., the PDK is no longer in the RDC cell), or until a response is returned by the RDC.

[0184] The central sever, in conjunction with the system stack, may then choose to not recognize a particular PDK's public ID that has not yet been registered to the property. The RDC continues to output its beacon. Upon the next wakeup and PDK location response from the PDK, the RDC detects the PDK ID and, within its database, looks up the authorization parameters for this PDK. It determines that authorization has been denied and sends an "authorization deny" command to the PDK. In the case that a particular PDK is not recognized or not authorized, a notification may sent to a staff member of the property to register a user of the PDK, and/or, in one or more embodiments, one or more machines may be used to prompt the user to register with the property.

[0185] The PDK temporarily stores the RDC ID in its local memory with a flag indicating that it shall no longer respond to this RDC ID. The PDK may then go back into battery save mode and periodically scans all channels as previously described above with reference to Figure 26.

[0186] Still referring to Figure 27, because the PDK may not constantly be aware of its geographical location, the PDK may continue to monitor each channel and decode each beacon. Eventually, the PDK returns to the channel that the RDC is still transmitting beacons on, decodes the beacon information including the RDC ID, and determines that it is not to respond.

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[0187] Further, the PDK may maintain the RDC ID in its local database until the beacon is no longer present during scanning, at which time the RDC ID is removed from the database. The period of time that the beacon is absent before removing the RDC ID from the database may be determined during prior system testing.

[0188] Assuming the RDC beacon is absent for a given period of time indicates to the PDK that the PDK has left the RDC cell. Upon the next detection of that RDC beacon, the PDK may again attempt to gain access to the RDC as shown in Figure 27. The difference this time is the PDK ID is in the RDC's local database and the RDC may deny authorization without alerting the host system. The PDK may then operate as previously described after authorization has been denied.

[0189] In one or more embodiments, once a host system grants authorization for the PDK to operate within the property, then one or more different scenarios may exist. In one scenario, the RDC may transmit the PDK ID as part of the beacon transmission, alerting the PDK that the RDC wants to communicate, and the PDK may then respond with a PDK location response. In another scenario, the PDK returns to the RDC cell, and after detection of the beacon (with or without the PDK ID), it returns the PDK location response. In either case, after the RDC detects the PDK location response with the PDK's public ID, the RDC then issues a link request attempting to initiate a link between the RDC and PDK. Figure 28, for example, shows a handshake between the RDC and PDK for a PDK authorization grant.

[0190] As shown in Figure 28, the RDC may broadcast the beacon on every superframe. Although not shown, the superframe counter value is also included, which the PDK may use for battery conservation. The beacon may be broadcast in one of more different methods. The system may have just authorized a PDK and the beacon includes the PDK's public ID for a

period of time or, in another method, the beacon may be transmitted without the PDK's public ID. As described above, if the PDK is in the RDC cell and has deactivated its response, when the PDK detects its ID in the beacon, it may reactivate its response to the RDC and transmit both the RDC ID and PDK public ID in its PDK location response.

[0191] If the PDK has just re-entered the RDC cell and detects the RDC beacon (with or without the PDK's public ID), the PDK may again respond with the RDC ID and its own PDK public ID. The RDC may then detect its RDC ID and the PDK public ID and immediately sends a link request to the PDK with both its RDC ID and the PDK's public ID indicating it wants to initiate a link with the PDK. The PDK may detect the request and respond with a link grant with both IDs included. The RDC and PDK may enter into association mode and then provide data exchange on a periodic basis insuring the PDK remains in range of the RDC. This periodic data exchange may occur based on parameters previously described above. Interleaved between the data exchange may be beacons that other PDKs may use to access the RDC. Eventually, the RDC may terminate the data exchange based on inactivity, as determined by the server, or as based on the PDK leaving the RDC cell, in which case the RDC realizes the PDK is no longer in range.

[0192] Further, it is noted that due to radio interference issues that might occur in wireless systems, the RDC and PDK may not relinquish the link based on the lack of a single data exchange. Because the RDC is not necessarily battery limited, the RDC may continue to monitor all timeslots in a superframe with the exception of those frames it transmits on. In contrast, it is noted that a PDK is likely battery limited and therefore may need to intelligently choose when to receive and transmit.

[0193] In the case the RDC and PDK lose communications during the predefined period

they are attempting to communicate, both devices may have equal knowledge of such an event. Because the PDK is battery limited, the PDK may try on the next available timeslot to regain synchronization with the RDC. After a period of time in the RDC, or a predefined number of attempts by the PDK, the link may be considered lost.

[0194] Referring again to the casino game example, in one or more embodiments, an enabled single cell game facilitates multi-player access via the central server. Individual players may consecutively play the game provided they have the appropriate PDK, or in some instances, multiple players may be able to simultaneously play the game. The RDC allows for simultaneous multi-player access, so long as the central server supports and authorizes such play.

[0195] In the case where multiple PDKs may simultaneously access an RDC, the RDC may provide superframe coordination information to the PDKs to interleave them in a manner to avoid contention between RDC and PDK communications. For example, as shown in Figure 29, the RDC may assign a superframe and timeslot count to each PDK accessing the RDC. Through link setup and data exchange, the RDC may direct the PDK to use a specific superframe and timeslot (or multiple superframes and timeslots) for periodic data exchange. By using such a technique, the RDC may alter the wakeup superframe for each PDK and may efficiently distribute them so as to reduce contention between the PDKs. Because the PDKs are given a specific superframe and timeslot (or superframes and timeslots), the PDK is required to wake up during that superframe(s) and timeslot(s) to communicate with the RDC. This technique, in turn, may greatly extend PDK battery life.

[0196] Now referring to Figure 30, it shows a configuration in which multiple games operating as single cell RDCs are co-located in close proximity with overlapping RDC cell coverage. In such a configuration, each RDC **200**, **202** may not be aware of the presence of the

other RDC **200**, **202** but a PDK **204** that resides in the area of overlapping coverage may detect the presence of both RDCs **200**, **202**. A technique of restricting or allowing PDK access to one or more of the RDCs **200**, **202**, and the technique of enabling game play may depend on the system stack for that specific configuration.

[0197] In a configuration where multiple RDCs are co-located without the knowledge of each other, and where a PDK is registered to both RDCs, a technique of determining and gaining access to each RDC may be enforced. There are one or more possible scenarios that may occur. For example, in one case, a player may desire simultaneous access to a game and another device, such as a drink or food purchase device, with both being physically located near each other and without disrupting the game play. In another case, a player may be registered to multiple RDCs, but wants to associate with one RDC at any given time.

[0198] In addition to an RDC granting permission to the PDK for access, the RDC may also dictate to the PDK the number of simultaneous associations allowed. The purpose of defining the number of associations permitted may reduce the possibilities that the PDK can simultaneously associate with and enable two or more RDCs within close proximity of each other. This may prevent unauthorized use of a player's PDK on adjacent enabled devices, thereby disallowing a player from using another player's identity. The capability of configuring the number of associations for a particular RDC may be implemented in a system stack and controlled by the attached controller's application.

[0199] Referring again to the case where a player desires simultaneous access to a game and another device, a PDK may be capable of associating to multiple RDCs based on the physical limitation of the maximum number of simultaneous connections the PDK can handle and based on the number of associations the RDC permits.

[0200] Further, it is noted that under the conditions the PDK is associated with more than one RDC, the PDK may relay information back to each RDC indicating its timing relative to the other RDC. This information may be important in the event a single PDK is associated with more than one RDC because the clock frequency error between the RDCs may cause eventual timing drift that will eventually cause timeslot and superframe overlap and prevent the PDK from communicating with both units on a periodic basis. This situation is also noted: where two PDKs are associated with the same RDC and each PDK is also associated with a different second RDC. Additionally, each of the second RDCs may also have other PDKs associated with them that are also associated with even different RDCs. Eventually, such an uncoordinated system may appearing like a mesh network. A system of such complexity may require a CRDC to be used to address synchronization issues.

[0201] As to the case where a player may be registered to multiple RDCs, but wants to associate with one RDC at any given time, there may one or more techniques that may be employed to control how a PDK associates with a specific RDC. In one way, a PDK is associated with a single RDC. Using this technique, the PDK may attempt to associate to other RDCs, but the other RDCs will deny association through the back-end central server, causing the PDK to ignore the other RDCs as previously described above. It is noted that such a technique may eliminate a cell size issue, where the cell must be constrained to prevent other RDCs the PDK is registered to from accessing the PDK.

[0202] In another technique for directing a PDK to communicate to one RDC in a configuration where multiple RDCs exist of which the PDK is registered to, by significantly reducing the RF power level from the RDC and providing this information along with a request for the PDK to reduce its RF power, a close proximity communications channel may be created.

The close proximity communications channel may then operate as if a single cell network exists. More particularly, if the RDC is configured to have a reduced RF power output, the RDC's cell boundary shrinks causing the PDK to have to be within closer proximity of the RDC to receive a beacon from that RDC. If, in turn, the RDC indicates in the beacon that it is at reduced RF power, the PDK is aware that the RDC is in extremely close proximity. In addition, if the beacon includes a command to instruct the PDK to reduce RF power, the chance of surrounding RDCs receiving a response or interference from the PDK may be minimized. When the communications channel is terminated and the PDK no longer sees the beacon from that RDC, the PDK may readjust its RF power level to normal levels for a larger cell coverage area. Such dynamic RF power level adjustment may be implemented in the system stack.

[0203] Thus, in one or more embodiments, there exists a scheme to dynamically adjust a transmission power and/or reception sensitivity of a wireless reader device along with an ability to command a client device to do likewise to permit both cell coverage and client device response area programmability. This may enable the dynamic tracking of transient client devices within and through the cell's extended or default coverage area with full power and sensitivity at both ends, while concurrently allowing the association of a particular client device in close proximity to the reader device for command and control of an application or service during a session. Those skilled in the art will note that by dynamically varying a size of a cell in which a secure transaction takes place between a PDK and an RDC (or in which a PDK accesses an application via an RDC), at least some level of security may be achieved in that eavesdropping may be prevented. Moreover, unnecessary and potentially unsafe propagation of a wireless signals beyond a certain distance may be avoided.

[0204] For example, a plurality of PDKs may be located in a default wireless coverage

range of an RDC. This default wireless coverage range may represent a cell of the RDC at full power. As the plurality of PDKs enter and exit the RDC's cell, the RDC reports corresponding location tracking information back to, for example, a central server. When one of the PDKs requests access to an application secured by the RDC, the RDC may follow by reducing its RF power and commanding the requesting PDK to also lower its RF power, thereby in effect requiring that the requesting PDK be "drawn in" to the RDC in order for the PDK to access the application. It is noted that while the RDC may communicate with the requesting PDK via low power RF signals, the RDC may continue to maintain its default wireless coverage range for tracking other PDKs. When the requesting PDK is moved away from the RDC or the session is otherwise terminated, both ends return to their default full RF power settings.

[0205] As described above, reception sensitivity of the RDC and/or PDK may be changed as part of a cell size variation technique in accordance with one or more embodiments. Reception sensitivity may be adjusted using an RF attenuator (e.g., a step, variable, or programmable RF attenuator) that is either specific to a receive path or common to both receive and transmit paths. It is noted that even if the attenuator is common to both receive and transmit paths, transmit power may be independently controlled. Further, in one or more embodiments, a separate attenuator may be used to allow for independent control of transmission power and reception sensitivity.

[0206] To determine how much to adjust the size of a wireless cell without severing a wireless connection between an RDC and a PDK, one or more of various metrics may be used. For example, in one or more embodiments, a signal strength of the PDK may be monitored to determine by how much to power down a transmission power of the RDC and/or the PDK. If the signal strength is determined to be relatively strong, then the RDC may cause a reduction in

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transmission power that is greater than if the signal strength were detected as being weak. Conversely, if the signal strength is detected as being weak, the RDC may lower transmission power by a small amount or not at all. Instead of or in addition to relying on signal strength, a bit error rate may be assessed to determine by how much to power down the transmission power. For example, if the bit error rate of communications between the RDC and PDK is determined to be low, then the RDC may lower transmission power by an amount greater than if the bit error rate was determined to be relatively high.

[0207] Further, as described above, the transmission power and/or reception sensitivity of either or both of an RDC and a PDK may be adjusted. In one or more embodiments, only a transmission power of the PDK may be adjusted. This may done to, for example, "bring in" the PDK and reduce the likelihood of that PDK interfering with other RDCs. In one or more other embodiments, the transmission power of both the RDC and the PDK may be adjusted in an effort to draw in the PDK to the RDC. In still one or more other embodiments, in addition to or instead of adjusting transmission power, reception sensitivity of either or both of the RDC and the PDK may be changed.

[0208] Moreover, in one or more embodiments, an RDC may have multiple wireless transceivers, whereby at least one of the transceivers is at full power for PDK location tracking purposes, while one or more of the other transceivers are used to establish adjustable wireless cells for particular associations with PDKs. For example, in the case of an ATM machine having an RDC, the RDC may carry out a secure transaction with a PDK in an adjusted wireless cell, while at the same time, casting a broader wireless cell to monitor and identify one or more PDKs around the transacting PDK. In such a manner, for example, a security measure may be implemented by which the RDC can identify individuals behind a transacting user. Further, as

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an added or alternative security measure, transmission power may be adjusted dependent on a sensitivity of the type of data requested to be exchanged in a particular transaction. Such data sensitive transactions may be conducted at low power with additional security measures such as password entry or biometric input.

Application Utilizing Multi-Cell Coordination

[0209] The following describes a system architecture and operation of a system within, for example, a casino application. Referring to Figure 31, a CRDC (not shown) and multiple RDCs (shown, but not individually labeled) are distributed throughout a casino floor. In such embodiments, a single CRDC generates a cell **210** that provides ubiquitous coverage of the entire floor. On the left side of Figure 31, multiple RDCs (shown, but not labeled) provide overlapping cell coverage and blanket the casino floor and gaming table area **212** all the way to an entrance of the casino with continuous wireless service coverage. These RDCs may be dedicated to PDK location tracking, allowing the casino operator to know where a player carrying his/her PDK is geographically located on the floor. These RDCs may be mounted in the floor or ceiling, creating, for example, relatively symmetrical cells.

[0210] Another set of RDC cells (shown, but not labeled) are shown to exist in the right side of Figure 31 and are integrated in gaming machines (shown, but not labeled) within an electronic gaming area **214**. The cell orientation for these RDCs is more oblong and focused at players that are within close proximity and in front of the electronic gaming machines, noting that cell orientation and shape may be set according to antenna position and/or configuration. The cells extend outward towards the center of the isle to detect the presence of a player that may be walking by. Toward the lower right part of Figure 31 is a registration cell **216** that sits at a registration desk (shown, but not labeled) where a player may register and acquire a PDK the

first time the player enters the casino. The registration cell **216** may be smaller in size to enable local communications between the RDC and PDK without allowing external RF monitoring devices to capture and record the interaction between the devices.

[0211] It is noted that in Figure 31, a PDK **218** that is currently out of the range of all RDCs, but still in range of the CRDC. This represents a PDK carried by a player, which is being used to track the player's position and provide additional services. Such services are further described below.

[0212] Further, still referring to Figure 31, there is a central server **220**. The central server **220** may contain a player's financial information (credit card numbers, gambling limits, and other information related to a player). In addition, the central server **220** may be physically wired (not shown) to all RDCs and/or CRDCs located throughout the casino.

[0213] Although not shown in Figure 31, within the PDK location tracking system, RDCs may be gambling tables that also have RDCs embedded within the table itself. A representative gambling table is shown in Figure 32.

[0214] As shown in Figure 32, a gambling table **230** has RDCs **232**, **234**, **236**, **238**, **240**, **242**, **244**, **246** embedded within it. RDC **246** may be a dealer RDC that has a cell geometry covering the dealer's area, allowing the dealer to freely move around in this area. There are an additional RDCs **232**, **234**, **236**, **238**, **240**, **242**, **244** that are located at each player position. Each of these RDC cell's coverage areas are oblong and are directed to where the player would be sitting/standing. It is noted that each player position's RDC **232**, **234**, **236**, **238**, **240**, **242**, **244** allows for some coverage of the region directly behind each player position, allowing the RDC **232**, **234**, **236**, **238**, **240**, **242**, **244** to report back through the system the presence and identity of anyone behind the player. The RDC cell's coverage areas may be minimized to cover the area

where a dealer or player may be located relative to the table. Those skilled in the art will note that the actual cell footprints may vary from those shown in Figure 32. Utilizing distributed RDCs with directional, highly attenuated, antennas allows the casino operator to know the location of both dealers and players, and the amount of time they remained at the table.

[0215] The CRDC, PDK location tracking RDCs, and gambling table RDCs, may interoperate in a system such as that shown in Figure 33. Figure 33 shows a graphical representation of the sequence of events that may occur when a c-beacon is transmitted in, for example, a casino application. As shown in Figure 33, first, a CRDC **250** transmits the c-beacon to all RDCs and PDKs (shown, but not labeled) within the CRDC's cell radius. All of the RDCs and PDKs setup and synchronize their timing to the beacon. Next, each PDK, in its appropriate timeslot, transmits a PDK location response ID. Any RDC that is in the vicinity of the PDK's response receives the PDK location response ID and logs specific information related to the reception. Then, each RDC packetizes the information received from the PDK and, through a wired back channel, relays the information to a central server **252**. The central server **252** may then utilize this information to indicate to an operator, by either graphical or text format, the geographic location of each player.

[0216] Representing the flow in a different manner, the interactions for a single PDK is shown in Figure 34. In addition to providing location tracking information, when the PDK outputs a PDK location response ID, certain events may occur from an RDC based device. In the event the RDC based device is an electronic game, via the central server, the electronic game may entice the player over to it by flashing information on the screen related to that specific player. In one example, an electronic gaming machine may offer the player a free game, gaining the player's attention and ultimately enticing the player to play the game. In order to identify the

player, further steps may be taken between the PDK and the RDC that are described below.

[0217] In the event the RDC device is used for location tracking, it may perform further interrogation of the PDK to determine whether the PDK is legitimate. A more detailed description of such interrogation is provided below.

[0218] Now referring to Figure 35, it shows two CRDCs with overlapping cell coverage, but not to the point where each CRDC can see the other CRDC. As shown in Figure 35, the CRDC cells are non-uniform in nature due to obstructions blocking the transmit radio path. The CRDC cell overlap may cause a number of RDCs to be in each CRDC cell. It is envisioned that other CRDCs may overlap in the same region if they are placed above and below the RDC micro-cellular structure. In this case, for example, up to 4 channels may be occupied just for CRDC beacon transmission.

[0219] Due to the possibility of interferers in the coverage area of the CRDC, the central server may manually configure the CRDC, or the central server may also instead or additionally have the capability to auto-configure. In the case the central server performs manual configuration, upon initial installation, power up, and provisioning, the CRDC is configured to remain in a dormant state until the central server interacts with the device and instructs it to perform specific tasks. The central server may first instruct the CRDC to enable the receiver, scan all channels, and report back the findings of each channel. When the CRDC scans each channel, it collects signal quality metrics and any IEEE 802.15.4 radio transmissions. The operator of the central server may then analyze all of the signal quality metric information and any IEEE 802.15.4 framing information to determine the best channel the CRDC should transmit its beacon on. Once determined, the operator at the central server may command the CRDC to store the specific channel that it will transmit on and enable it to begin transmitting. The

operator may then select the next CRDC and perform the same operations, until all CRDCs have been configured in the network.

[0220] In an automatic configuration mode, the CRDC scans each channel and collects signal quality metrics and determines if other IEEE 802.15.4 devices (including another CRDC) are present. The CRDC may then select the quietest channel to begin its beacon transmission on. Further, it is noted that it may be recommend that initial auto-configuration of a CRDC occur when there is a single CRDC present. This recommendation is based on the fact that the CRDC may have overlapping coverage with another CRDC as shown in Figure 35, but the CRDC is not aware of the overlap, causing two CRDCs to transmit their beacons on the same channel. Eventually, due to potential timing inaccuracies in the CRDCs, they may overlap and become direct interferers to RDCs and PDKs in the overlapping area. An exception to this recommendation is when the system is configured to allow the CRDC to report back the channel that it occupies (or intends to occupy) to the central server, and the server can then analyze the CRDC channel lineup on all CRDCs and reassign a channel for any given CRDC.

[0221] Once a channel has been assigned and stored in a local non-volatile memory of the CRDC, upon next power up, the CRDC scans all channels again and return to their last assigned channel provided that it is not occupied by an interferer or by another CRDC beacon. In such a case, the CRDC may have to again go through the initialization process.

[0222] Although a synchronized system may lead to higher throughput and may possibly lead to better battery life, in one or more embodiments, it may not be necessary for CRDCs to be synchronized. Because each CRDC operates on a separate channel, there may be no timing-specific consideration that needs to be addressed between CRDCs. Instead, a concern may relate to how the PDK aligns to multiple unsynchronized CRDCs. From a PDK location-tracking

standpoint, the PDK may be required to lock to a single CRDC beacon. The CRDC beacon will indicate to PDKs what other channels a CRDC may be located on. The PDK may not need to attempt receiving from any other CRDC, provided the signal quality metrics for the current CRDC it is monitoring has sufficient signal quality to receive error free data. In the case the signal quality degrades, the PDK may then periodically switch to other channel(s) to determine if a better signal quality can be obtained. If a better signal quality is determined to be on an alternate channel, the PDK may then immediately switch to the alternate channel, provided it is not in association with an RDC at that instance in time. If the PDK has begun association to an RDC, the PDK may have to attempt to finish the association before switching to the alternate channel. It is noted that once a PDK is in association with a RDC, the PDK is no longer required to monitor the CRDC beacon, until the association ends between the devices by releasing the link or by the PDK leaving the RDC cell.

[0223] When an RDC is powered up for the first time, the RDC may not be aware of the network it belongs to or its configuration within the network. The RDC may default to a single cell configuration. For this reason, RDCs placed in a CRDC cell configuration may by default remain in a dormant state upon its first initial power up in the network. This may allow the central server to configure any specific information related to the network into the RDC prior to operation. Some of this information may include, for example, the site ID, a local RDC ID, and other parameters related to the wireless transmission protocol. The site ID is important, because the property owner may not want their RDCs to become associated with another property; thus, the RDC should synchronize to beacons transmitted with that site's ID. The RDC ID is used in communication between a PDK and RDC; hence, there should be one RDC ID per RDC device in the network. Other application-dependent parameters may include how the unit operates when

associated with a PDK and whether the RDC sends data back to the server when data is ready, or if the server must poll the RDC for the information. The central server may then command the RDC to enable its receiver and scan all channels to determine the signal quality of each channel and which CRDCs may be received by the RDC. The operator of the central server may allow the RDC to automatically select which CRDC Beacon to lock to, or can command the RDC to select a specific CRDC beacon. After reviewing the channel list for signal quality, the system may then command which channels the RDC can use for alternate channels for RDC-PDK communications, or the system may command the RDC to automatically select the alternate channels. The system may then place the RDC in operation mode, and the RDC then tunes to the selected CRDC beacon channel and remains there listening for CRDC beacons and any PDK that sends a PDK location response ID. While receiving the c-beacon, the RDC may configure its timeslot information similar to that described above. This defines the superframe structure as well as defining which timeslots (odd or even) the RDC is permitted to communicate with a PDK on the beacon channel.

[0224] In the background, on the alternate wireless link described above with reference to Figure 9, the RDC may continue to scan the alternate channels, updating its list of clear channels. This updated list may then be used when a RDC determines it wants to extend its communication with a PDK in association mode and selects which channel that communication will occur on. The RDC, in operational mode, may perform frame and slot alignment to the CRDC and listen for a PDK location tracking response. On a periodic basis, the RDC may send information back to the central server indicating that it is still operational and indicating the status of the communications channels (e.g., CRDC beacon, alternate channels).

[0225] In one or more embodiments, a registration RDC may be used to initially enable

and to configure a PDK. The registration RDC may have a small cell coverage area by design, measured, for example, in inches. This may require that the unregistered PDK must be in extremely close proximity, e.g., placed on the registration RDC housing, to communicate with the registration RDC, reducing the likelihood of RF eavesdroppers gaining access to PDK setup information.

[0226] The registration RDC may be directly connected to a central server. In addition to specific security features, the registration RDC installs and configures service provider information located on the central server (described above with reference to Figures 6 and 7). Such information may include the service provider ID, secret key, and other parameters that the service provider wants to designate for access within their network. These other parameters may vary in size in the PDK and may be defined by the host system to meet the needs of the property. Information transferred to a PDK may include, for example, the service provider site ID, the service provider's assigned PDK ID, the service provider's secret service ID, the service provider's secret key, and service provider specific access information.

[0227] Now describing an example of an operation in accordance with one or more embodiments, once a system has been installed and properly provisioned, a rated player may walk into the casino. They are greeted by a host and walked over to the registration desk, where the player's information, already in the central server, is linked to a PDK that is given to the player and assigned with specific privileges. The player places the PDK in their pocket and begins to walk throughout the casino. Once the PDK leaves the registration cell, the PDK enters discovery mode and scans the channels for a c-Beacon. If the PDK does not locate the c-beacon, it continues to scan for an undetermined period of time until it either goes into battery save mode or finds a c-beacon.

[0228] Once the PDK finds a c-Beacon, the PDK determines if the c-beacon is a particular type of network and the site ID is in its local service provider database. If the site ID is not in the database, the PDK ignores that c-beacon and keeps looking for other c-beacons on other channels until one is found that is in its local database. Once a valid c-beacon containing a site ID that is in the PDK's local database is found, the PDK extracts the CRDC channel availability flags and checks the other channels in the CRDC channel availability list. The PDK then determines which CRDC has the best signal quality metrics. The PDK switches to that channel and begins receiving c-beacons. The PDK extracts the CRDC and network configuration information as described above. This information may define the framing structure and how the PDK should operate within the network. The PDK then applies the c-beacon parameters to its radio transceiver parameters, configuring the sleep interval and response superframe and timeslot information. Because the PDK has just received a c-beacon, the PDK is now aware of the current superframe count. The PDK then configures its timer to wake up just prior to the expected superframe count that it may communicate on.

[0229] Now also referring to Figure 36, when the sleep timer expires, the PDK may wake up, listen for a specific c-beacon, and verify the superframe count. It then waits a predetermined period of time for its slot to be available and performs CSMA-CA, and if no other device is attempting to respond, it responds with its PDK location tracking response. If another device was detected on the channel, the PDK may then reset its timers and wait for the next predefined superframe and timeslot to wake up and attempt again.

[0230] It is noted that a PDK in accordance with one or more embodiments may be powered by an internal battery of, for example, a type commonly used to power small electronic devices such as watches, calculators, and mobile computing devices. The power of such a client

device battery is consumed when the PDK is active. In an effort to reduce and/or minimize battery consumption, in one or more embodiments, the active time of a PDK as a percentage of total time may be reduced by management of transmission and reception times. For example, as described above, a network in accordance with one or more embodiments may be designed to configure time slots (e.g., frames), groups of time slots (e.g., superframes), and/or coordinating beacon superframes (e.g., c-superframes) in a manner such that a client device is caused to both listen and respond within specific time slots. Because these time slots are configured by the network, they may be precisely predicted, thereby allowing the client device to set a timer, return to sleep mode, and waken when a specific, time-slotted interaction is expected or required of the client device. Further, in one or more embodiments, because a network in accordance with one or more embodiments may implement programmable c-superframe lengths, an operator or system may individually tailor performance to maximize (or at least improve) battery life and/or minimize (or at least reduce) system inter-message latency without requiring access of the client device itself or physical alteration of the client device.

[0231] When the PDK responds with a PDK location tracking response, every RDC within local proximity that can receive the response may log the response message in its database along with signal quality metrics and a timestamp. They will then send the information back to the central server. The response may be sent by the server polling the RDC or by the RDC if it has data to send. Once the central server receives the PDK information from one or multiple RDCs, the server may then determine if any further communication with the PDK is necessary. If, for example, the system wants to validate the PDK, it can perform a validation. The server may then send a command to a specific RDC to set up communications with a specific PDK and wait for a response from that RDC. Because the communication between the RDC and the

central server may not be instantaneous, the RDC may have to wait for the next PDK location tracking response. After performing CSMA-CA, it may immediately instruct the PDK to switch to the alternate channel. If, during the CSMA-CA, the RDC detected another device on the channel, the RDC may wait for the next PDK location tracking response from that PDK and then re-attempt PDK channel reassignment. The PDK may then switch to the alternate channel, perform CSMA-CA, and send a link request to that specific RDC ID with its own ID included. The RDC, looking for the link request with its specific ID and a particular PDK ID, detects the request and then responds with a link grant. Further, the RDC may alert the central server of the link, and a data exchange occurs with information the server is interested in collecting by interrogating that PDK. After the data exchange occurs, the central server commands the RDC to terminate the link. The RDC may then terminate the link, and the PDK may returns to the c-Beacon channel, re-synchronizing to the beacon, and begin monitoring for its timeslot. The PDK may then continue to send responses back to all RDCs in its immediate vicinity when its specific superframe count and timeslot are valid.

[0232] It is noted that the foregoing description detailing a process of PDK validation and interrogation relates to one or more embodiments. However, in one or more other embodiments, the central server may have also altered the service provider information within the PDK.

[0233] If, during the switch to the alternate channel for RDC to PDK communications, the PDK determines the channel is occupied or the PDK does not receive a link grant back from the RDC, the PDK may perform one or more additional attempts. If after all attempts, the PDK does not receive a response from an RDC, that PDK may return to the c-beacon channel, realign to the beacon, and then begin sending its PDK location tracking ID.

[0234] If the RDC was unable to receive the link request from the PDK on the alternate channel, for a predefined period of time, the RDC may flag the error and continue listening on the channel. If the same RDC is again instructed to establish communications with the same PDK, the RDC may choose to use a different alternate channel and redirect the PDK to the new alternate channel for communications.

[0235] Now referring to Figure 37, it shows a PDK wakeup and response flow in a CRDC coordinated system. For purposes of describing Figure 37, it is assumed that the PDK has acquired system synchronization and has gone into the sleep mode after setting its timers to wake up on the next predefined superframe. The PDK remains in sleep mode until the wakeup timer expires and wakes up the PDK. The PDK then enables and tunes its receiver to the c-beacon channel and listens for the beacon for a predefined period of time. If no beacon is detected, the PDK checks for other CRDC channel available flags in its local memory. It then reassesses signal quality and beacons on the alternate CRDC channels.

[0236] After the PDK assesses the other CRDC channels and no beacon is found, the PDK goes back into rediscovery mode scanning all channels looking for a c-beacon. If no c-Beacon is found, the PDK then starts its deep sleep mode. In the event that other CRDC channels are present, the PDK assesses the signal quality of each channel and selects the best channel. The PDK then selects that channel and tunes to it listening for the CRDC beacon.

[0237] When the PDK receives the beacon, it checks all of the parameters associated with it including the superframe count. If the PDK determines the superframe count is not the correct one for it to wake up and respond on, it sets its internal sleep timer to wake up just before the next expected superframe it should respond to and returns to sleep mode. If the PDK determines that the beacon is on the PDK's expected superframe count, the PDK then stays

awake, but stops listening until just before its expected timeslot. The PDK may then perform CSMA-CA to determine if the channel is busy. If the PDK determines the channel is busy, the PDK may again set its internal sleep timer for the next expected superframe and return to the sleep mode.

[0238] If the PDK finds the channel to be available, the PDK then transmits its location tracking response and waits for one additional timeslot for a response from an RDC. If the PDK receives a response from an RDC, it then performs the command sent by the RDC (e.g., to switch to the alternate communications channel). If the PDK does not receive a response from an RDC, the PDK may again set its internal sleep timer to wake up just before the next expected superframe it should respond to and then return to sleep mode.

[0239] As described above with reference to Figure 31, in one or more embodiments, an RDC may be located within an electronic game on an electronic gaming floor. Each game may have an integrated dual wireless link RDC, such as that described above with reference to Figure 9. The RDC may be used for PDK location tracking and PDK association. There are various approaches in integrating an RDC into an electronic game or other equipment housing. In one approach, shown in Figure 38, the integration of the RDC is from a physical perspective; no electrical connections exist between the RDC and the game. In this configuration, the RDC and electronic game need not even reside within the same enclosure; they coexist as two physically close, but separate, devices. They may not be connected in any way other than physical proximity. The purpose of placing them in close physical proximity is to allow the RDC to perform proximity detection for any player carrying a PDK that may be positioned near the front of the machine. In this configuration, each device (RDC and electronic game) may have separate connections to a central server (or an external data concentrator) used to connect both devices to

a single wired connection back to the server. It is noted that the game may operate autonomously, with the possible exception of responses to any commands sent to it by the server. In this case, the RDC may provide both proximity detection and association with PDKs.

[0240] Now also referring to Figure 39, it shows an example of a handshake that may take place from the time a player carrying a PDK is detected to the time the game is enabled for that player. For purposes of clarity, the CRDC is not shown in Figure 39. The handshake starts by the PDK detecting a c-beacon. Each time the c-beacon is detected on the expected superframe and timeslot, the PDK may send out a PDK location tracking response.

[0241] The RDC near the game detects the response and sends the PDK's information back to the central server. The server realizes the user is close to the game and may send a command back to the game instructing it to display a message for the player in an effort to entice the player to play. In this example, the player may see the message and sit down at the game and press a button to commence play. In turn, the game sends a message back to the server indicating that the button has been pressed. The server then requests the RDC to make a connection with the player's PDK. Upon the next c-beacon, the player's PDK responds and the RDC receives the response. The RDC then transmits back to the PDK to change to another channel for association mode to begin. It is noted that up until this time, the PDK was in tracking mode. The PDK then switches to the alternate channel indicated by the RDC and sends out a PDK link request with both the PDK ID and the RDC ID. The RDC detects the request and sends back a PDK link grant. The PDK and the RDC then exchange secure information to establish trust, prior to establishing a secure link for validation of the PDK. The RDC may also lower its RF power and instruct the PDK to lower its RF power in order to enforce close proximity. Periodic data exchange may continue to between the RDC and PDK.

[0242] After the secure link is established, the RDC may report back to the central server that the link is established between the RDC and PDK. The central server may then send a command to the game to display a message, which the game then displays. The player may see the message on the screen and presses his PDK's button causing it to transmit this event over the secure link to the RDC. The RDC relays this information back to the server. When the central Server receives the button press message, it can enable the game so that the player may begin playing.

[0243] The handshake continues as shown in Figure 40. After the game has been enabled for the player to play, the server may then send a command to the RDC to start polling the player's PDK. The RDC then periodically polls the PDK and may have returned the responses of each poll back to the server, as shown in Figure 40.

[0244] Still referring to the example being described with reference to Figures 39 and 40, the player may continue to play the game for a while, then finishes and decides to leave. When the player exits the coverage area of the RDC near the game, the communications link is broken. The RDC attempts to poll the PDK, but receives no response. The RDC continues a few more times with no response. The RDC then reports back to the central server that the link was lost and the PDK is out of range. The central server then sends a message to the game to return it to an idle state so that another player can play, then requests the game to send back the player's game play information (if not already obtained), which the server logs.

[0245] As described above with reference to Figures 39 and 40, a central server may be the communications medium linking an RDC to a game. It communicates with the game, tying the PDK to that game. If either device loses connection to the central server, game play may stay enabled.

[0246] Now referring to Figure 41, it shows an electronic game with an integrated RDC, internally connected to communicate directly with the game. Thus, all power and communication for the RDC may go through the electronic game. In this configuration, both the RDC and game reside within the same game enclosure where they jointly coexist. All information exchanged between the RDC and Bally Central Server must flow through the electronic game's controller and network interface. The purpose of placing them in the same enclosure allows the RDC to perform proximity detection for any player carrying a PDK® that may be positioned near the front of the machine.

[0247] At least one difference in the configuration shown in Figure 41 relative to the configuration shown in Figure 38 is that the game's internal controller may act to reduce the traffic loading on the back-end network and perform more local verification of the communications link between the PDK and the RDC. To illustrate a difference in interaction between these two configurations, reference is made to the handshake diagram shown in Figure 42. More particularly, Figure 42 shows a handshake that may take place from the time a player carrying a PDK is detected to the time the game is enabled for that player. For purposes of clarity, the CRDC is not shown in Figure 42. The handshake starts by the PDK detecting a c-beacon. Each time the c-beacon is detected on the expected superframe and timeslot, the PDK sends out a PDK location tracking response. The RDC within the game detects the response and sends the PDK information back to a central server via the game's internal controller. The server is made aware that the user is close to the game and sends a command back to the game controller instructing the game to, for example, give the user a free game along with optionally displaying the user's name. The game then displays a message for the player in an effort to entice the player to play. The player may then see the message, sit down at the game, and press a

button to commence game play. In turn, the game controller detects the button press and requests the RDC to make a connection with the player's PDK. Upon the next c-beacon, the PDK responds and the RDC receives the response. The RDC may then transmit back to the PDK a command to change to an alternate channel for association. The player's PDK then switches to the alternate channel indicated by the RDC and sends out a PDK link request with both the PDK ID and the RDC ID. The RDC detects the request and sends back a PDK link grant. The PDK and the RDC may then exchange secure information to establish trust, prior to establishing a secure link for validation of the PDK. The RDC may also lower its RF power and instruct the PDK to lower its RF power in order to enforce close proximity. Periodic data exchange may then continue between the RDC and PDK.

[0248] After the secure link is established, the RDC reports back to the game controller that the link is established between the RDC and PDK. The game may then display an instructional message for game play. The player may see the message on the screen and presses the player's PDK button, causing the PDK to transmit this event over the secure link to the RDC. The RDC may then send this information back to the game controller. When the game controller receives the button press message, it can enable the game so that the player can begin playing.

[0249] The handshake continues as shown in Figure 43. After the game was enabled for the player to play, the game controller sends a command to the RDC to start polling the player's PDK. The RDC then periodically polled his PDK and had the option of returning the responses of each poll back to the controller, as shown in Figure 43.

[0250] Returning to the example described above with reference to Figures 42 and 43, the player may continue to play the game for a while, then finishes and decides to leave. When the player exits the coverage area of the RDC near the game, the communications link is broken.

The RDC attempts to poll the PDK, but receives no response. The RDC may continue a few more times, with no response. The RDC then reports back to the game controller that the link was lost and the PDK is out of range. The game controller returns itself to an idle state so that another player can play and indicates back to the central server that the PDK is out of range. The server may then request the game to send the player's game play information (if not already received), which is then logged.

[0251] As described above with reference to Figures 42 and 43, in one or more embodiments, the game controller may become more involved in the RDC to PDK association, thereby potentially reducing the back-end system network's traffic loading relative to that experienced with the configuration where an RDC is electrically separate from the game controller. The game controller may also react faster to the user walking out of range and may not require any response from the server in order to maintain the link. It is further noted that a broken link between the central server, game controller, and RDC may not result in any loss of any interaction between the RDC and the game controller.

[0252] While the invention has been described with respect to a limited number of embodiments, those skilled in the art, having benefit of the above description, will appreciate that other embodiments may be devised which do not depart from the scope of the present invention as described herein. Accordingly, the scope of the present invention should be limited only by the appended claims.

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CLAIMS

What is claimed is:

1. A method of facilitating data exchange, comprising:

determining a first specified time slot based on synchronization information wirelessly received by a first client device and priority level data associated with a first class, wherein the first class is associated with one or more of the first client device and a user of the first client device;

assigning the first specific time slot for the first client device to wirelessly communicate with a fixed proximity-based reader device;

determining a change in network traffic;

responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class.

2. The method of claim 1, comprising:

assigning a second specific time slot to the first client device, the second specific time slot set according to the first class.

3. The method of claim 2, comprising:

determining a second change in the network traffic, and

wherein the assignment of the second specific time slot to the first client device according to the first class is responsive to the second change in the network traffic.

4. The method of claim 1, wherein assigning the first specific time slot comprises:

masking a bit field of the first client device.

5. The method of claim 4, wherein the mask is wirelessly communicated to the first client device.

6. The method of claim 2, wherein the first specified time slot and the second specified time slot are on different wireless channels.

7. The method of claim 3, comprising:

determining a third change in the network traffic; and

reassigning the first specific time slot to the first client device responsive to the third change in the network traffic.

8. The method of claim 1, further comprising:

reassigning the first specific time slot to a second client device in response to a detection that the first client device is unavailable.

9. The method of claim 1, further comprising:

determining that the first client device should switch to a different channel; and

sending a message to the first client device and the first client device, responsive to receiving the message, switching the channel upon which the first client device wirelessly communicates with a fixed proximity-based reader device.

10. The method of claim 9, wherein the message includes information identifying the first client device, information identifying the fixed proximity-based reader device, a designation of a channel and a command to switch to the designated channel.

11. The method of claim 9, wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system.

12. A system, comprising:

a reader device having a first interface and a second interface, the first interface configured to receive synchronization information on a first channel and the second interface configured to communicate with a client device on a second channel in accordance with the synchronization information; and

a portable client device configured to wirelessly receive the synchronization information including one or more of information assigning a first specific time slot during which the portable client device can communicate with one or more of the reader device and a network device, and responsive to a change in network traffic, information unassigning the first specific time slot, the time slot determined according to priority level data associated with a class, the class associated with the one or more of the portable client device and the user of the portable client device.

13. The system of claim 12, wherein the client device is configured to transmit data to one or more of the reader device and the network device during the specific time slot.

14. The system of claim 12, wherein the client device is configured to receive data from one or more of the reader device and the network device during the specific time slot.

15. The system of claim 12, wherein the time slot is determined based on a mask applied to a bit field stored in the client device, and wherein the mask is wirelessly communicated to the client device as part of the synchronization information wirelessly broadcasted by the network device.

16. The system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to another client device.

17. The system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic.

18. The system of claim 12, wherein the reader device is configured to reassign the timeslot during which the client device communicates with the reader device based at least in part on at least one of a user associated with the client device, a class of a user associated with the client device, a class of the client device, and a network traffic load in the system.

19. The system of claim 12, wherein the reader device is further configured to detect the portable client device on the first channel and sending a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device, the reader device capable of wirelessly communicating on the first and the second wireless channels and further configured to switch to the second channel responsive to receiving the message.

20. The system of claim 19, wherein the message includes information identifying the portable client device, information identifying the reader device, a designation of a channel and a command to switch to the designated channel.

ABSTRACT

Wireless client devices within a wireless network exchange data with other wireless devices during particular time slots determined by the network. More particularly, the system generates and wirelessly broadcasts synchronization information to the client devices, where the synchronization information contains individual masks to be applied to bit fields of individual client devices, where said time slots are determined in accordance with the masked bit fields. In such a manner, client devices can be coordinated to communicate with the system in a dynamic real-time tiered manner.

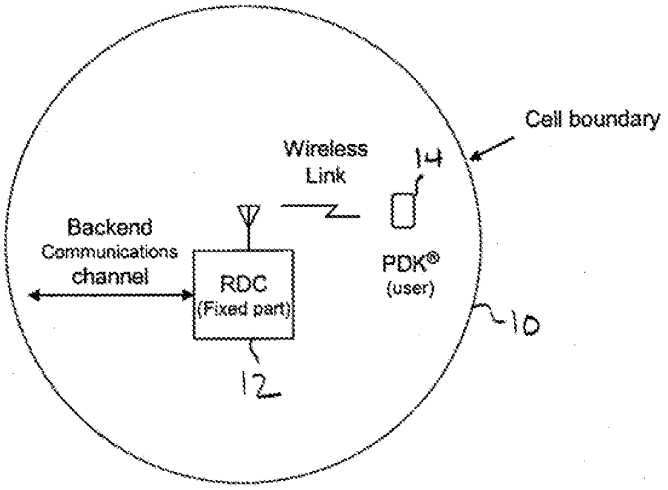


FIGURE 1

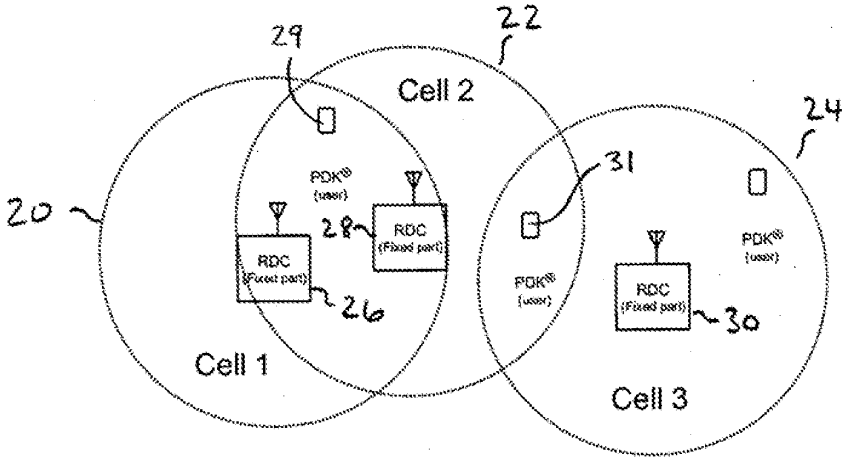


FIGURE 2

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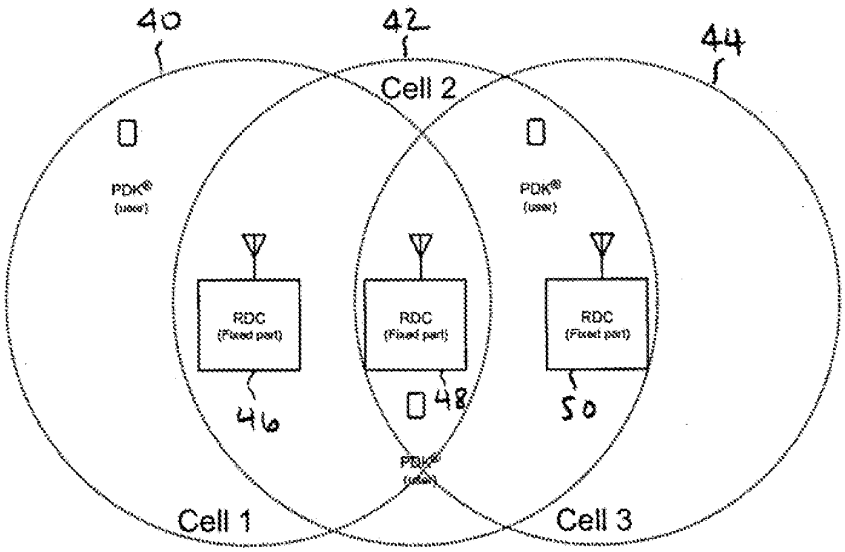

40
42
44
Cell 2
PDK®
(user)
PDK®
(user)
RDC
(Fixed part)
RDC
(Fixed part)
RDC
(Fixed part)
46
48
50
PDK®
(user)
Cell 1
Cell 3

FIGURE 3

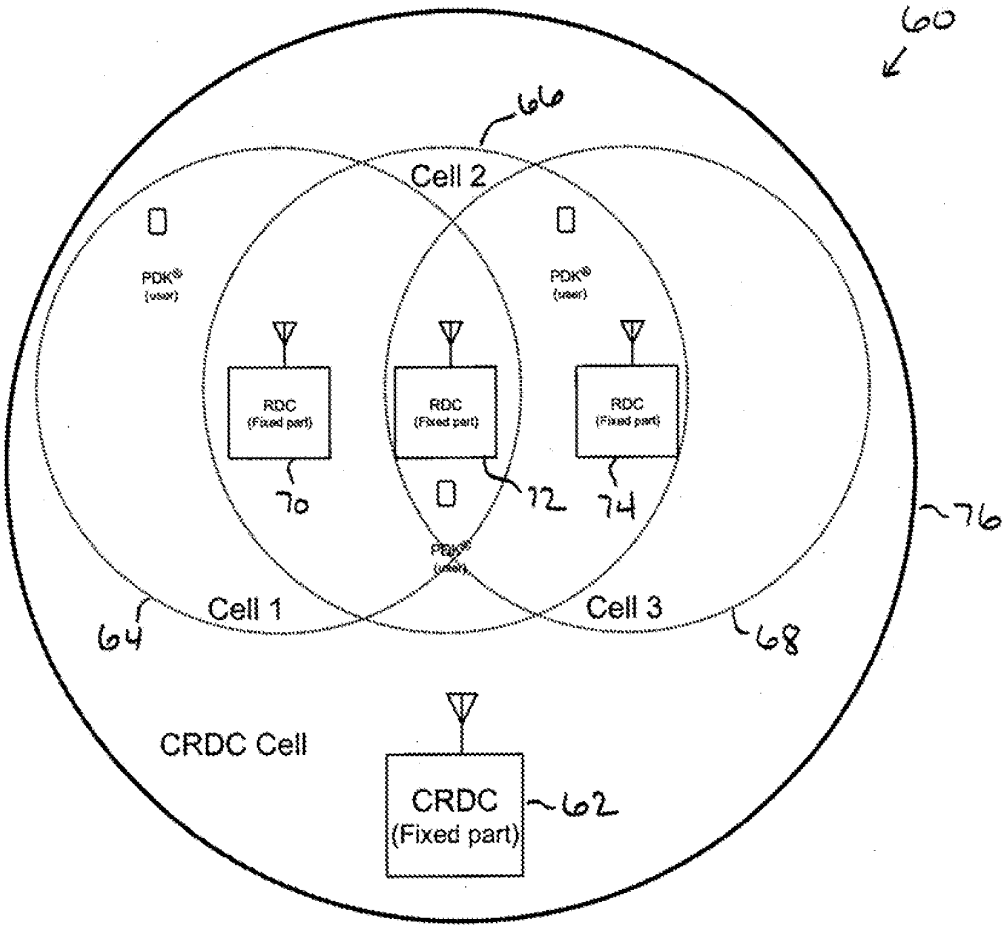

60
66
Cell 2
PDK®
(user)
PDK®
(user)
RDC
(Fixed part)
RDC
(Fixed part)
RDC
(Fixed part)
70
72
74
76
PDK®
(user)
Cell 1
Cell 3
64
68
CRDC Cell
CRDC
(Fixed part)
62

FIGURE 4

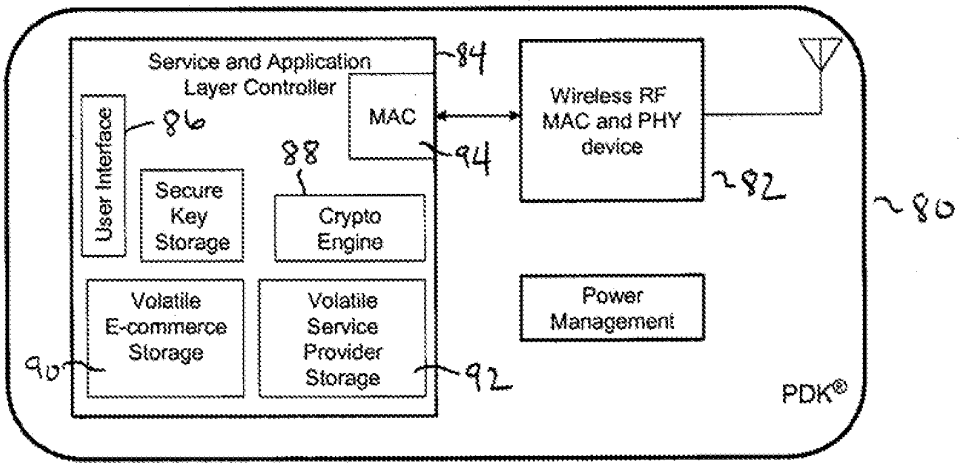

Service and Application Layer Controller
84
User Interface
86
88
MAC
94
Wireless RF MAC and PHY device
82
80
Secure Key Storage
Crypto Engine
Volatile E-commerce Storage
Volatile Service Provider Storage
90
92
Power Management
PDK®

FIGURE 5

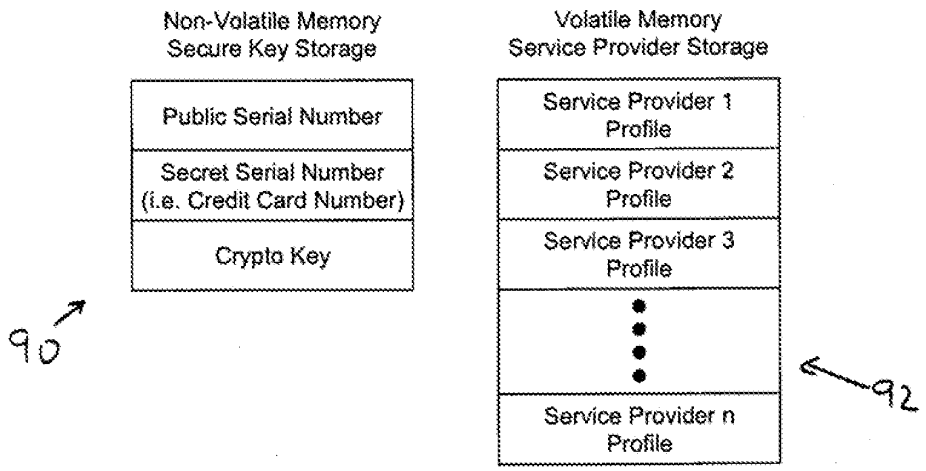

Non-Volatile Memory
Secure Key Storage
Public Serial Number
Secret Serial Number
(i.e. Credit Card Number)
Crypto Key
90
Volatile Memory
Service Provider Storage
Service Provider 1
Profile
Service Provider 2
Profile
Service Provider 3
Profile
Service Provider n
Profile
92

FIGURE 6

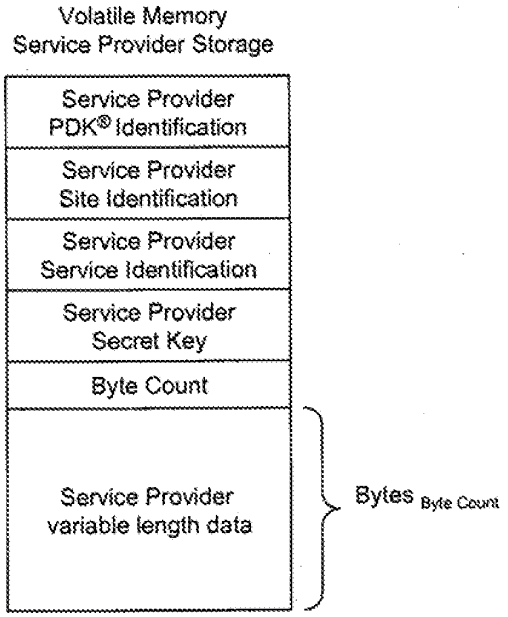

Volatile Memory
Service Provider Storage
Service Provider PDK® Identification
Service Provider Site Identification
Service Provider Service Identification
Service Provider Secret Key
Byte Count
Service Provider variable length data
Bytes Byte Count

FIGURE 7

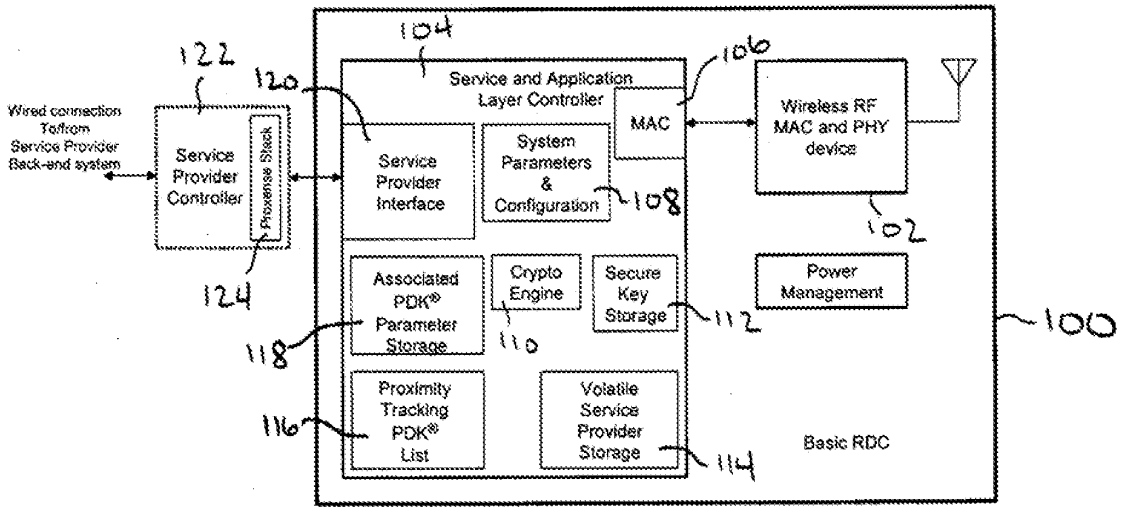

104
122
120
106
Service and Application Layer Controller
MAC
Wireless RF MAC and PHY device
Wired connection To/from Service Provider Back-end system
Service Provider Controller
Proxense Stack
Service Provider Interface
System Parameters & Configuration
108
102
124
Associated PDK® Parameter Storage
Crypto Engine
Secure Key Storage
Power Management
118
110
112
100
Proximity Tracking PDK® List
Volatile Service Provider Storage
116
114
Basic RDC

FIGURE 8

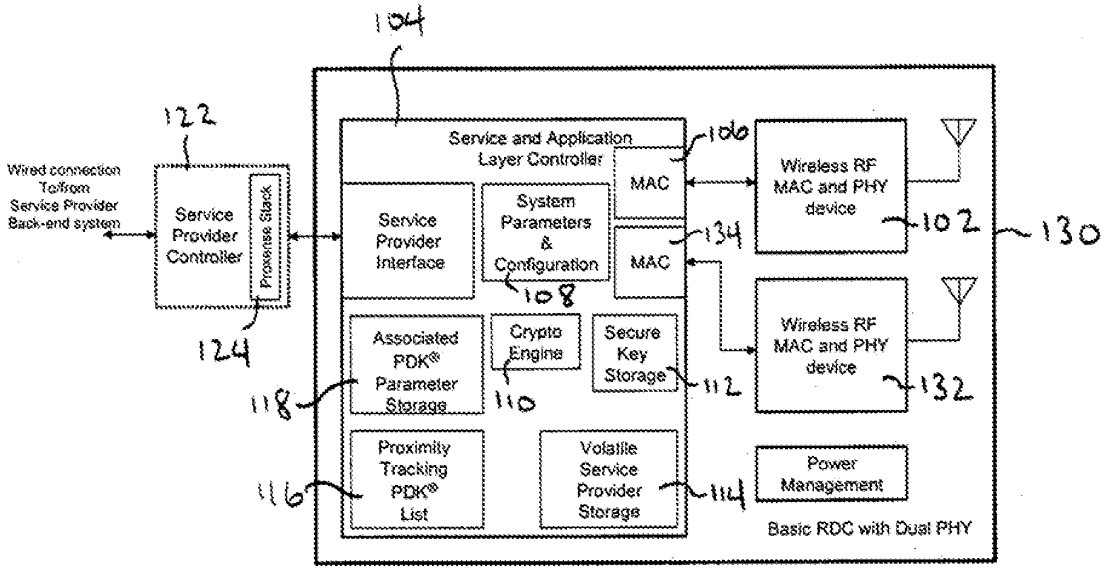

104
122
Wired connection To/from Service Provider Back-end system
Service Provider Controller
Proximity Stack
124
Service and Application Layer Controller
106
MAC
Wireless RF MAC and PHY device
102
130
Service Provider Interface
System Parameters & Configuration
108
MAC
134
Associated PDK® Parameter Storage
118
Crypto Engine
110
Secure Key Storage
112
Wireless RF MAC and PHY device
132
Proximity Tracking PDK® List
116
Volatile Service Provider Storage
114
Power Management
Basic RDC with Dual PHY

FIGURE 9

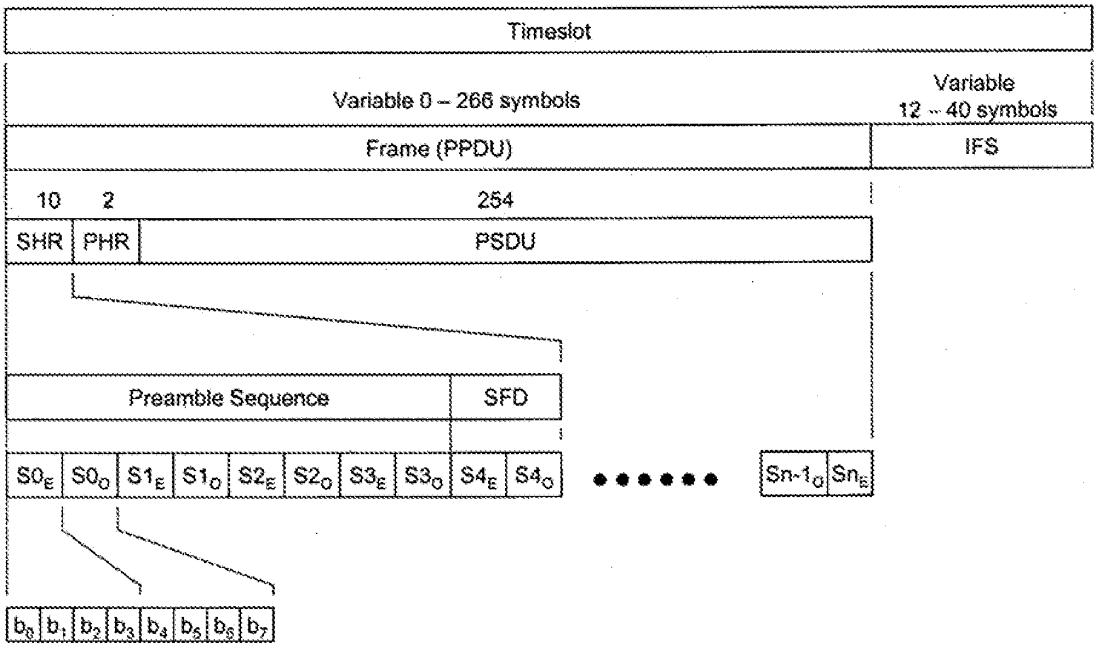

Timeslot
Variable 0 – 266 symbols
Variable
12 – 40 symbols
Frame (PPDU)
IFS
10
2
254
SHR
PHR
PSDU
Preamble Sequence
SFD
S0E S0O S1E S1O S2E S2O S3E S3O S4E S4O
Sn-1O SnE
b0 b1 b2 b3 b4 b5 b6 b7

FIGURE 10

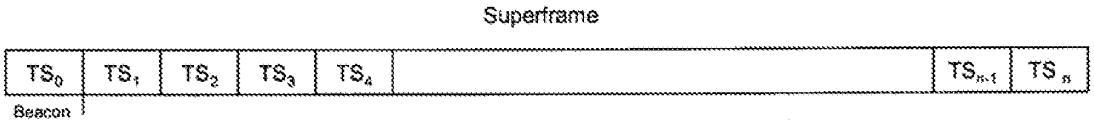


FIGURE 11

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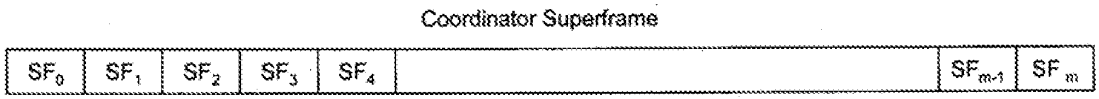


FIGURE 12

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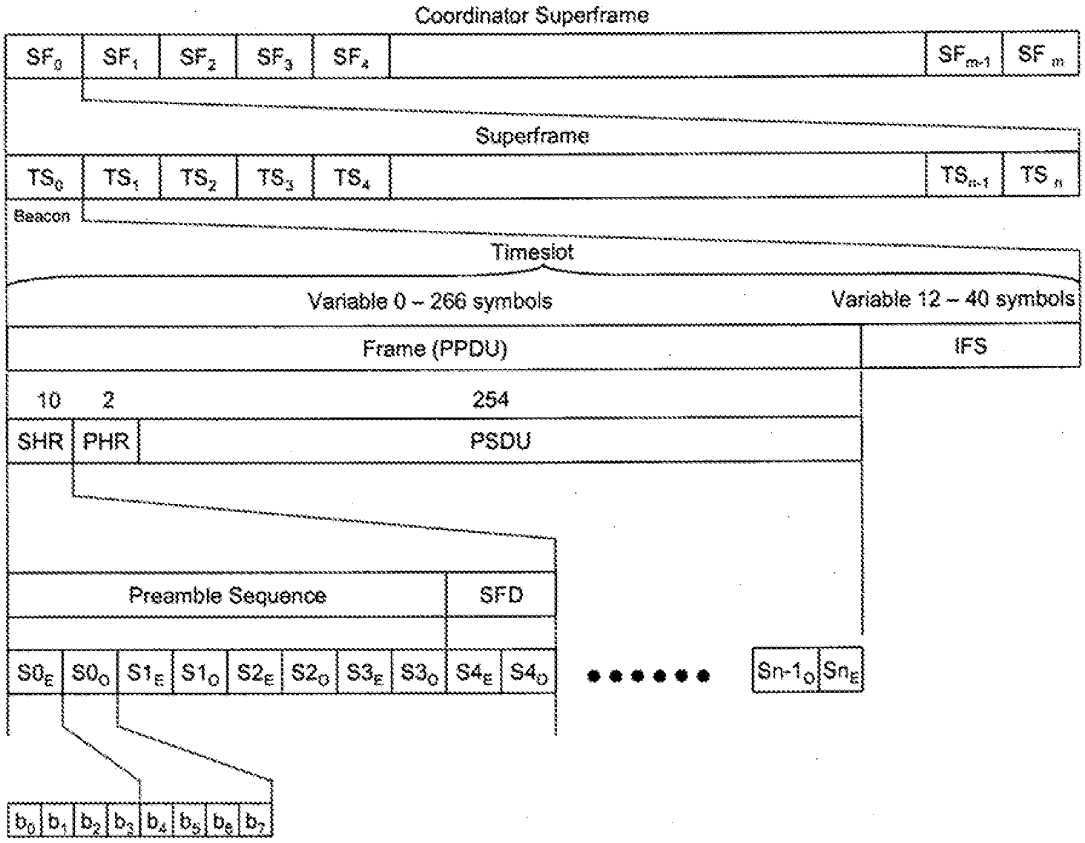

Coordinator Superframe
SF0
SF1
SF2
SF3
SF4
SFm-1
SF m
Superframe
TS0
TS1
TS2
TS3
TS4
TSn-1
TS n
Beacon
Timeslot
Variable 0 – 266 symbols
Variable 12 – 40 symbols
Frame (PPDU)
IFS
10
2
254
SHR
PHR
PSDU
Preamble Sequence
SFD
S0E
S0O
S1E
S1O
S2E
S2O
S3E
S3O
S4E
S4O
Sn-1O
SnE
b0
b1
b2
b3
b4
b5
b6
b7

FIGURE 13

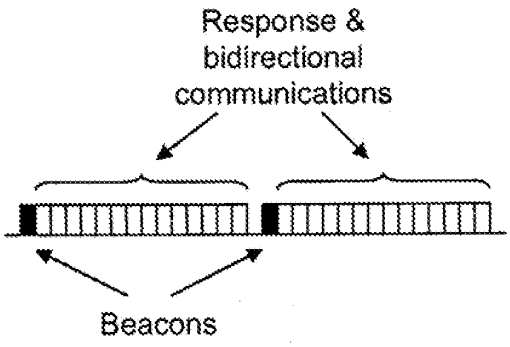


FIGURE 14

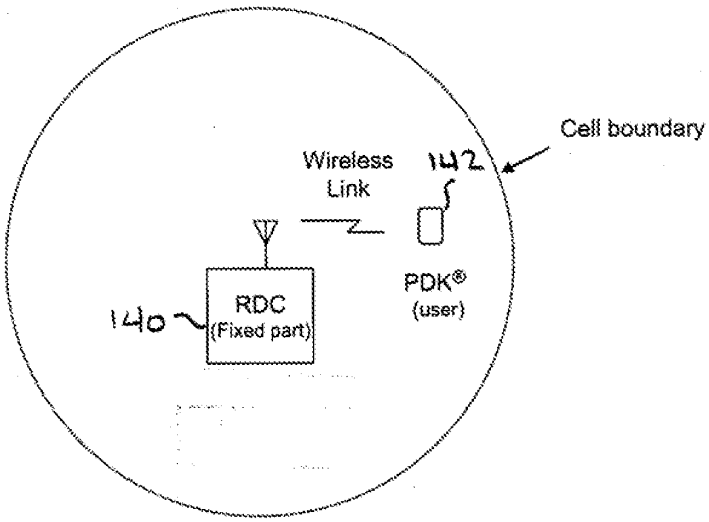


FIGURE 15

INTEL-1002
U.S. Patent 9,265,043

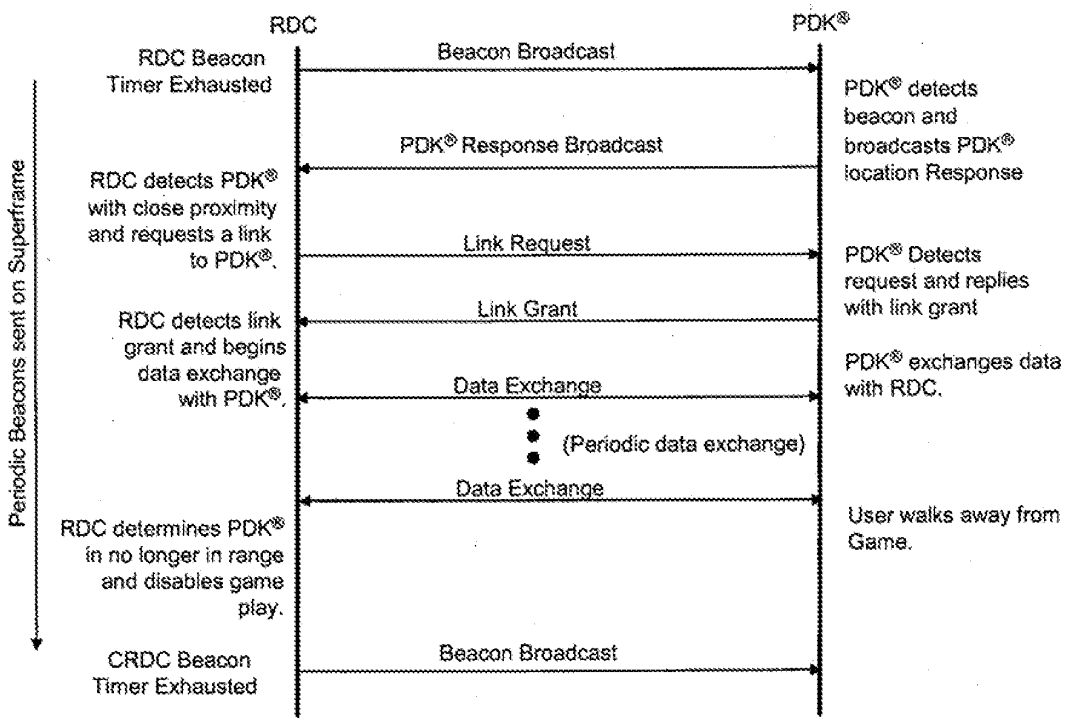

RDC
PDK®
RDC Beacon Timer Exhausted
Beacon Broadcast
PDK® detects beacon and broadcasts PDK® location Response
PDK® Response Broadcast
RDC detects PDK® with close proximity and requests a link to PDK®.
Link Request
PDK® Detects request and replies with link grant
Link Grant
RDC detects link grant and begins data exchange with PDK®.
PDK® exchanges data with RDC.
Data Exchange
(Periodic data exchange)
Data Exchange
User walks away from Game.
RDC determines PDK® in no longer in range and disables game play.
CRDC Beacon Timer Exhausted
Beacon Broadcast
Periodic Beacons sent on Superframe

FIGURE 16

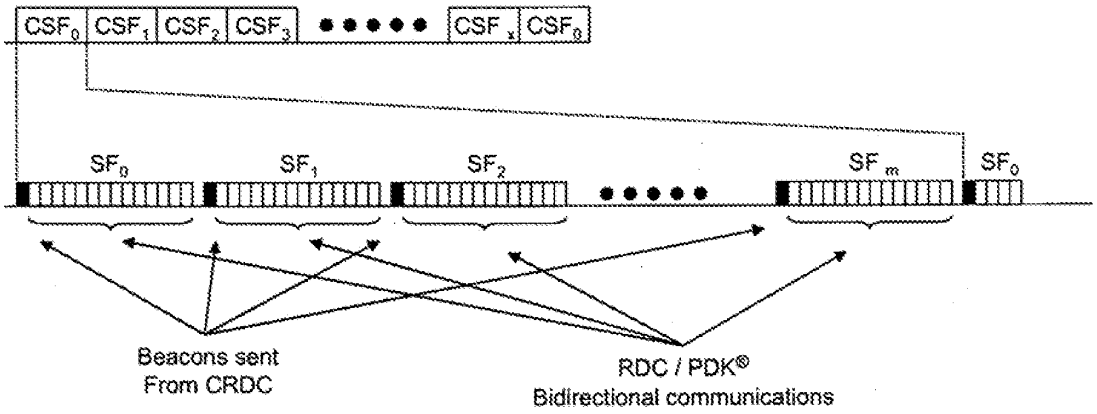

CSF0
CSF1
CSF2
CSF3
CSF x
CSF8
SF0
SF1
SF2
SF m
SF0
Beacons sent
From CRDC
RDC / PDK®
Bidirectional communications

FIGURE 17

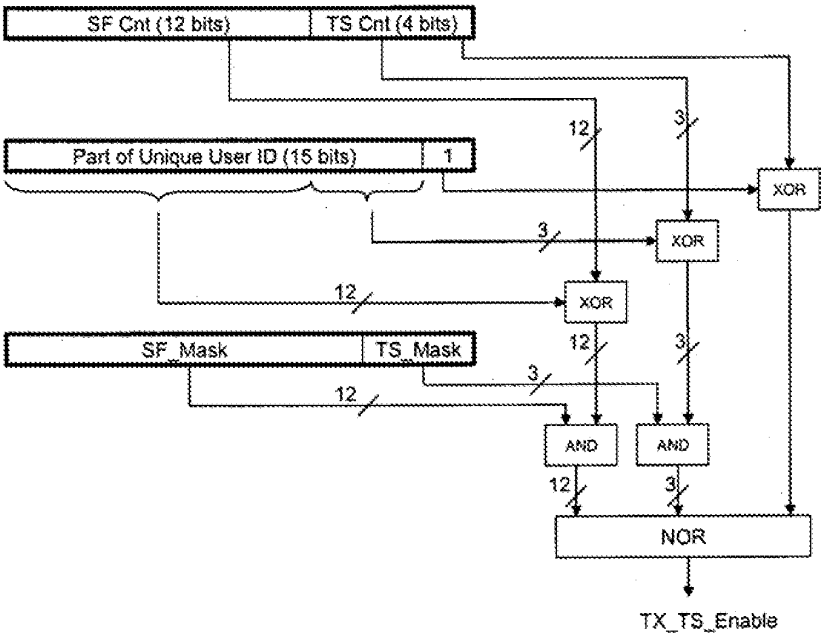

SF Cnt (12 bits)
TS Cnt (4 bits)
Part of Unique User ID (15 bits)
1
SF_Mask
TS_Mask
12
3
XOR
XOR
XOR
AND
AND
NOR
TX_TS_Enable

FIGURE 18

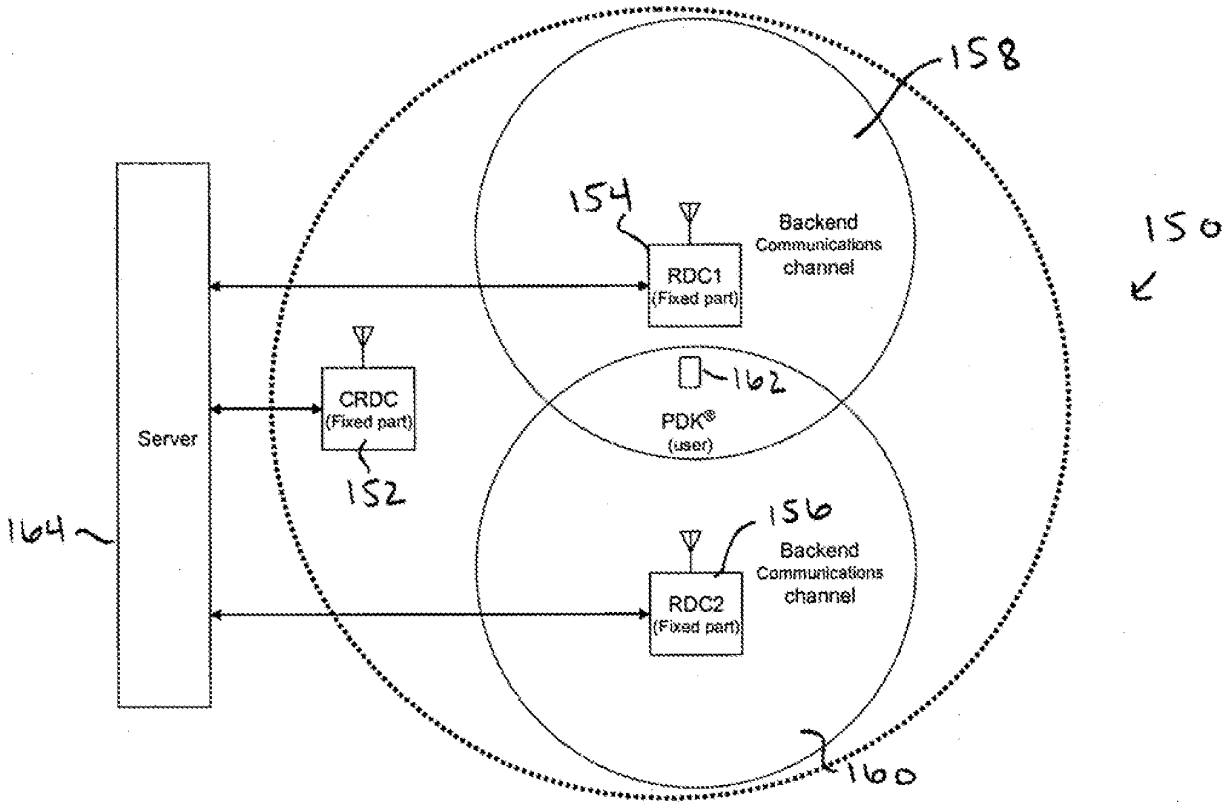


FIGURE 19

INTEL-1002
U.S. Patent 9,265,043

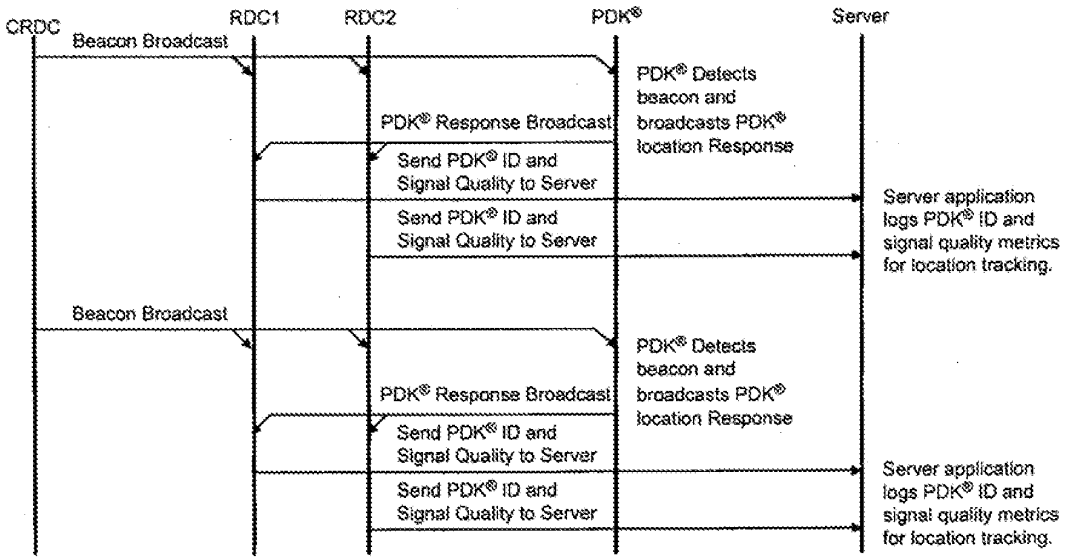

CRDC
RDC1
RDC2
PDK®
Server
Beacon Broadcast
PDK® Detects beacon and broadcasts PDK® location Response
PDK® Response Broadcast
Send PDK® ID and Signal Quality to Server
Server application logs PDK® ID and signal quality metrics for location tracking.
Send PDK® ID and Signal Quality to Server
Beacon Broadcast
PDK® Detects beacon and broadcasts PDK® location Response
PDK® Response Broadcast
Send PDK® ID and Signal Quality to Server
Server application logs PDK® ID and signal quality metrics for location tracking.
Send PDK® ID and Signal Quality to Server

FIGURE 20

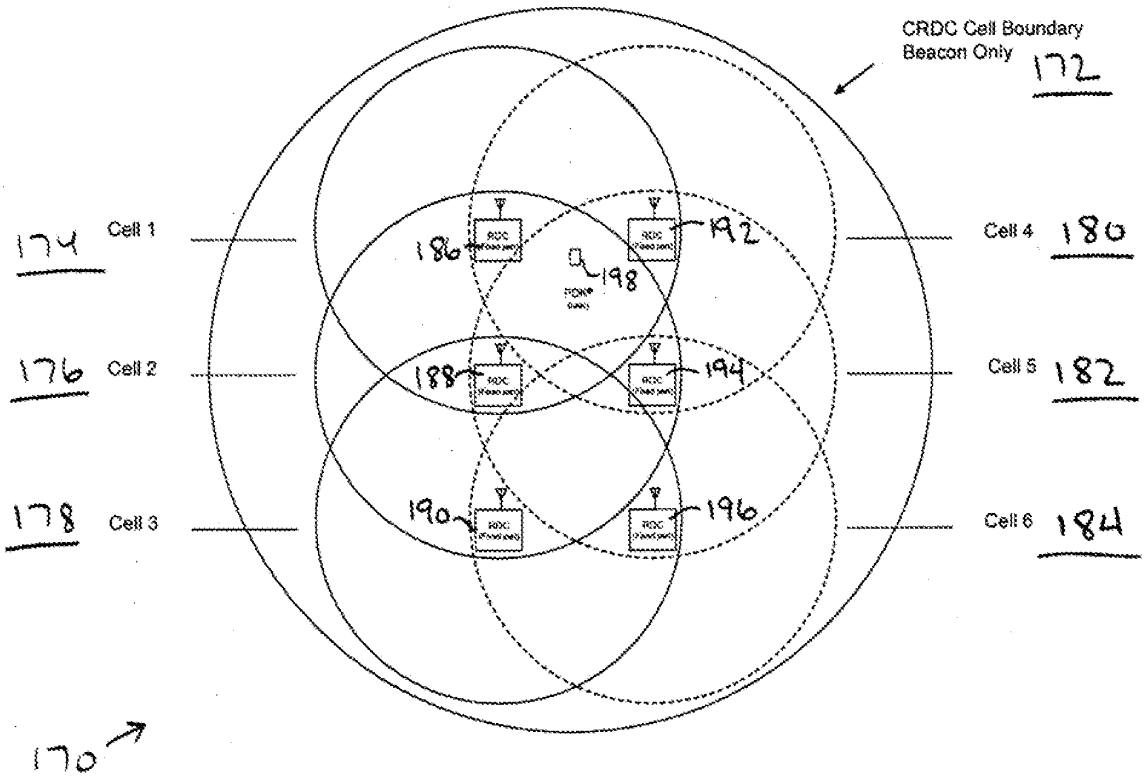


FIGURE 21

INTEL-1002
U.S. Patent 9,265,043

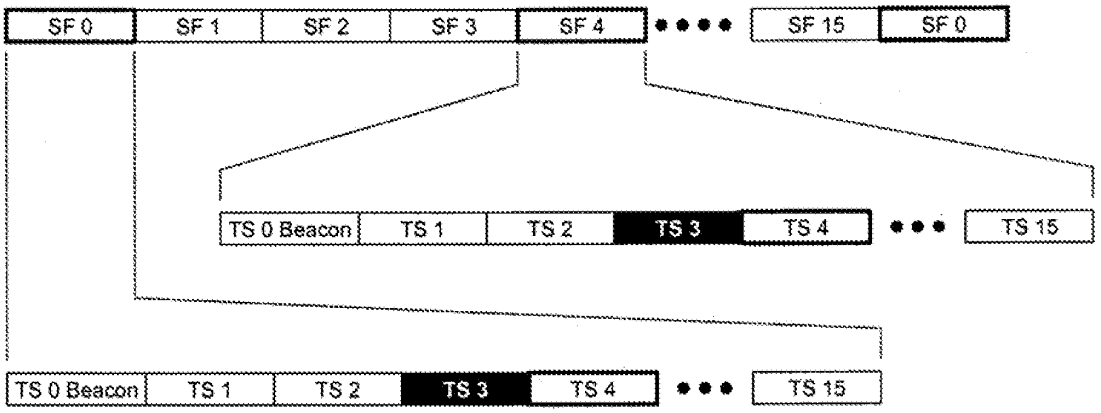


FIGURE 22

INTEL-1002
U.S. Patent 9,265,043

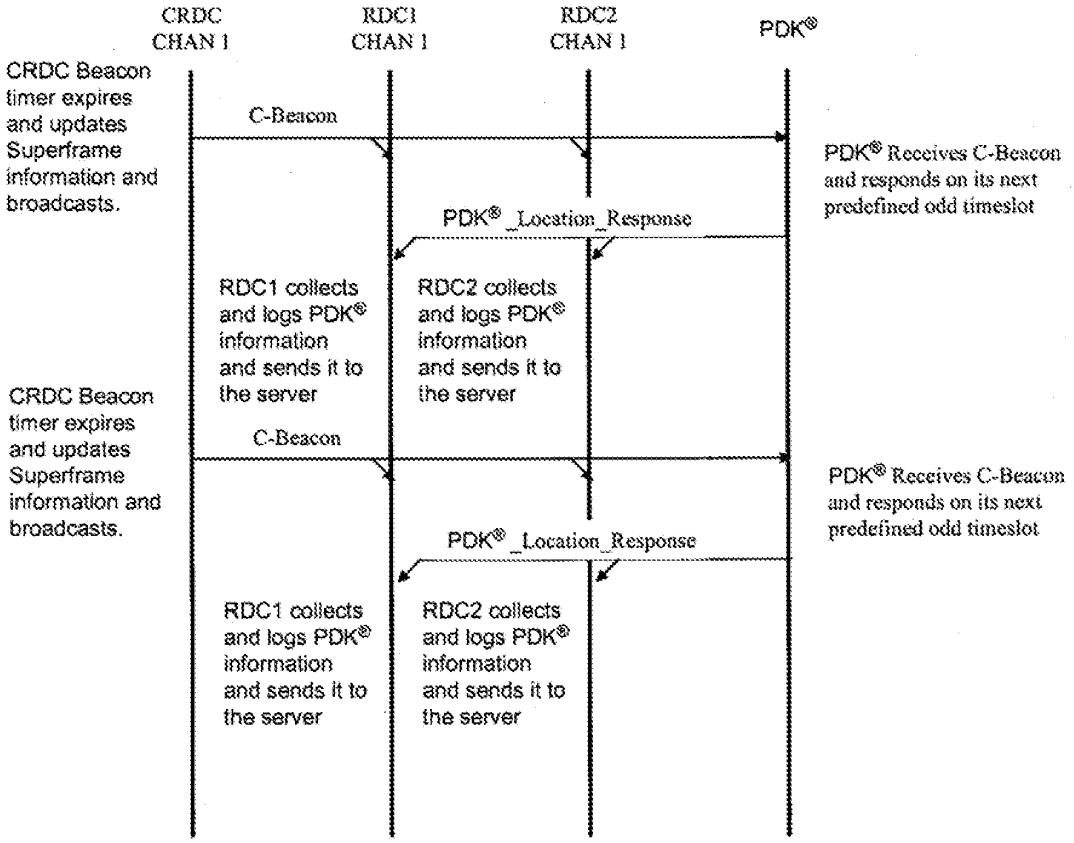

CRDC CHAN 1
RDC1 CHAN 1
RDC2 CHAN 1
PDK®
CRDC Beacon timer expires and updates Superframe information and broadcasts.
C-Beacon
PDK® Receives C-Beacon and responds on its next predefined odd timeslot
PDK® _Location_Response
RDC1 collects and logs PDK® information and sends it to the server
RDC2 collects and logs PDK® information and sends it to the server
CRDC Beacon timer expires and updates Superframe information and broadcasts.
C-Beacon
PDK® Receives C-Beacon and responds on its next predefined odd timeslot
PDK® _Location_Response
RDC1 collects and logs PDK® information and sends it to the server
RDC2 collects and logs PDK® information and sends it to the server

FIGURE 23

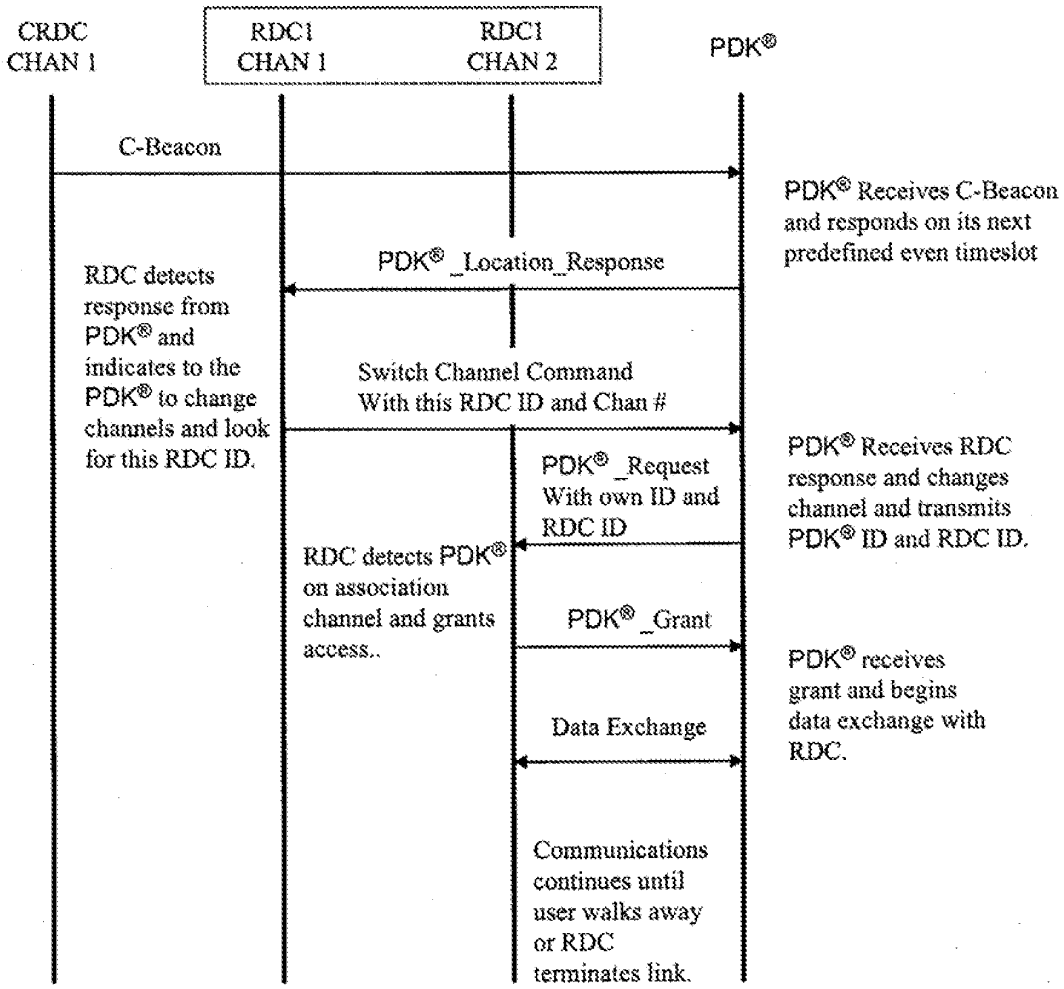

CRDC
CHAN 1
RDC1
CHAN 1
RDC1
CHAN 2
PDK®
C-Beacon
PDK® Receives C-Beacon and responds on its next predefined even timeslot
PDK® _Location_Response
RDC detects response from PDK® and indicates to the PDK® to change channels and look for this RDC ID.
Switch Channel Command
With this RDC ID and Chan #
PDK® Receives RDC response and changes channel and transmits PDK® ID and RDC ID.
PDK® _Request
With own ID and RDC ID
RDC detects PDK® on association channel and grants access..
PDK® _Grant
PDK® receives grant and begins data exchange with RDC.
Data Exchange
Communications continues until user walks away or RDC terminates link.

FIGURE 24

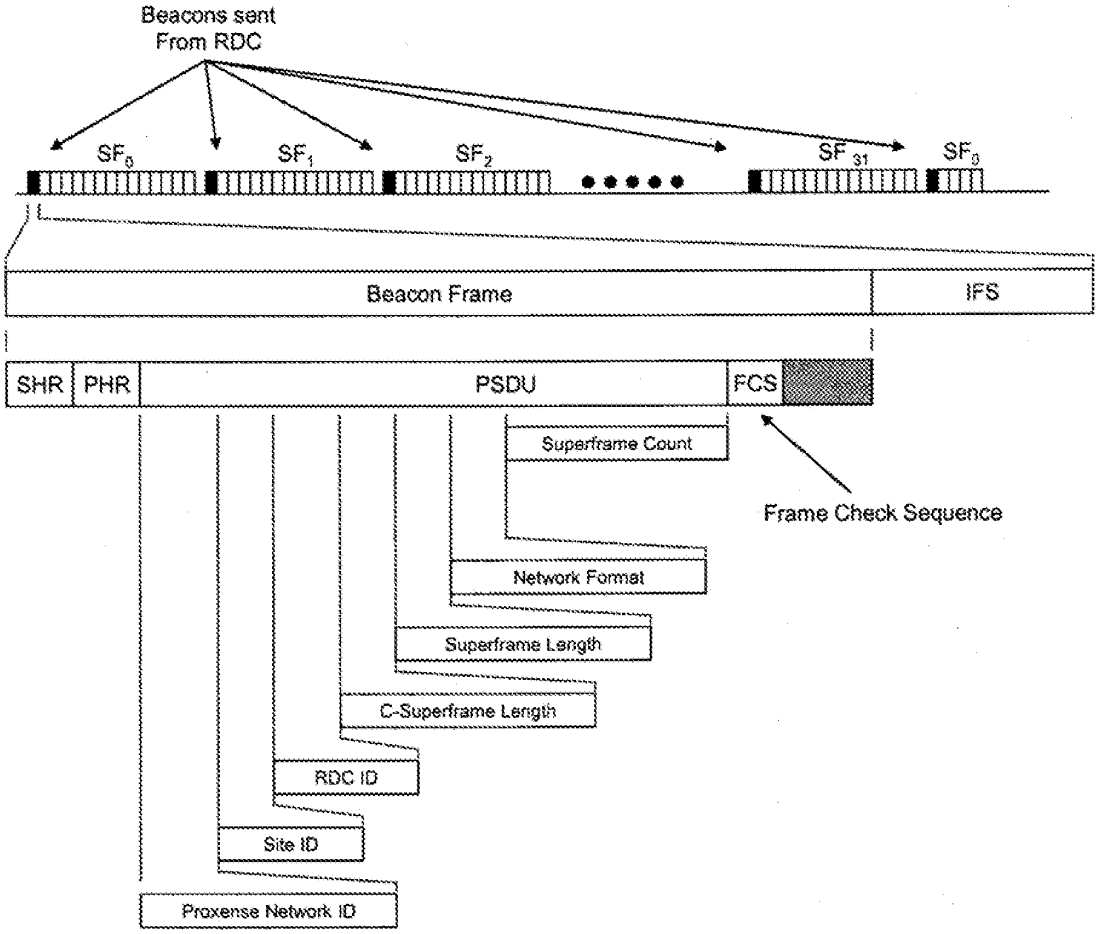

Beacons sent
From RDC
SF0
SF1
SF2
SF 31
SF0
Beacon Frame
IFS
SHR
PHR
PSDU
FCS
Superframe Count
Frame Check Sequence
Network Format
Superframe Length
C-Superframe Length
RDC ID
Site ID
Proxense Network ID

FIGURE 25

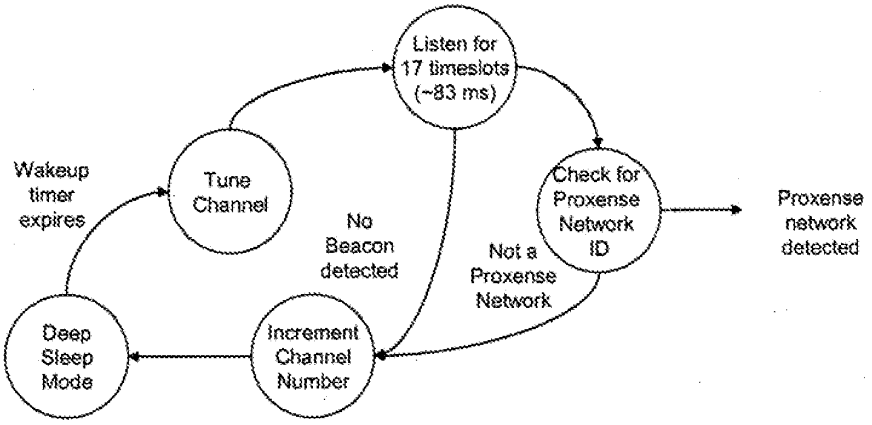


FIGURE 26

INTEL-1002
U.S. Patent 9,265,043

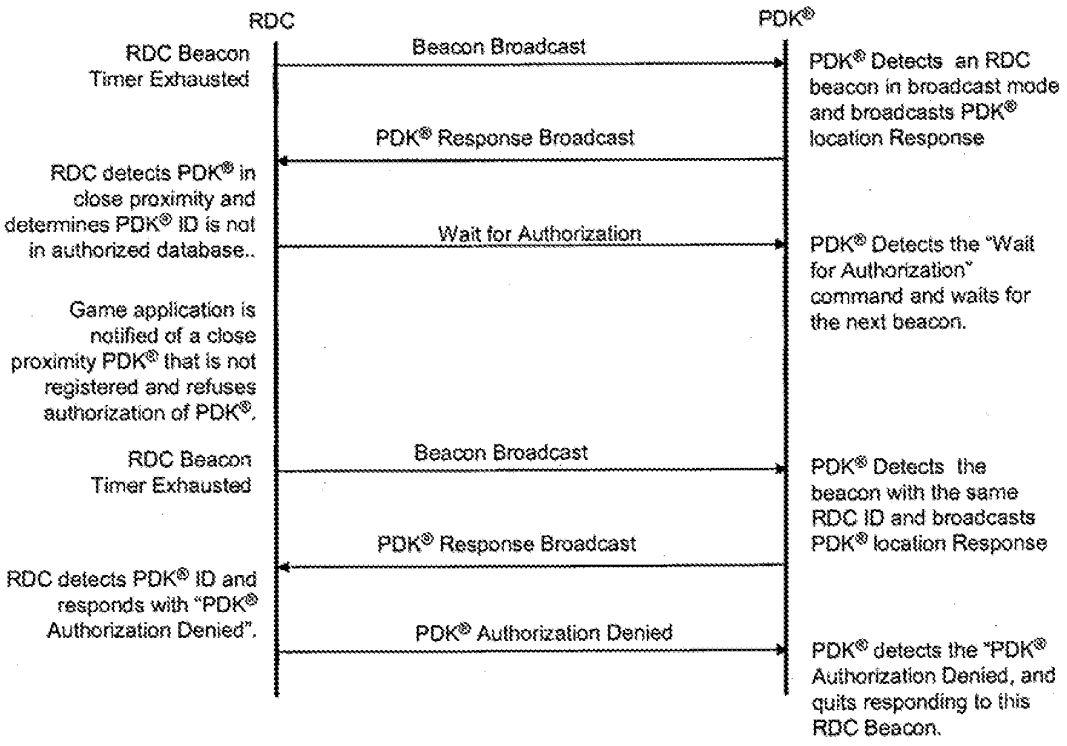


FIGURE 27

INTEL-1002
U.S. Patent 9,265,043

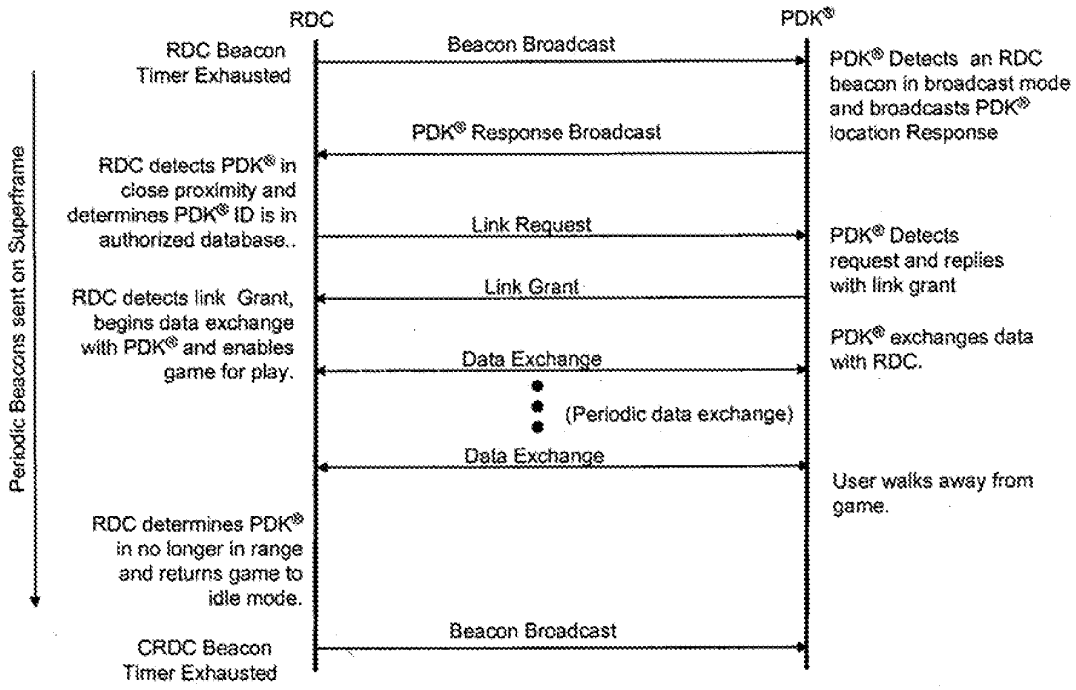


FIGURE 28

INTEL-1002
U.S. Patent 9,265,043

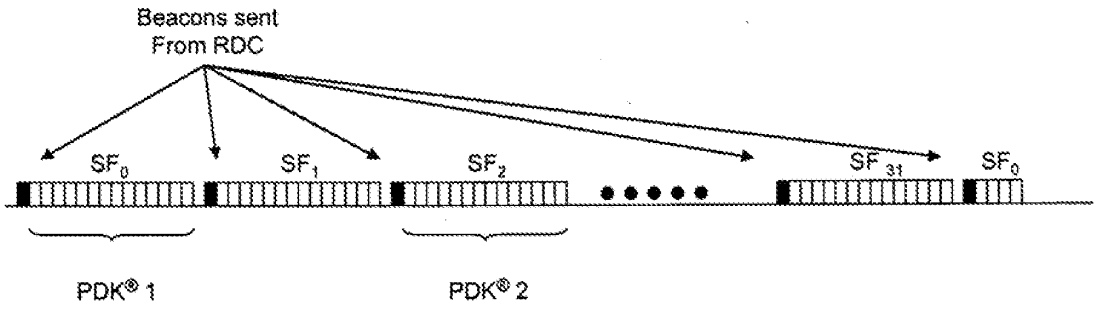


FIGURE 29

INTEL-1002
U.S. Patent 9,265,043

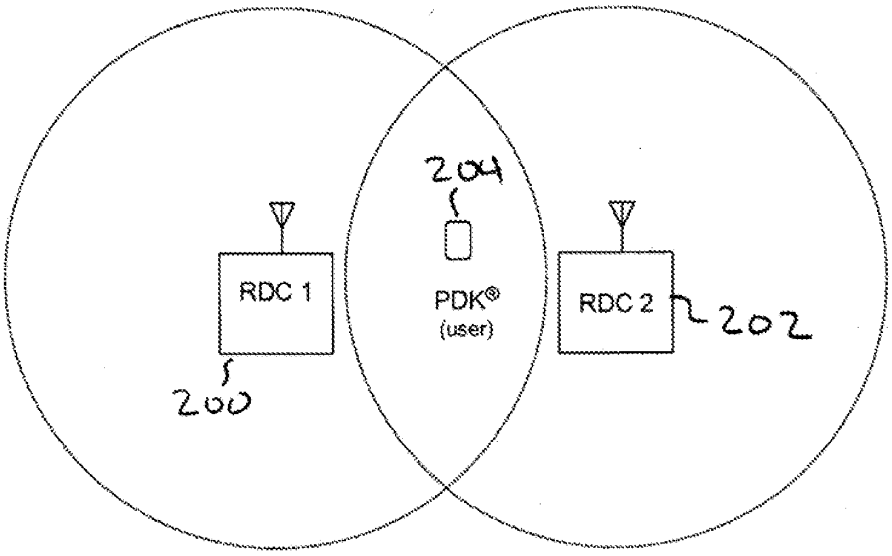


FIGURE 30

INTEL-1002
U.S. Patent 9,265,043

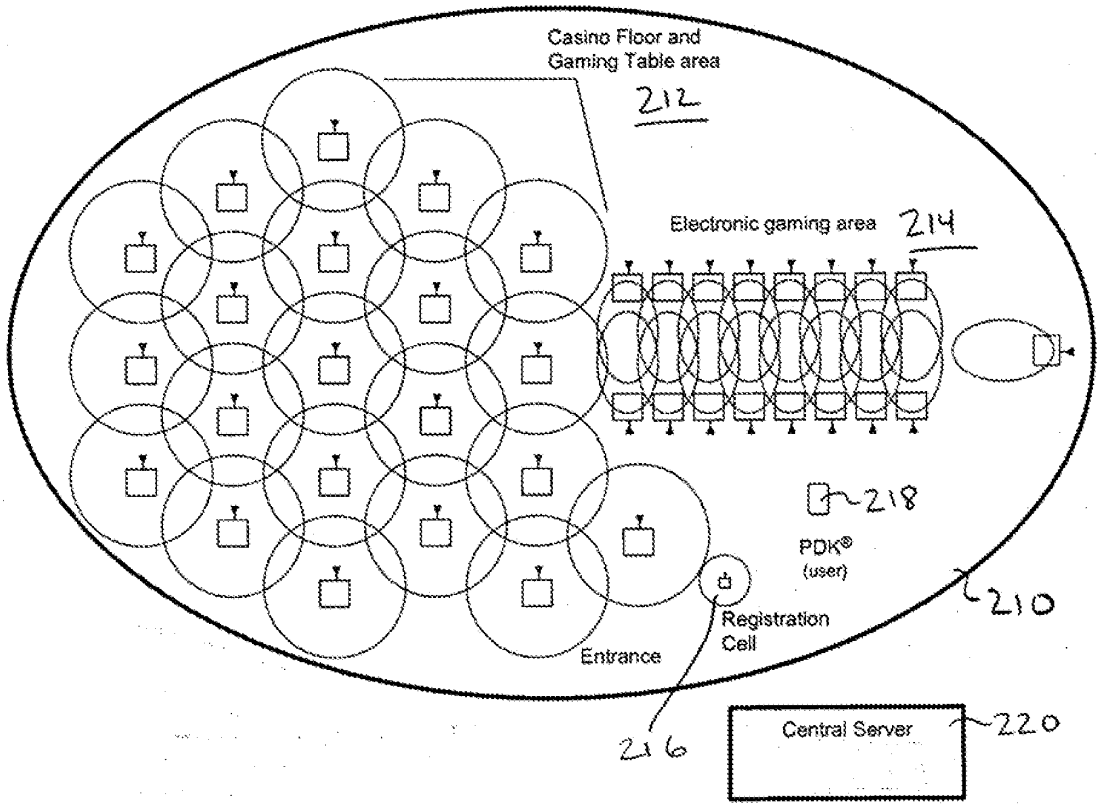


FIGURE 31

INTEL-1002
U.S. Patent 9,265,043

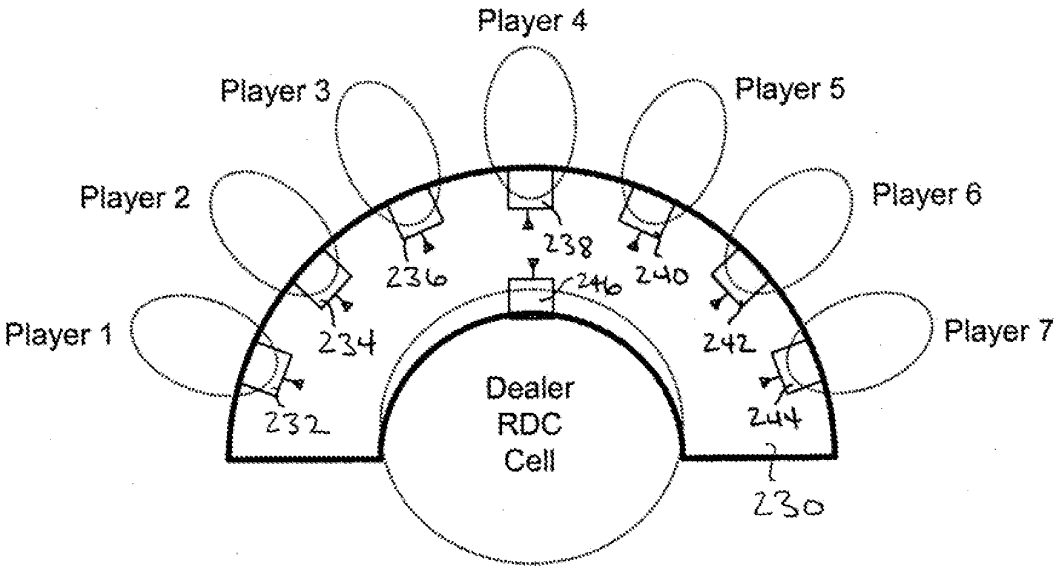


FIGURE 32

INTEL-1002
U.S. Patent 9,265,043

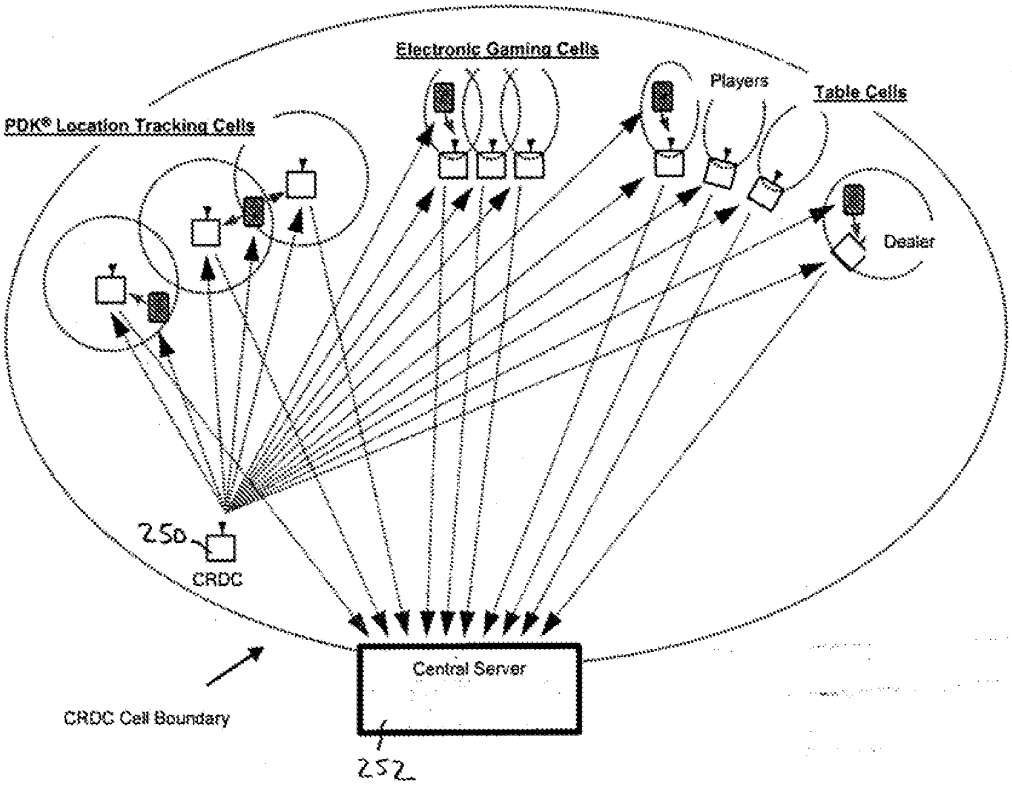


FIGURE 33

INTEL-1002
U.S. Patent 9,265,043

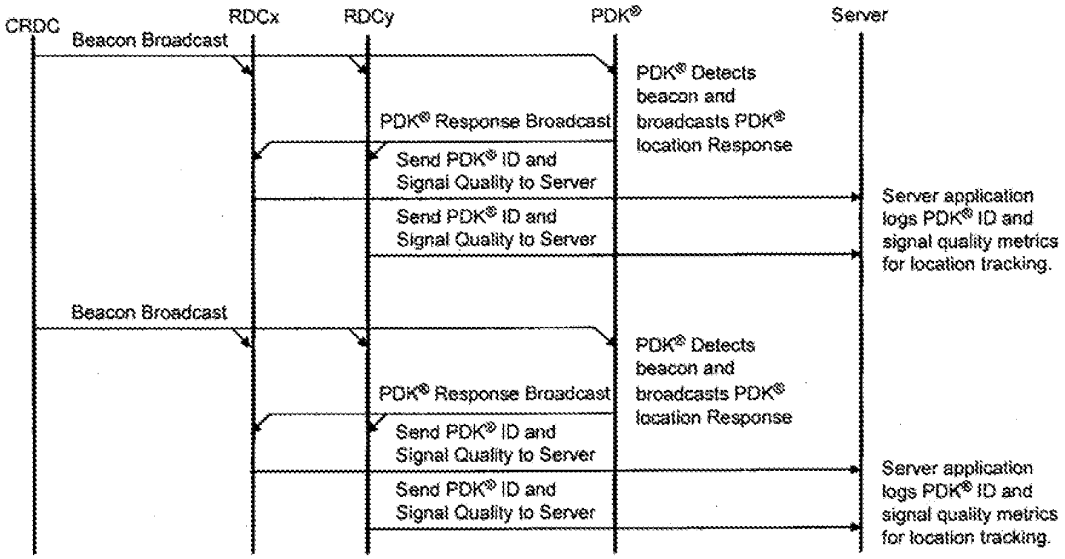

CRDC
RDCx
RDCy
PDK®
Server
Beacon Broadcast
PDK® Detects beacon and broadcasts PDK® location Response
PDK® Response Broadcast
Send PDK® ID and Signal Quality to Server
Send PDK® ID and Signal Quality to Server
Server application logs PDK® ID and signal quality metrics for location tracking.
Beacon Broadcast
PDK® Detects beacon and broadcasts PDK® location Response
PDK® Response Broadcast
Send PDK® ID and Signal Quality to Server
Send PDK® ID and Signal Quality to Server
Server application logs PDK® ID and signal quality metrics for location tracking.

FIGURE 34

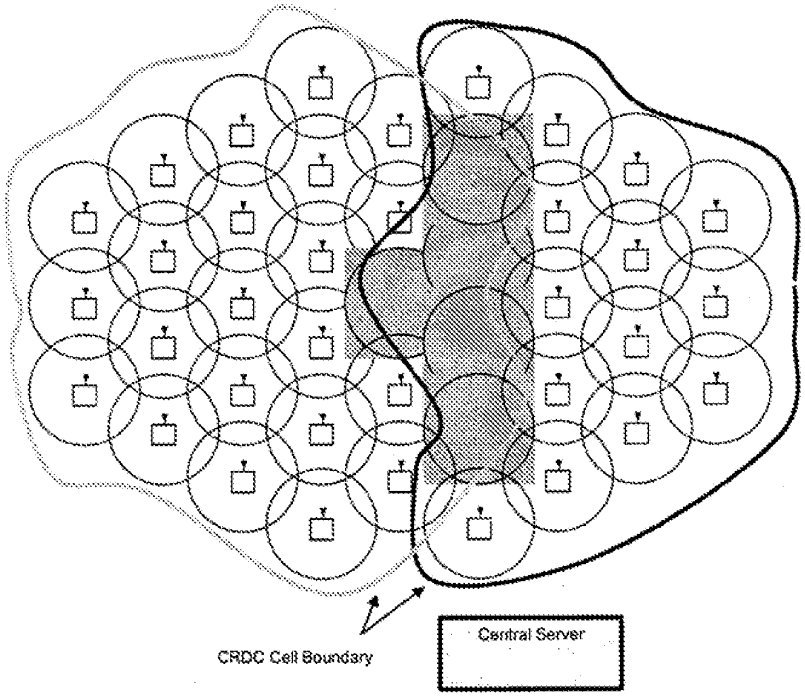


FIGURE 35

INTEL-1002
U.S. Patent 9,265,043

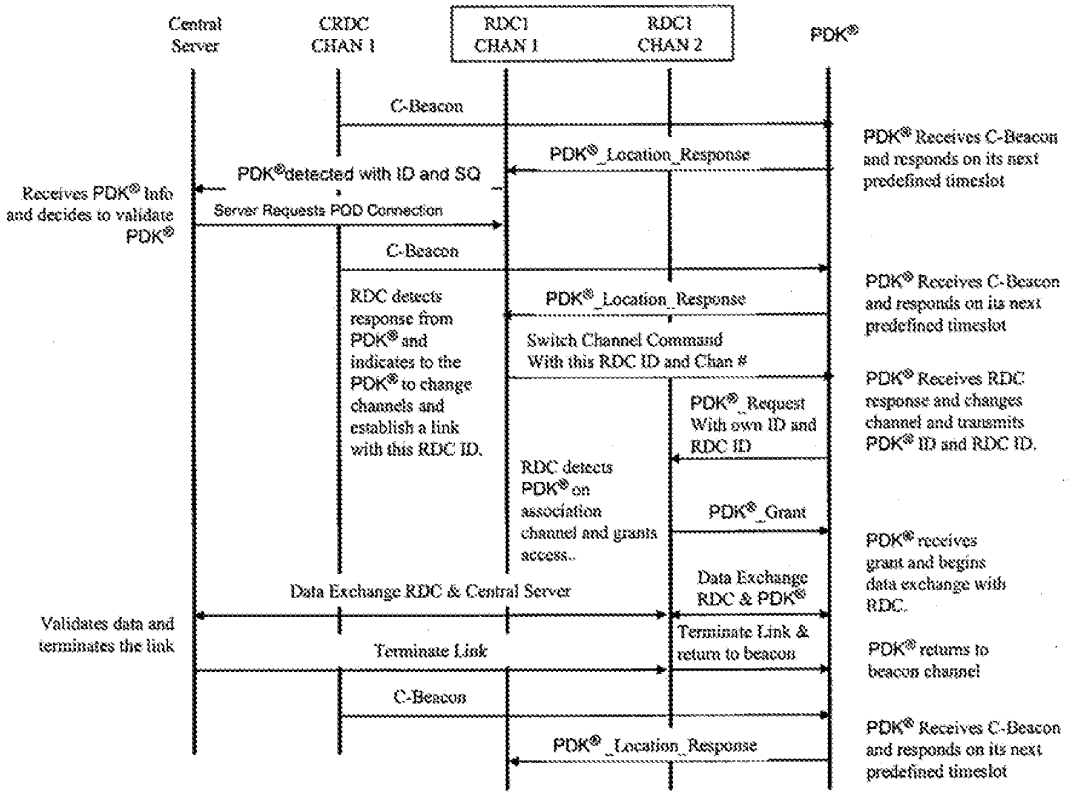

Central Server
CRDC CHAN 1
RDC1 CHAN 1
RDC1 CHAN 2
PDK®
C-Beacon
PDK® Receives C-Beacon and responds on its next predefined timeslot
PDK®_Location_Response
PDK®detected with ID and SQ
Receives PDK® info and decides to validate PDK®
Server Requests PDD Connection
C-Beacon
PDK® Receives C-Beacon and responds on its next predefined timeslot
RDC detects response from PDK® and indicates to the PDK® to change channels and establish a link with this RDC ID.
PDK®_Location_Response
Switch Channel Command With this RDC ID and Chan #
PDK® Receives RDC response and changes channel and transmits PDK® ID and RDC ID.
PDK®_Request With own ID and RDC ID
RDC detects PDK® on association channel and grants access..
PDK®_Grant
PDK® receives grant and begins data exchange with RDC.
Data Exchange RDC & PDK®
Data Exchange RDC & Central Server
Validates data and terminates the link
Terminate Link & return to beacon
Terminate Link
PDK® returns to beacon channel
C-Beacon
PDK® Receives C-Beacon and responds on its next predefined timeslot
PDK®_Location_Response

FIGURE 36

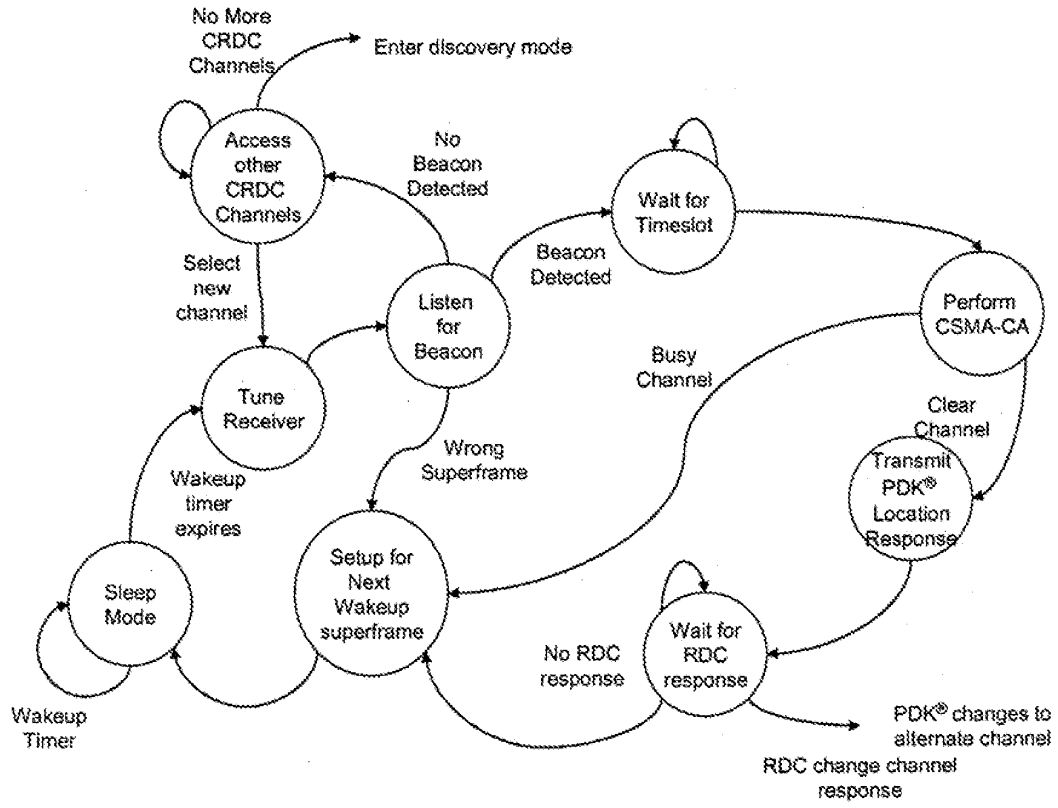


FIGURE 37

INTEL-1002
U.S. Patent 9,265,043

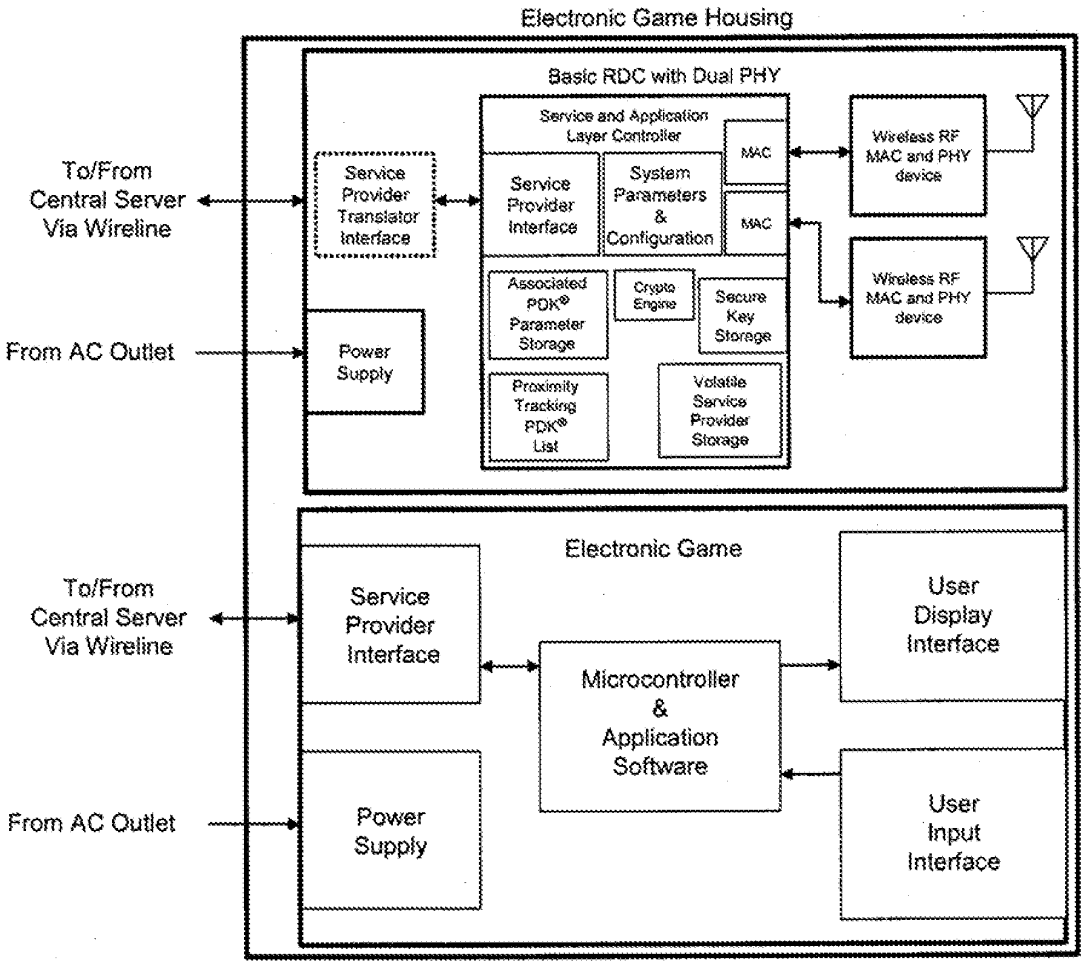

Electronic Game Housing
Basic RDC with Dual PHY
Service and Application Layer Controller
MAC
MAC
Wireless RF MAC and PHY device
Wireless RF MAC and PHY device
To/From Central Server Via Wireline
Service Provider Translator Interface
Service Provider Interface
System Parameters & Configuration
Associated PDK® Parameter Storage
Crypto Engine
Secure Key Storage
From AC Outlet
Power Supply
Proximity Tracking PDK® List
Volatile Service Provider Storage
Electronic Game
To/From Central Server Via Wireline
Service Provider Interface
Microcontroller & Application Software
User Display Interface
From AC Outlet
Power Supply
User Input Interface

FIGURE 38

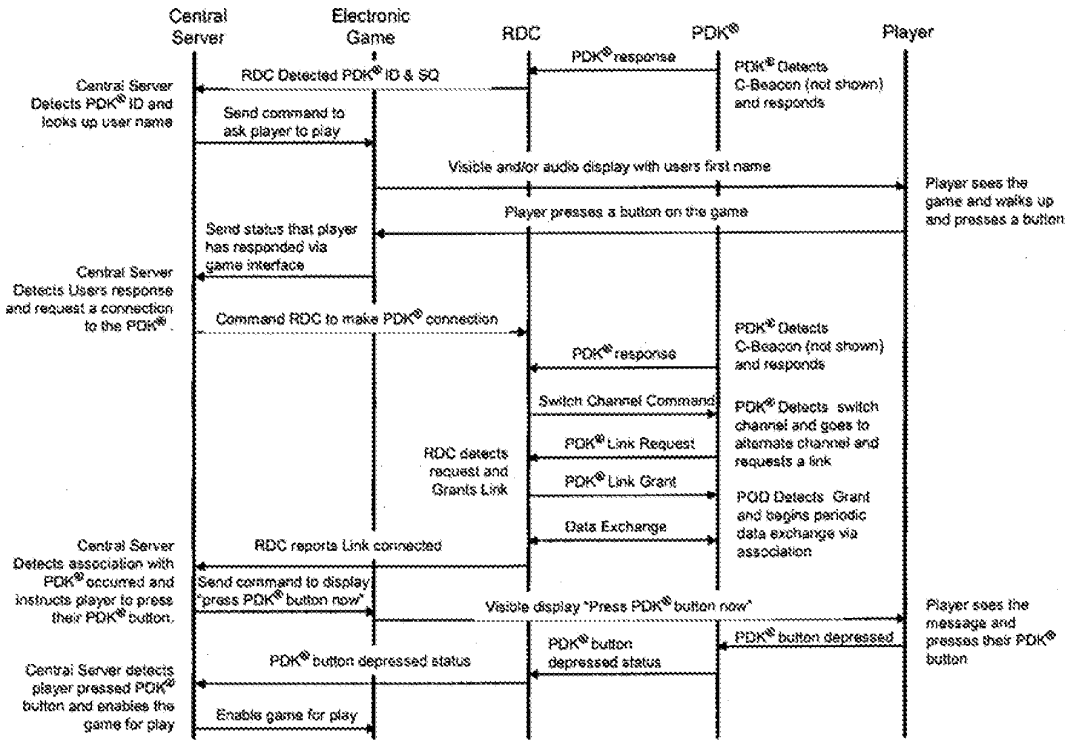

Central Server
Electronic Game
RDC
PDK®
Player
PDK® response
PDK® Detects C-Beacon (not shown) and responds
RDC Detected PDK® ID & SQ
Central Server Detects PDK® ID and looks up user name
Send command to ask player to play
Visible and/or audio display with users first name
Player sees the game and walks up and presses a button
Player presses a button on the game
Send status that player has responded via game interface
Central Server Detects Users response and request a connection to the PDK®.
Command RDC to make PDK® connection
PDK® response
PDK® Detects C-Beacon (not shown) and responds
Switch Channel Command
PDK® Detects switch channel and goes to alternate channel and requests a link
PDK® Link Request
RDC detects request and Grants Link
PDK® Link Grant
POD Detects Grant and begins periodic data exchange via association
Data Exchange
Central Server Detects association with PDK® occurred and instructs player to press their PDK® button.
RDC reports Link connected
Send command to display "press PDK® button now"
Visible display "Press PDK® button now"
Player sees the message and presses their PDK® button
PDK® button depressed
PDK® button depressed status
PDK® button depressed status
Central Server detects player pressed PDK® button and enables the game for play
Enable game for play

FIGURE 39

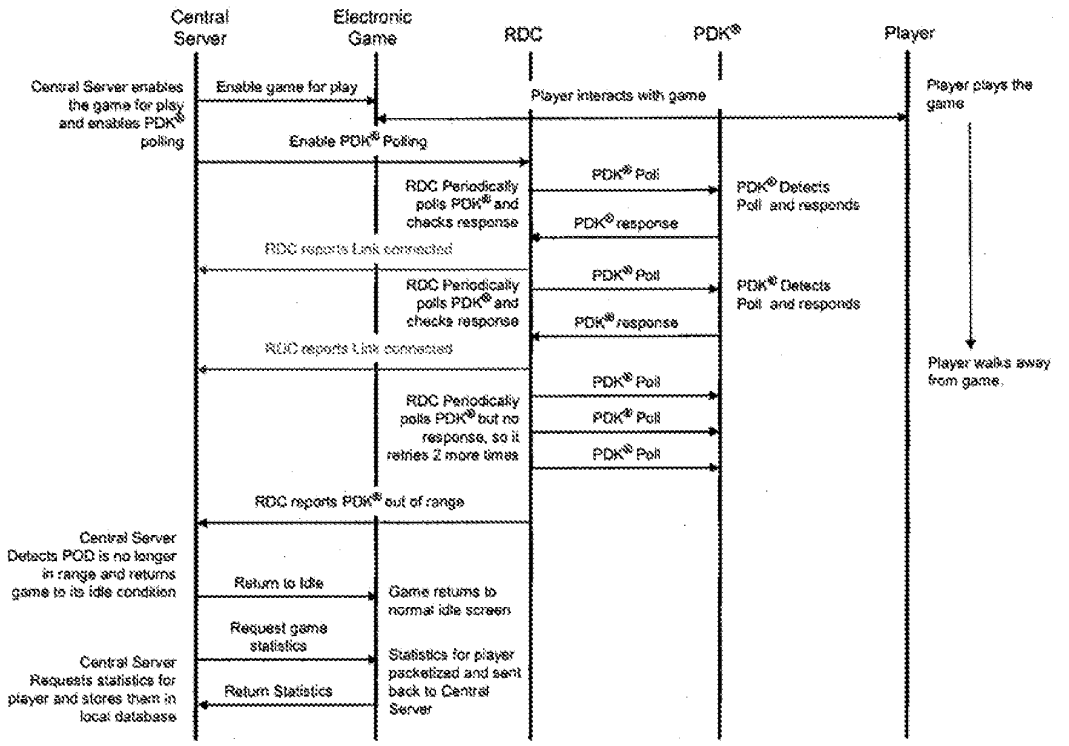

Central Server
Electronic Game
RDC
PDK®
Player
Central Server enables the game for play and enables PDK® polling
Enable game for play
Player interacts with game
Player plays the game
Enable PDK® Polling
PDK® Poll
PDK® Detects Poll and responds
RDC Periodically polls PDK® and checks response
PDK® response
RDC reports Link connected
PDK® Poll
PDK® Detects Poll and responds
RDC Periodically polls PDK® and checks response
PDK® response
RDC reports Link connected
Player walks away from game.
PDK® Poll
RDC Periodically polls PDK® but no response, so it retries 2 more times
PDK® Poll
PDK® Poll
RDC reports PDK® out of range
Central Server Detects POD is no longer in range and returns game to its idle condition
Return to Idle
Game returns to normal idle screen
Request game statistics
Central Server Requests statistics for player and stores them in local database
Statistics for player packetized and sent back to Central Server
Return Statistics

FIGURE 40

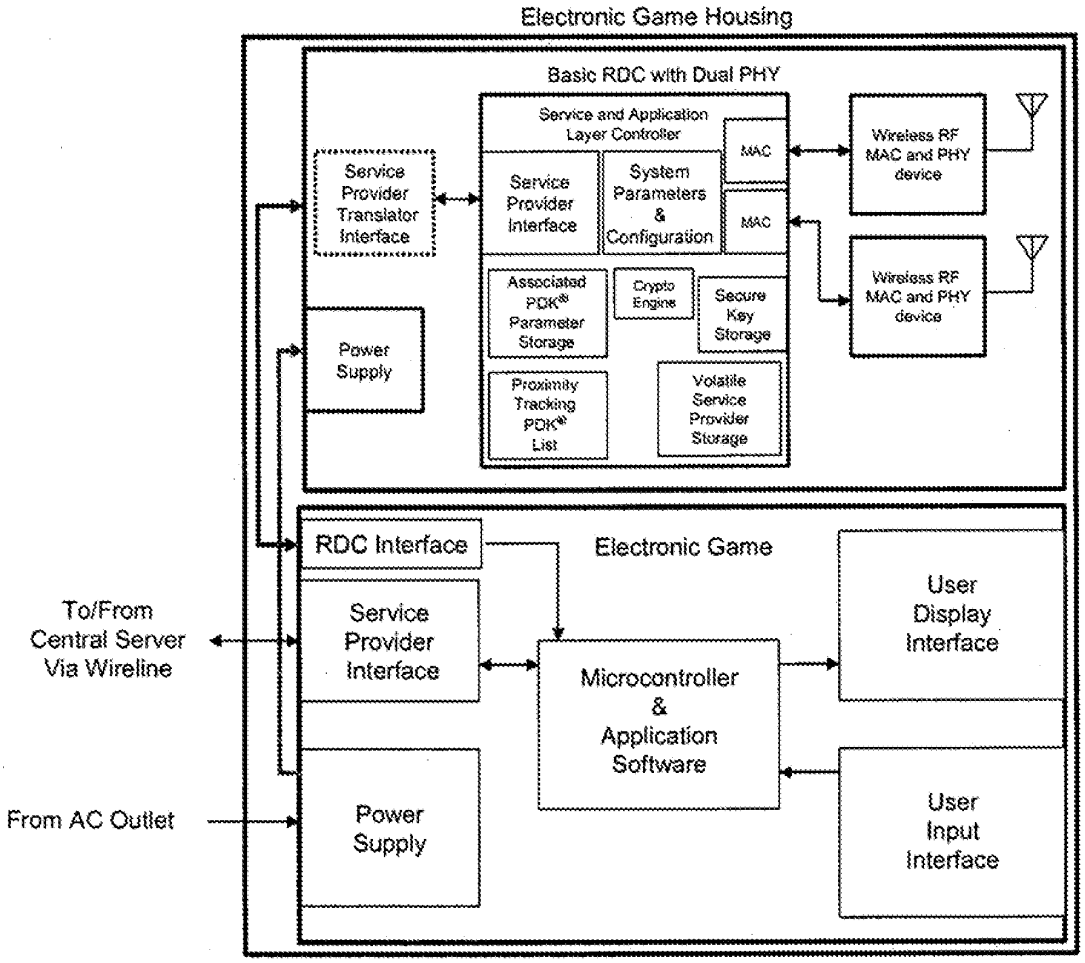

Electronic Game Housing
Basic RDC with Dual PHY
Service and Application Layer Controller
Service Provider Translator Interface
Service Provider Interface
System Parameters & Configuration
MAC
MAC
Wireless RF MAC and PHY device
Wireless RF MAC and PHY device
Associated PDK® Parameter Storage
Crypto Engine
Secure Key Storage
Proximity Tracking PDK® List
Volatile Service Provider Storage
Power Supply
RDC Interface
Electronic Game
To/From Central Server Via Wireline
Service Provider Interface
Microcontroller & Application Software
User Display Interface
From AC Outlet
Power Supply
User Input Interface

FIGURE 41

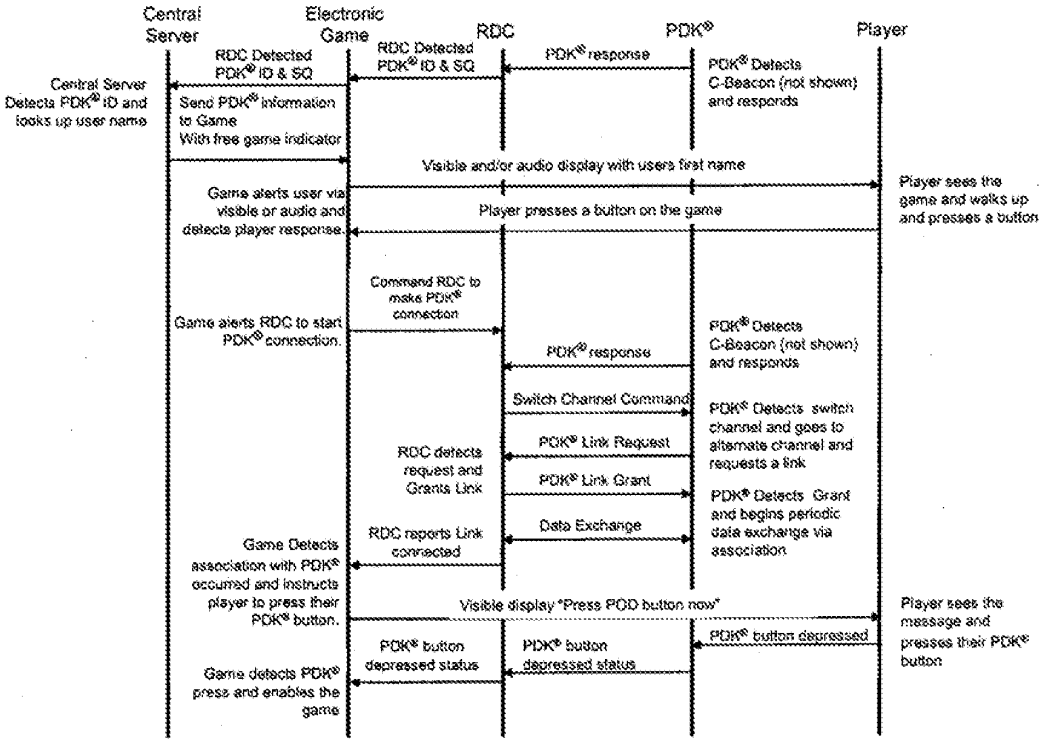

Central Server
Electronic Game
RDC
PDK®
Player
RDC Detected PDK® ID & SQ
RDC Detected PDK® ID & SQ
PDK® response
PDK® Detects C-Beacon (not shown) and responds
Central Server Detects PDK® ID and looks up user name
Send PDK® information to Game With free game indicator
Visible and/or audio display with users first name
Player sees the game and walks up and presses a button
Game alerts user via visible or audio and detects player response.
Player presses a button on the game
Command RDC to make PDK® connection
Game alerts RDC to start PDK® connection.
PDK® response
PDK® Detects C-Beacon (not shown) and responds
Switch Channel Command
PDK® Detects switch channel and goes to alternate channel and requests a link
PDK® Link Request
RDC detects request and Grants Link
PDK® Link Grant
PDK® Detects Grant and begins periodic data exchange via association
Data Exchange
RDC reports Link connected
Game Detects association with PDK® occurred and instructs player to press their PDK® button.
Visible display "Press POD button now"
Player sees the message and presses their PDK® button
PDK® button depressed
PDK® button depressed status
PDK® button depressed status
Game detects PDK® press and enables the game

FIGURE 42

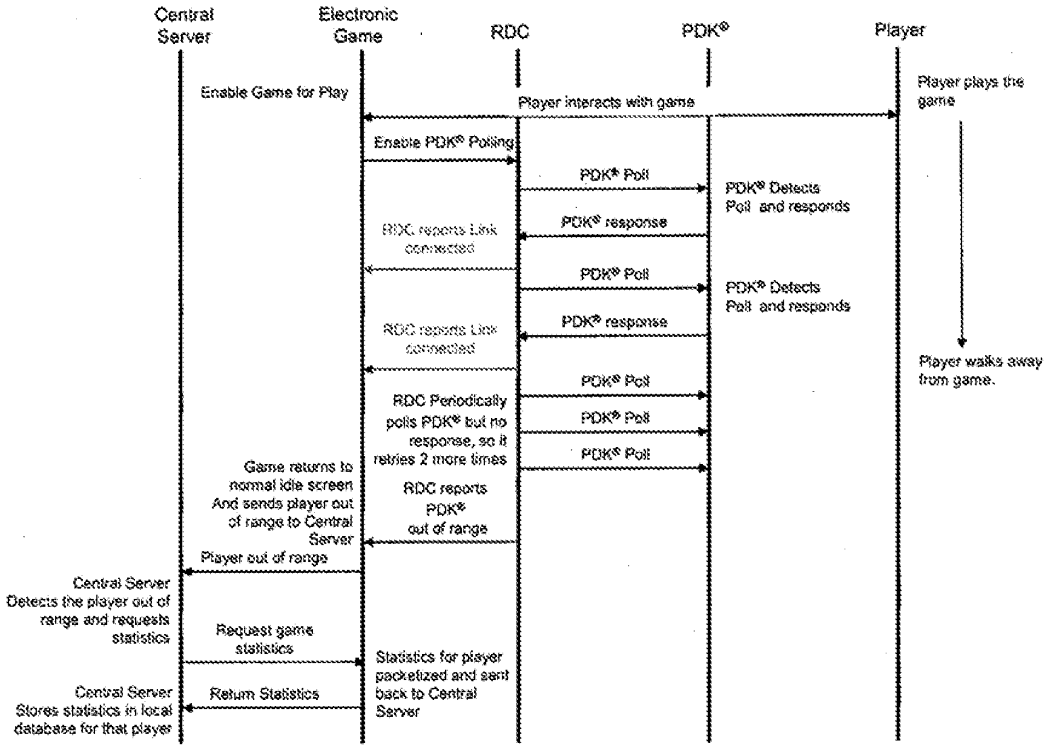

Central Server
Electronic Game
RDC
PDK®
Player
Enable Game for Play
Player interacts with game
Player plays the game
Enable PDK® Polling
PDK® Poll
PDK® Detects Poll and responds
PDK® response
RDC reports Link connected
PDK® Poll
PDK® Detects Poll and responds
PDK® response
RDC reports Link connected
Player walks away from game.
PDK® Poll
RDC Periodically polls PDK® but no response, so it retries 2 more times
PDK® Poll
PDK® Poll
Game returns to normal idle screen And sends player out of range to Central Server
RDC reports PDK® out of range
Player out of range
Central Server Detects the player out of range and requests statistics
Request game statistics
Statistics for player packetized and sent back to Central Server
Central Server Stores statistics in local database for that player
Return Statistics

FIGURE 43

Electronic Patent Application Fee Transmittal	
Application Number:	
Filing Date:	
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Filer:	Matthew M. Holmes/JoLin Johnson
Attorney Docket Number:	10001-03836 US
Filed as Small Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**730**

Electronic Acknowledgement Receipt

EFS ID:	15677893
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	02-MAY-2013
Filing Date:	
Time Stamp:	16:57:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$730
RAM confirmation Number	3882
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

INTEL-1002
U.S. Patent 9,265,043

1	Application Data Sheet	03836US_ADS.pdf	1503789 8cdda2135635455f841aeb9c1539703e6e5e99e7	no	7
Warnings:					
Information:					
2		03836US_Specification.pdf	300525 3cc6cb68120aaa6360944cbd6294def66868479b	yes	78
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	72	
	Claims		73	77	
	Abstract		78	78	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	03836US_Drawings.pdf	6209710 9c363231246f2286a99a7b39c151634a5e7c974	no	42
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32640 6233711838076989f6b28ac4d2ce7c0311a11917	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	8046664		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

SCORE Placeholder Sheet for IFW Content

Application Number: 13875895 Document Date: 05/02/2013

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

- Drawings – Other than Black and White Line Drawings

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

To access the documents in the SCORE database, refer to instructions developed by SIRA.

At the time of document entry (noted above):

- Examiners may access SCORE content via the eDAN interface.
- Other USPTO employees can bookmark the current SCORE URL (http://es/ScoreAccessWeb/).
- External customers may access SCORE content via the Public and Private PAIR interfaces.

Form Revision Date: February 8, 2006

INTEL-1002
U.S. Patent 9,265,043

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/875,895

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

INTEL-1002
U.S. Patent 9,265,043

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/875,895	05/02/2013	David L. Brown	10001-03836 US

CONFIRMATION NO. 8260

89194
Patent Law Works/Proxense
165 South Main St
Suite 2
Salt Lake City, UT 84111

FORMALITIES LETTER

OC000000061670416

Date Mailed: 06/10/2013

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - Numbers, letters, and reference characters on the drawings must measure at least 0.32 cm (1/8 inch) in height. See Figure(s) 2-4, 8-9, 21, 36, 38-43.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A surcharge (for late submission of the basic filing fee, search fee, examination fee or inventor's oath or declaration) as set forth in 37 CFR 1.16(f) of $ **70** for a small entity in compliance with 37 CFR 1.27, must be submitted.

SUMMARY OF FEES DUE:

Total fee(s) required within **TWO MONTHS** from the date of this Notice is $ **70** for a small entity
- $ **70** Surcharge.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):

All

Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/aabranyos/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

INTEL-1002
U.S. Patent 9,265,043

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/875,895	05/02/2013	2827	730	10001-03836 US	20	2

CONFIRMATION NO. 8260

89194
Patent Law Works/Proxense
165 South Main St
Suite 2
Salt Lake City, UT 84111

FILING RECEIPT

OC000000061670415

Date Mailed: 06/10/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)
David L. Brown, Jupiter, FL;
Fred S. Hirt, Brookfield, IL;

Applicant(s)
Proxense, LLC, Bend, OR

Assignment For Published Patent Application
Proxense, LLC, Bend, OR

Power of Attorney: None

Domestic Priority data as claimed by applicant
This application is a CON of 13/491,417 06/07/2012 PAT 8457672
which is a CON of 11/620,577 01/05/2007 PAT 8219129
which claims benefit of 60/760,362 01/06/2006

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 06/03/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/875,895**
Projected Publication Date: To Be Determined - pending completion of Corrected Papers
Non-Publication Request: No
Early Publication Request: No

** SMALL ENTITY **

Title

Dynamic Real-Time Tiered Client Access

Preliminary Class

365

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANTS:	David L. Brown et al.
APPLICATION NO:	13/875,895
FILING DATE:	May 2, 2013
TITLE:	Dynamic Real-Time Tiered Client Access
EXAMINER:	Not Yet Known
GROUP ART UNIT:	2827
ATTY. DKT. NO:	10001-03836 US
CONFIRMATION NO:	8260

CERTIFICATE OF EFS-WEB TRANSMISSION

Pursuant to 240 OG 45 and the Legal Framework For EFS-Web, I hereby certify that this follow-on correspondence is being officially submitted through the USPTO EFS-Web system from the Pacific Time Zone of the United States on the local date shown below:

Dated: August 12, 2013 By: /Kanda Ishihara/

Kanda V. Ishihara, Reg. No. 56,607

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Sir/Madam:

Responsive to the Notice to File Corrected Application Papers dated June 10, 2013, received in the above-identified application,

☒ Enclosed are:

☒ Replacement Drawings;

☒ two (2) Substitute Statement in Lieu of an Oath or Declaration;

☒ payment in the amount of $70.00 for the

☐ application filing fee;

(continued)

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

☐ fee for additional claims; and

☒ missing parts surcharge.

☐ Other: Application search fee

☒ Applicant claims small entity status under 37 C.F.R. § 1.27.

Respectfully submitted,
DAVID L. BROWN ET AL.

Dated: August 12, 2013 By: /Kanda Ishihara/

Kanda V. Ishihara, Reg. No. 56,607
Attorney for Applicants
PATENT LAW WORKS LLP
201 South Main Street, Suite 250
Salt Lake City, UT 84111
Tel.: (801) 258-9835
Fax: (801) 355-0160
Email: patents@patentlawworks.net

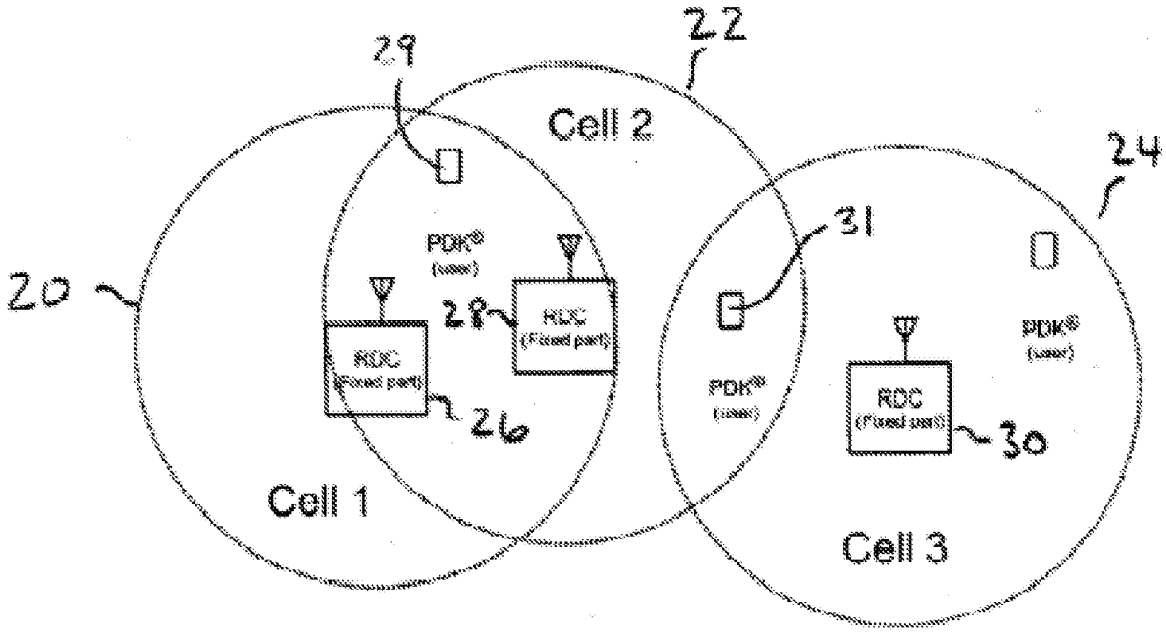

22
29
Cell 2
24
31
20
PDK®
(user)
28
RLC
(Fixed part)
RDC
(Fixed part)
26
PDK®
(user)
PDK®
(user)
RDC
(Fixed part)
30
Cell 1
Cell 3

FIGURE 2

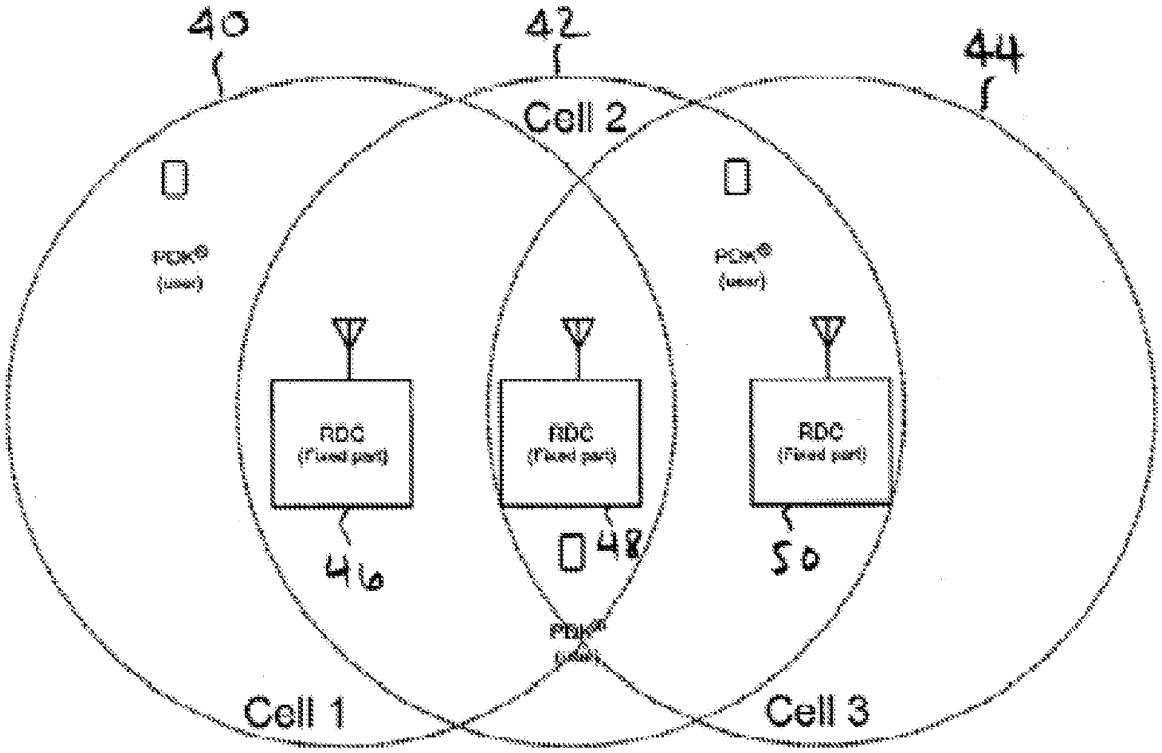


FIGURE 3

INTEL-1002
U.S. Patent 9,265,043

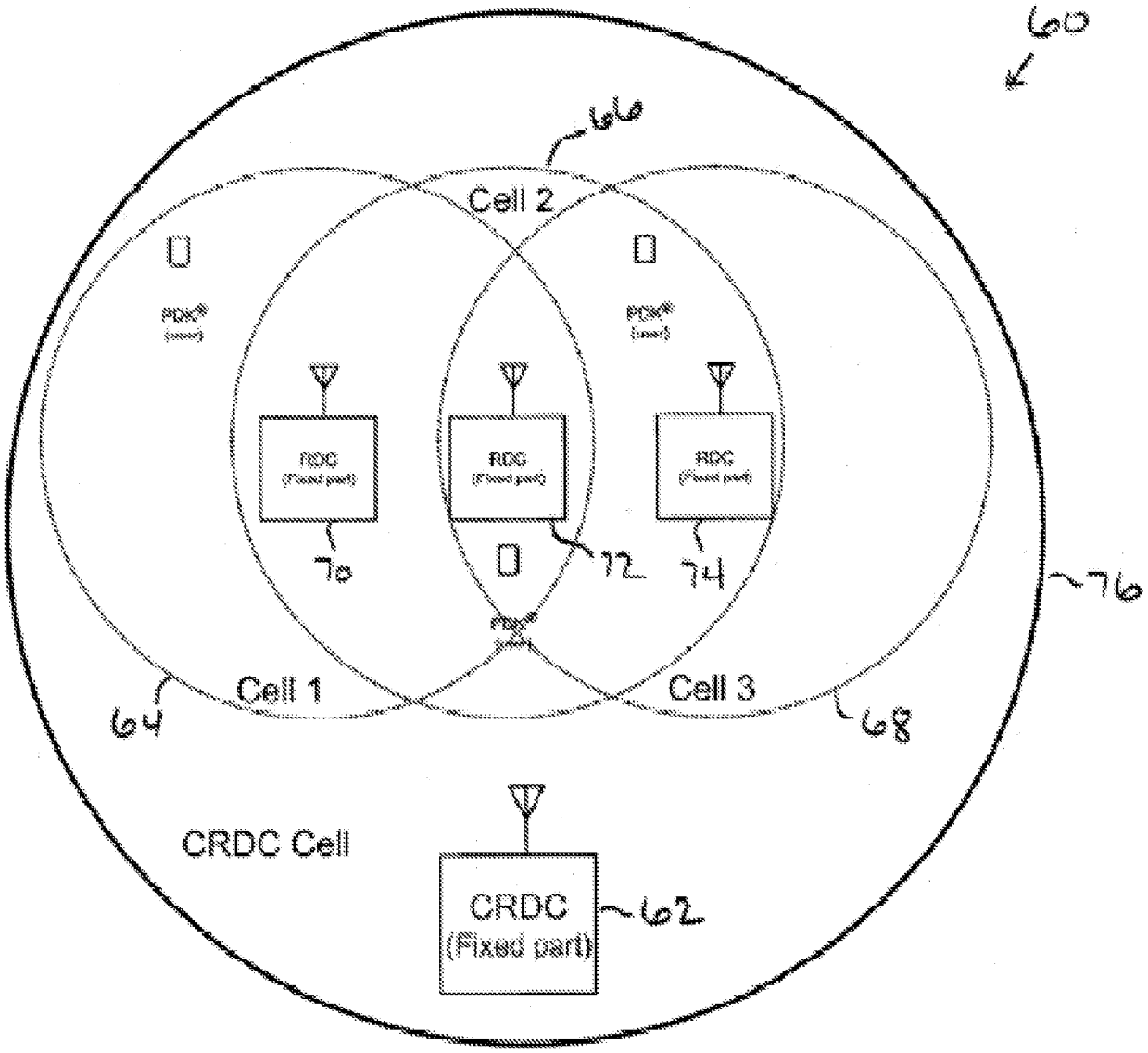


FIGURE 4

INTEL-1002
U.S. Patent 9,265,043

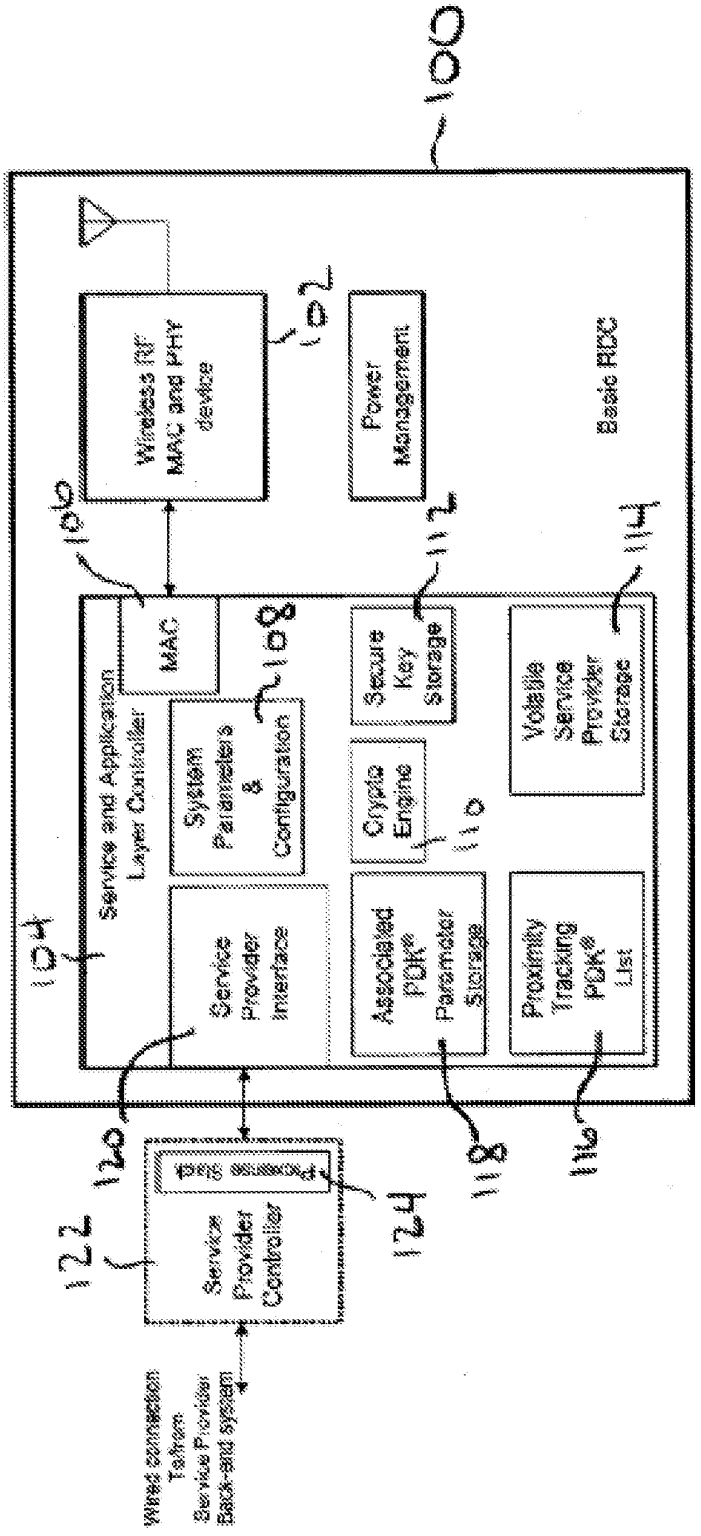

100
Wireless RF MAC and PHY device
102
Power Management
Basic RDC
106
MAC
108
System Parameters & Configuration
Service and Application Layer Controller
104
Service Provider Interface
Secure Key Storage
112
Crypto Engine
110
Associated PDK® Parameter Storage
Volatile Service Provider Storage
114
Proximity Tracking PDK® List
120
118
116
122
Service Provider Controller
124
Wired connection To/from Service Provider Back-end system

FIGURE 8

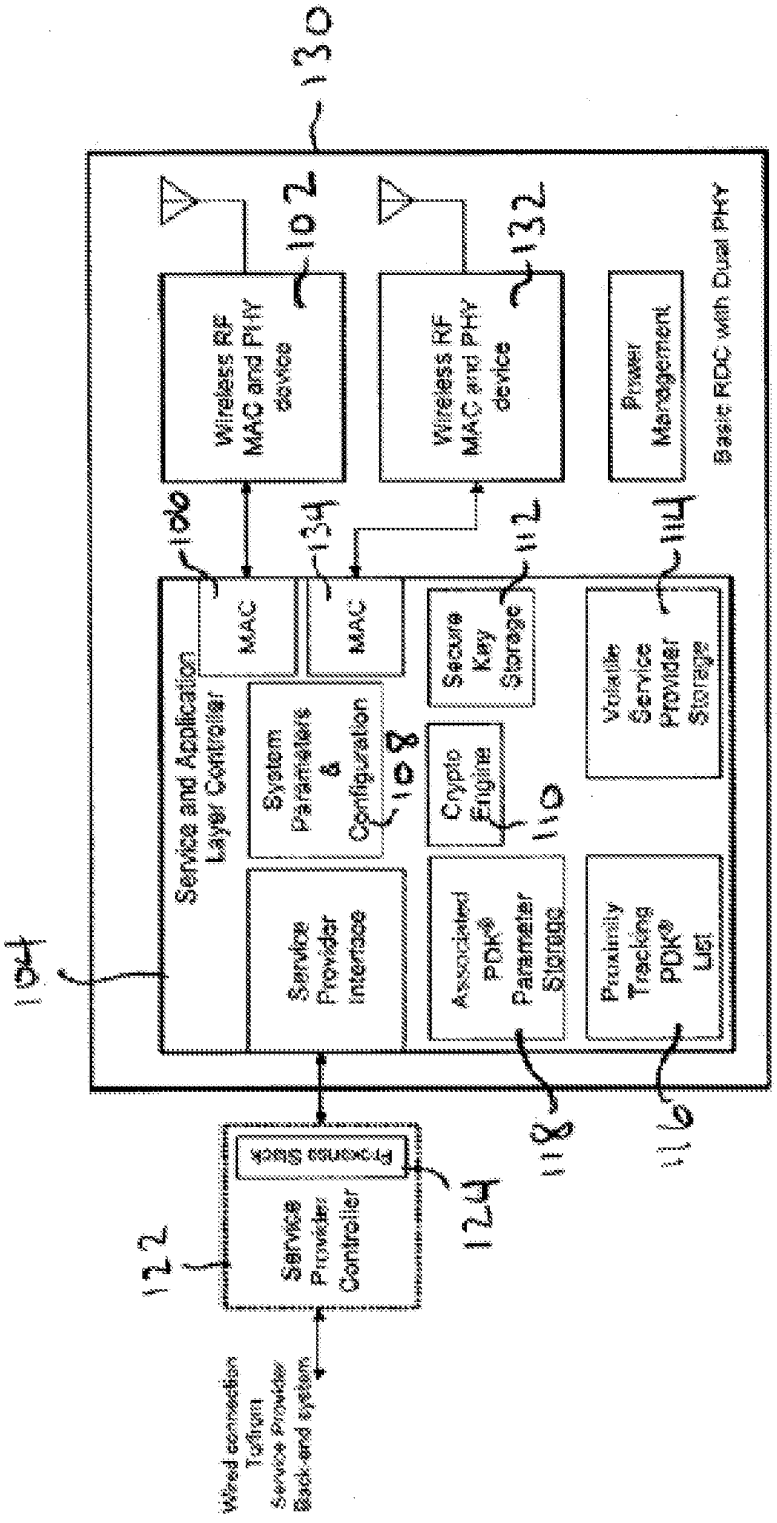

130
102
132
Wireless RF MAC and PHY device
Wireless RF MAC and PHY device
Power Management
Basic PDC with Dual PHY
100
134
112
114
MAC
MAC
Secure Key Storage
Volatile Service Provider Storage
Service and Application Layer Controller
System Parameters & Configuration
108
Crypto Engine
110
104
Service Provider Interface
Associated PDK® Parameter Storage
Proximity Tracking PDK® List
118
116
122
Service Provider Controller
124
Wired connection to/from Service Provider Back-end system

FIGURE 9

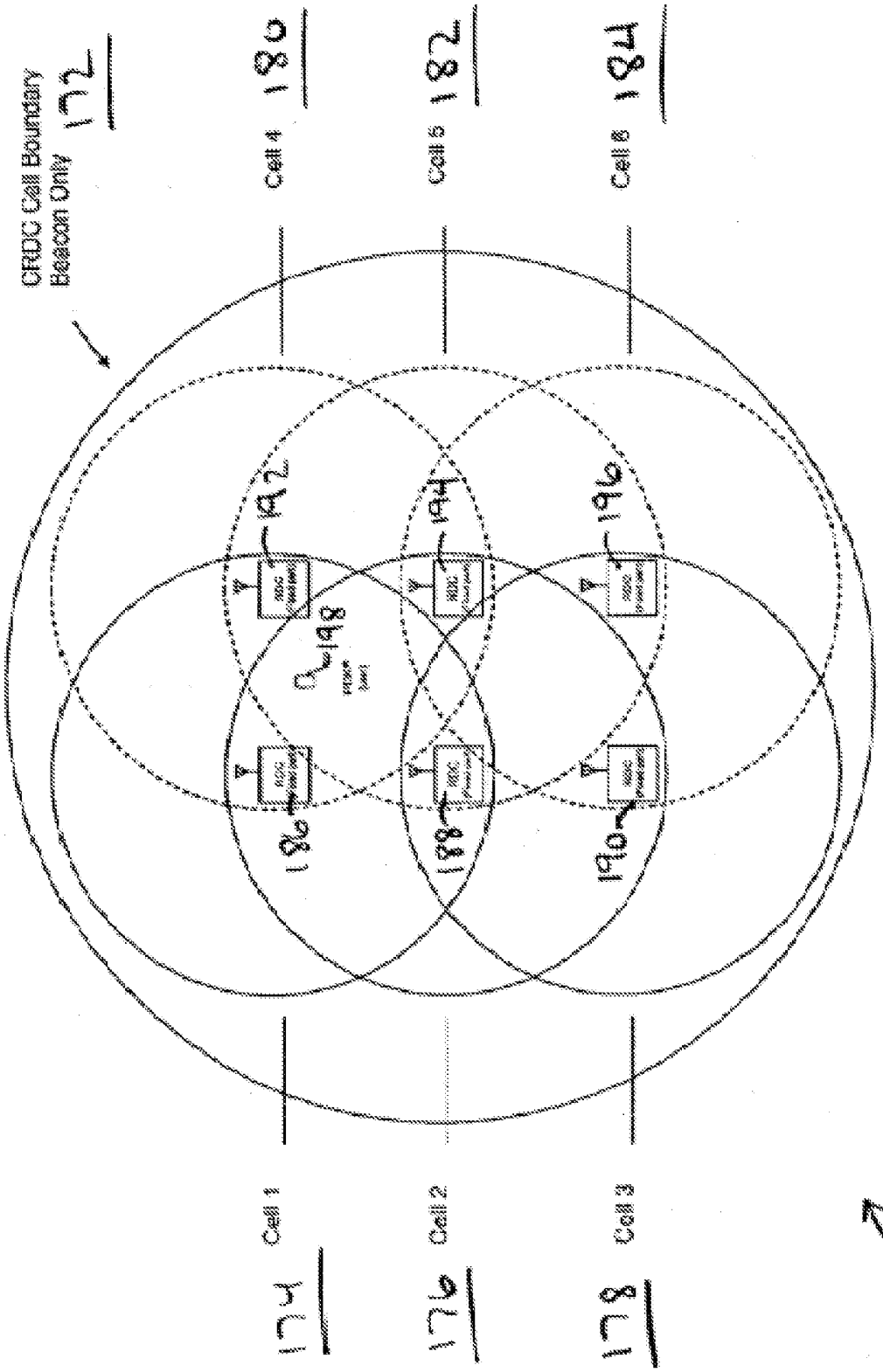

CRDC Call Boundary
Beacon Only
172
Cell 4
180
Cell 5
182
Cell 6
184
192
194
196
198
Beacon
186
188
190
Cell 1
174
Cell 2
176
Cell 3
178
170

FIGURE 21

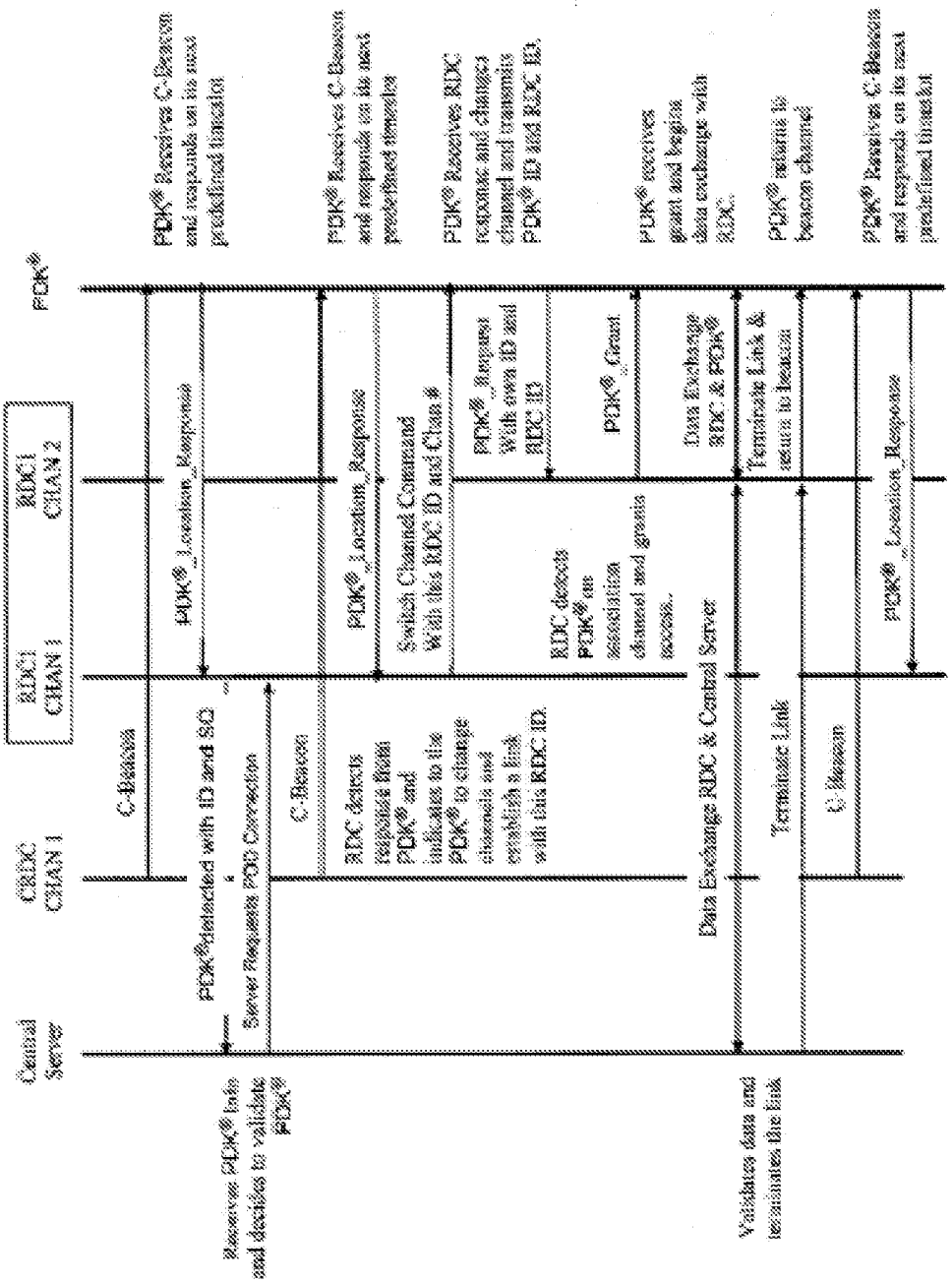

Central Server
CBDC CHAN 1
RDC1 CHAN 1
RDC1 CHAN 2
PDK®
C-Beacon
PDK® detected with ID and SQ
Server Requests PDK Connection
C-Beacon
RDC detects response from PDK® and indicates to the PDK® to change channels and establish a link with this RDC ID.
PDK®_Location_Response
Switch Channel Command With this RDC ID and Chan #
PDK®_Request With own ID and RDC ID
RDC directs PDK® on association channel and grants access.
PDK®_Grant
Data Exchange RDC & Control Server
Terminate Link
Q-Beacon
PDK®_Location_Response
Data Exchange RDC & PDK®
Terminate Link & return to beacon
Receives PDK® info and decides to validate PDK®
Validates data and terminates the link
PDK® Receives C-Beacon and responds on its next predefined timeslot
PDK® Receives C Beacon and responds on its next predefined timeslot
PDK® Receives RDC response and changes channel and transmits PDK® ID and RDC ID.
PDK® returns to beacon channel
P2PK® Receives C Beacon and responds on its next predefined timeslot

FIGURE 36

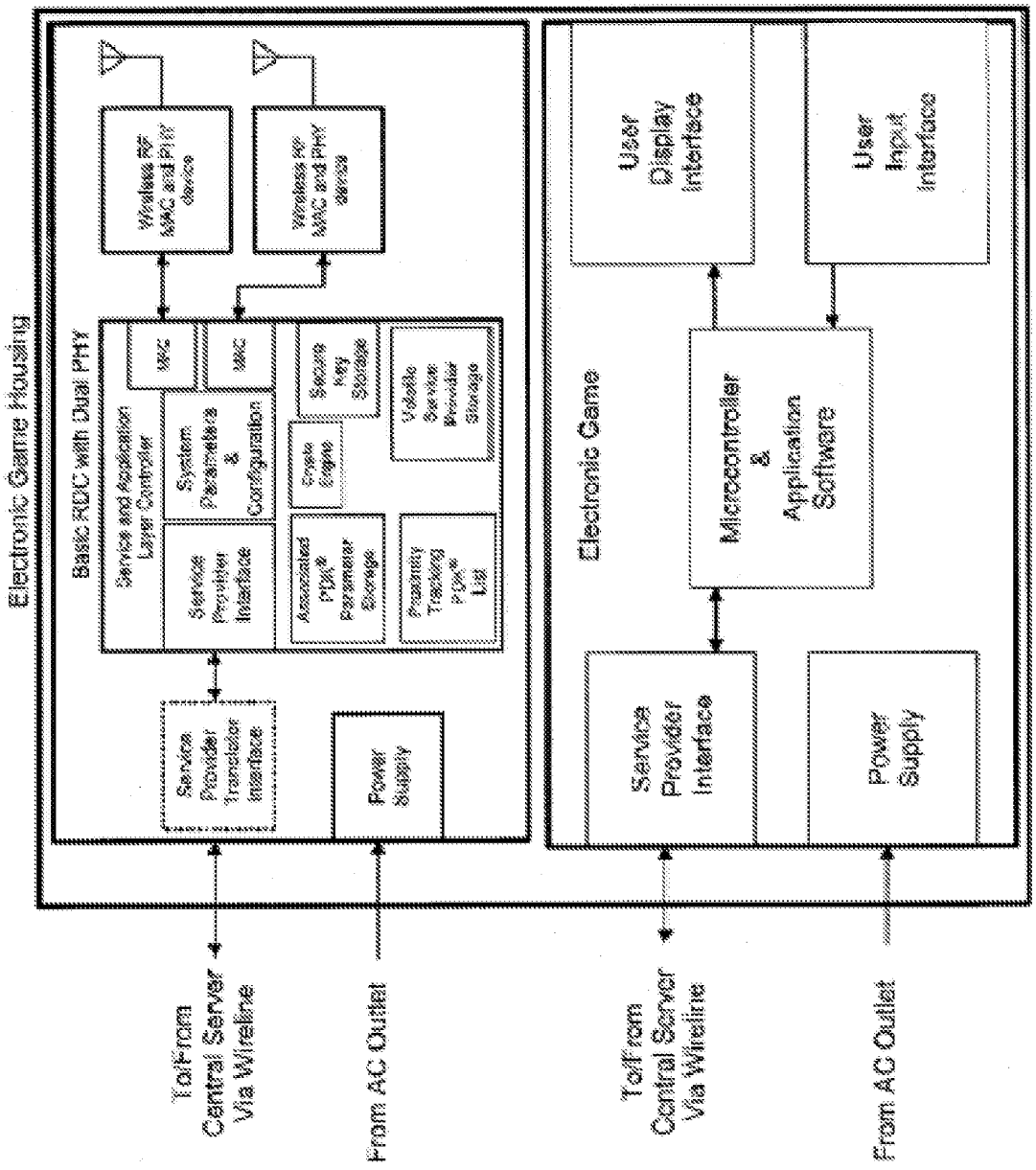

Electronic Game Housing
Basic RDC with Dual PHY
Service and Application Layer Controller
Service Provider Interface
System Parameters & Configuration
Associated PPA® Parameter Storage
Proximity Tracking PPA® List
Crypto Engine
Secure Key Storage
Volatile Service Provider Storage
MAC
MAC
Wireless RF MAC and PHY device
Wireless RF MAC and PHY device
Service Provider Translator Interface
Power Supply
Electronic Game
User Display Interface
User Input Interface
Microcontroller & Application Software
Service Provider Interface
Power Supply
To/From Central Server Via Wireline
From AC Outlet
To/From Central Server Via Wireline
From AC Outlet

FIGURE 38

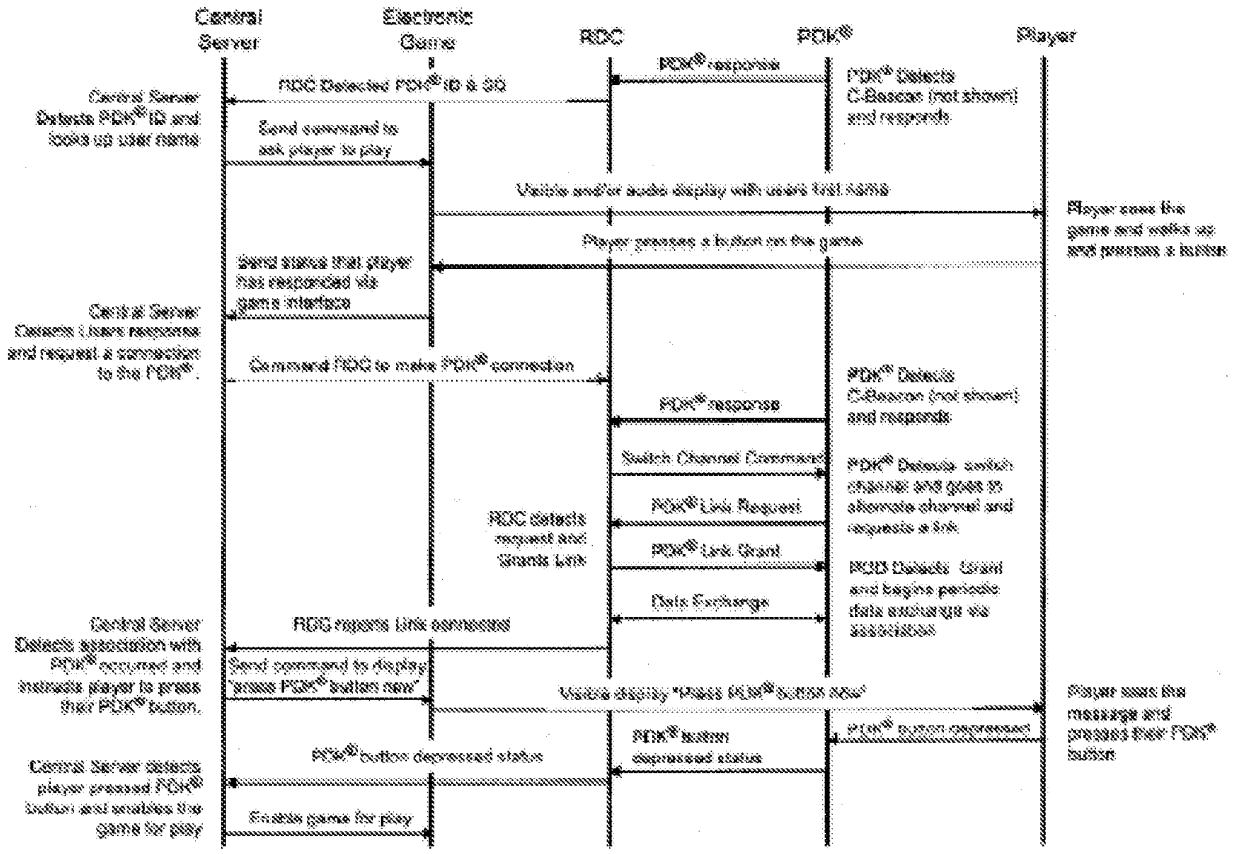

Central Server
Electronic Game
RDC
PDK®
Player
PDK® response
RDC Detected PDK® ID & SID
PDK® Detects C-Beacon (not shown) and responds
Central Server Detects PDK® ID and looks up user name
Send command to ask player to play
Visible and/or audio display with user's first name
Player sees the game and walks up and presses a button
Player presses a button on the game
Send status that player has responded via game interface
Central Server Detects player response and request a connection to the PDK®.
Command RDC to make PDK® connection
PDK® response
PDK® Detects C-Beacon (not shown) and responds
Switch Channel Command
PDK® Detects switch channel and goes to alternate channel and requests a link
PDK® Link Request
RDC detects request and Grants Link
PDK® Link Grant
RDC Detects Grant and begins periodic data exchange via association
Data Exchange
Central Server Detects association with PDK® equipment and instructs player to press their PDK® button.
RDC reports Link connected
Send command to display "press PDK® button now"
Visible display "Press PDK® button now"
Player sees the message and presses their PDK® button
PDK® button depressed
PDK® button depressed status
PDK® button depressed status
Central Server detects player pressed PDK® button and enables the game for play
Enable game for play

FIGURE 39

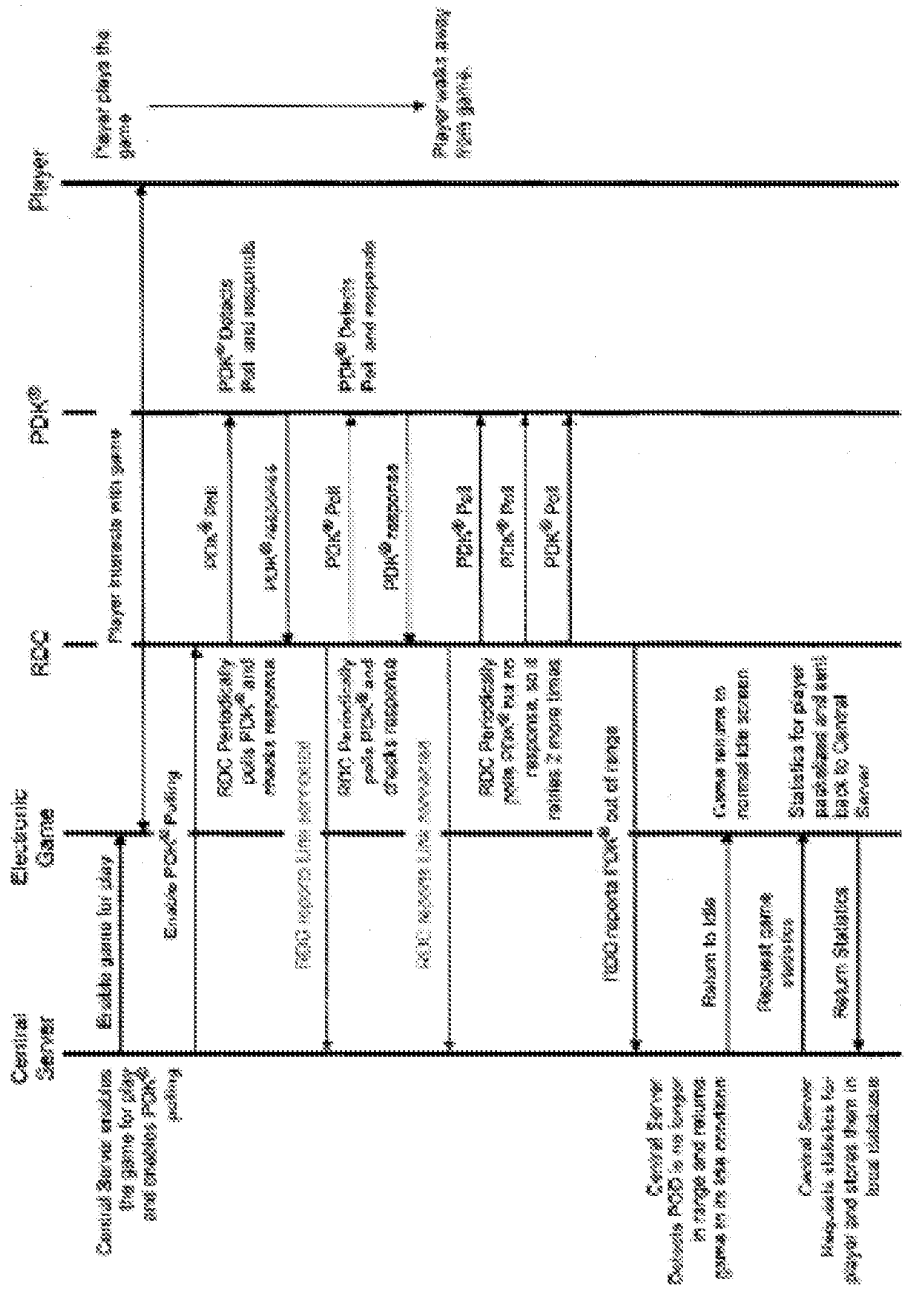

Central Server
Electronic Game
RDC
PDK®
Player
Player plays the game
Player walks away from game
Central Server enables the game for play and enables PDK® polling
Enable game for play
Enable PDK® Polling
RDC Periodically polls PDK® and receives response
RDC reports Link connection
PDK® Poll
PDK® response
PDK® Detects iPod and requests
PDK® Detects iPod and responds
RDC Periodically polls PDK® and checks response
RDC reports Link connection
PDK® Poll
PDK® Poll
PDK® Poll
RDC Periodically polls PDK® but no response, so it retries 2 more times
RDC reports PDK® out of range
Central Server detects RDC is no longer in range and returns game to its idle condition
Return to Idle
Current winners to normal title screen
Request game statistics
Statistics for player paddleball and semi back to Central Server
Central Server requests statistics for player and stores them in local database
Return Statistics

FIGURE 40

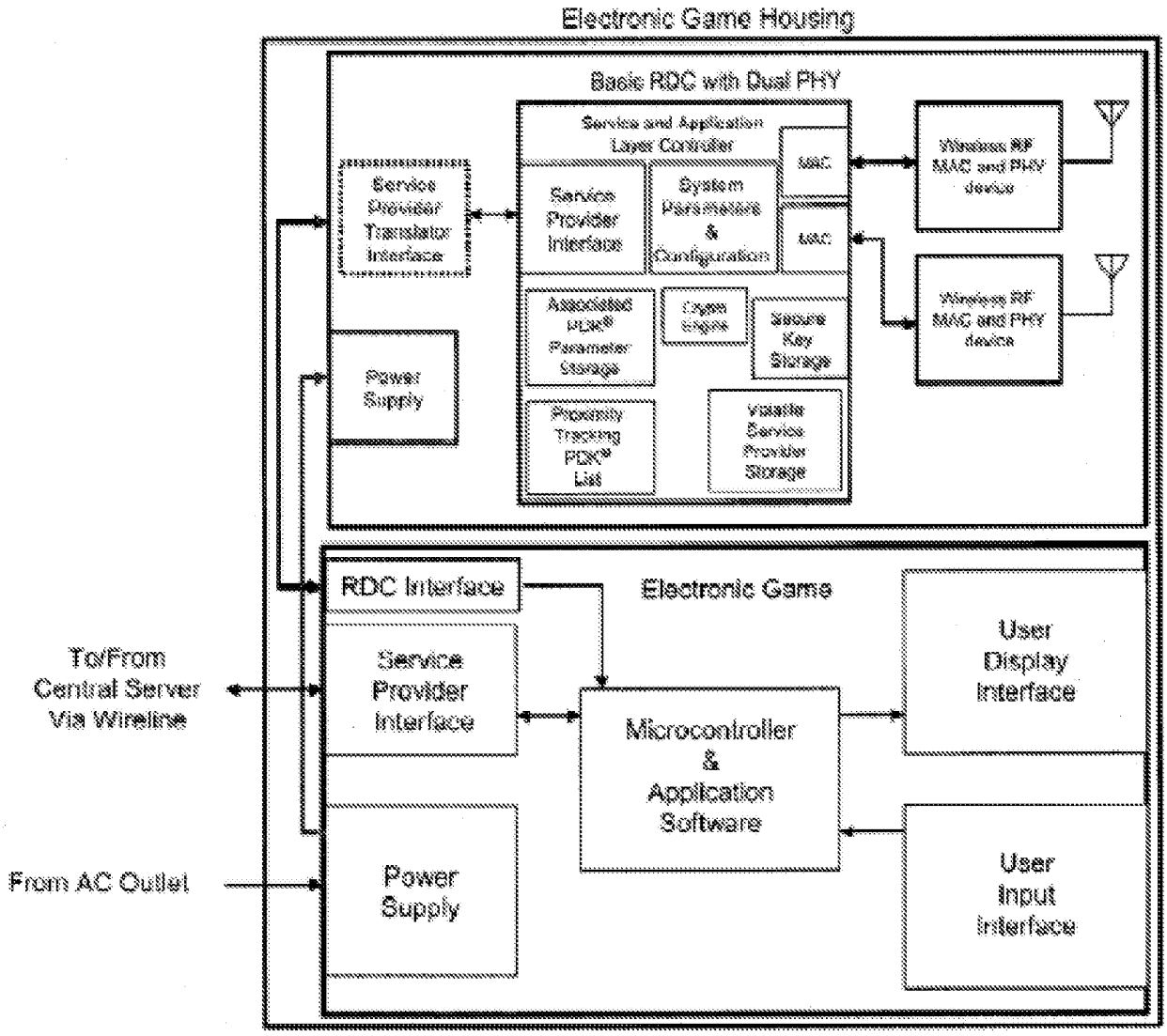

Electronic Game Housing
Basic RDC with Dual PHY
Service and Application Layer Controller
MAC
MAC
Service Provider Translator Interface
Service Provider Interface
System Parameters & Configuration
Wireless RF MAC and PHY device
Wireless RF MAC and PHY device
Associated PDK® Parameter Storage
Open Slots
Secure Key Storage
Power Supply
Proximity Tracking PDK® List
Visible Service Provider Storage
RDC Interface
Electronic Game
To/From Central Server Via Wireline
Service Provider Interface
Microcontroller & Application Software
User Display Interface
From AC Outlet
Power Supply
User Input Interface

FIGURE 41

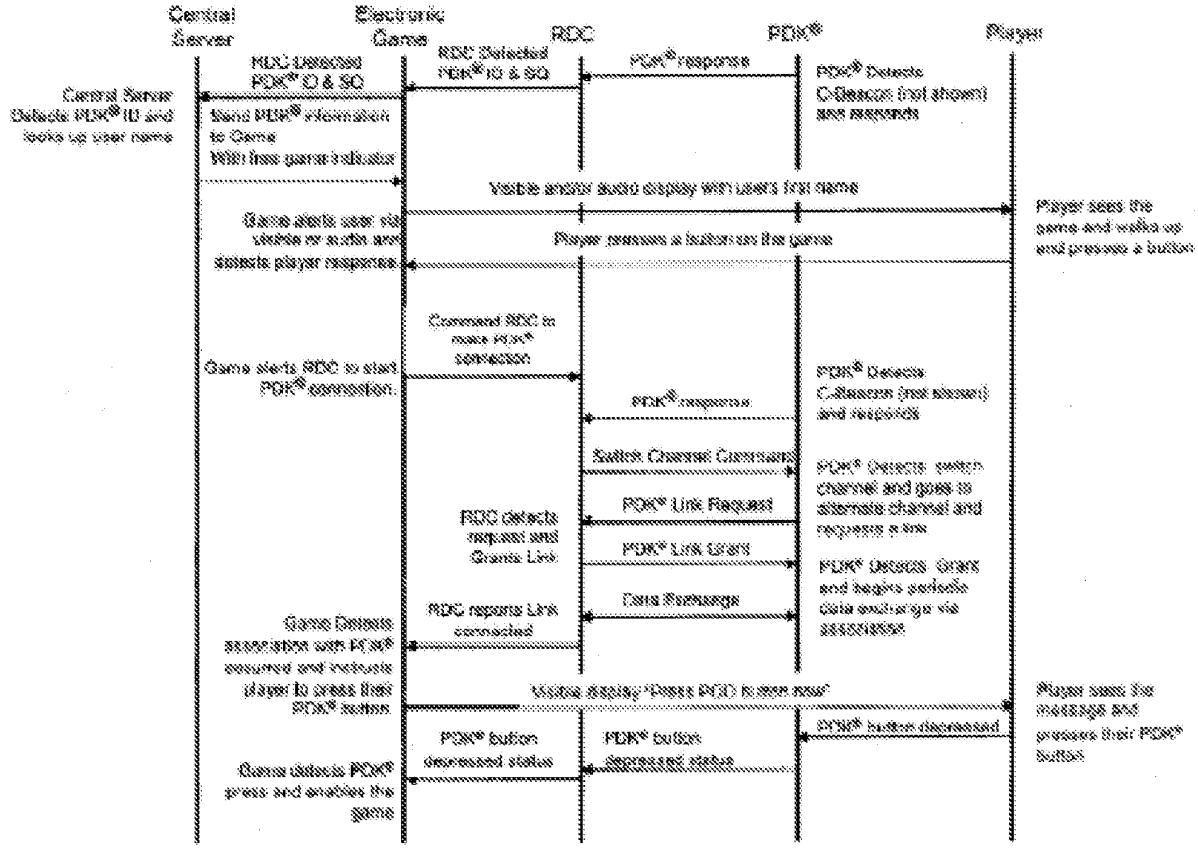

Central Server
Electronic Game
RDC
PDK®
Player
RDC Detected PDK® ID & SQ
RDC Detected PDK® ID & SQ
PDK® response
PDK® Detects C-Beacon (not shown) and responds
Central Server Detects PDK® ID and looks up user name
Sends PDK® information to Game With free game indicator
Visible and/or audio display with User's first name
Player sees the game and walks up and presses a button
Game alerts user via visible or audio and detects player response
Player presses a button on the game
Command RDC to make PDK® connection
Game alerts RDC to start PDK® connection
PDK® Detects C-Beacon (not shown) and responds
PDK® response
Select Channel Command
PDK® Detects switch channel and goes to alternate channel and requests a link
PDK® Link Request
RDC detects request and Grants Link
PDK® Link Grant
PDK® Detects Grant and begins periodic data exchange via association
Data Exchange
RDC reports Link connected
Game Detects association with PDK® assumed and instructs player to press their PDK® button
Visible display "Press PDK to save now"
Player sees the message and presses their PDK® button
PDK® button depressed
PDK® button depressed status
PDK® button depressed status
Game detects PDK® press and enables the game

FIGURE 42

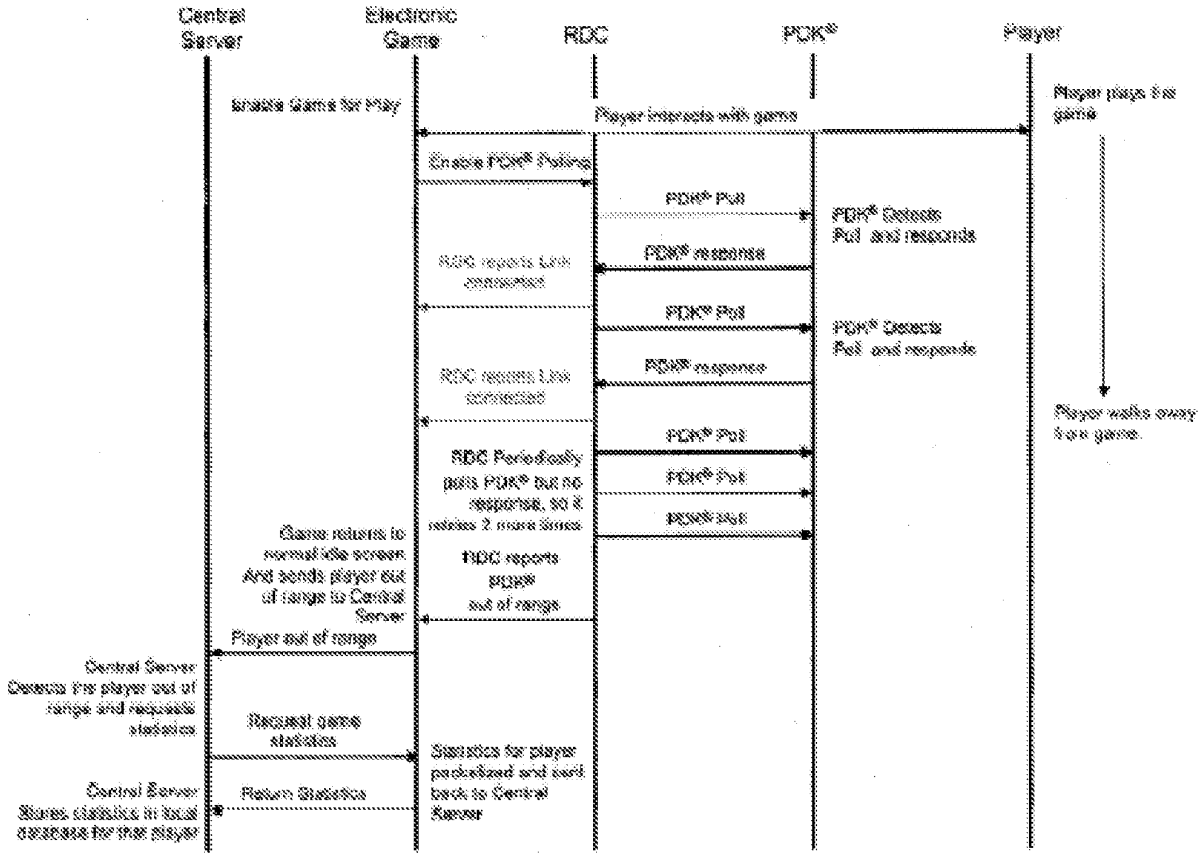

Central Server
Electronic Game
RDC
PDK®
Player
Enable Game for Play
Player interacts with game
Player plays the game
Enable PDK® Polling
PDK® Poll
PDK® Detects Poll and responds
PDK® response
RDC reports Link connected
PDK® Poll
PDK® Detects Poll and responds
PDK® response
RDC reports Link connected
Player walks away from game
PDK® Poll
RDC Periodically polls PDK® but no response, so it retries 2 more times
PDK® Poll
PDK® Poll
Game returns to normal idle screen And sends player out of range to Central Server
RDC reports PDK® out of range
Player out of range
Central Server Detects the player out of range and requests statistics
Request game statistics
Statistics for player packetized and sent back to Central Server
Central Server Stores statistics in local database for that player
Return Statistics

FIGURE 43

Doc code: Oath
Document Description: Oath or declaration filed

PTO/AIA/02 (06-12)
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SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)

Title of Invention	Dynamic Real-Time Tiered Client Access

This statement is directed to:

☐ The attached application,

OR

☒ United States application or PCT international application number 13/875,895 filed on May 2, 2013

LEGAL NAME of inventor to whom this substitute statement applies: David L. Brown

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

David L. Brown

Residence (except for a deceased or legally incapacitated inventor): Jupiter, FL US

City	State	Country
Jupiter	FL	US

Mailing Address (except for a deceased or legally incapacitated inventor):

17708 127th Dr. North

City	State	Zip	Country
Jupiter	FL	33478	US

I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application.

The above-identified application was made or authorized to be made by me.

I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Relationship to the inventor to whom this substitute statement applies:

☐ Legal Representative (for deceased or legally incapacitated inventor only),

☒ Assignee,

☐ Person to whom the inventor is under an obligation to assign,

☐ Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or

☐ Joint Inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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SUBSTITUTE STATEMENT

Circumstances permitting execution of this substitute statement:

- ☐ Inventor is deceased.
- ☐ Inventor is under legal incapacity.
- ■ Inventor cannot be found or reached after diligent effort, or
- ☐ Inventor has refused to execute the oath or declaration under 37 CFR 1.63.

If there are joint inventors, please check the appropriate box below:

- ■ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted.

OR

- ☐ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus, a Substitute Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and providing inventor information is attached. See 37 CFR 1.64(b).

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

Name: John J. Giobbi	Date (Optional):

Signature:

Residence (unless provided in an application data sheet, PTO/AIA/14 or equivalent):

City Bend	State OR	Country US

Mailing Address (unless provided in an application data sheet, PTO/AIA/14 or equivalent)

689 NW Stonepine Drive

City Bend	State OR	Zip 97701	Country US

Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc code: Oath
Document Description: Oath or declaration filed

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SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)

Title of Invention	Dynamic Real-Time Tiered Client Access

This statement is directed to:

☐ The attached application,

OR

☒ United States application or PCT international application number 13/875,895 filed on May 2, 2013

LEGAL NAME of inventor to whom this substitute statement applies: Fred S. Hirt

(*E.g.*, Given Name (first and middle (if any)) and Family Name or Surname)

Fred S. Hirt

Residence (except for a deceased or legally incapacitated inventor): Brookfield, IL, US

City	State	Country
Brookfield	IL	US

Mailing Address (except for a deceased or legally incapacitated inventor):

3504 Harrison

City	State	Zip	Country
Brookfield	IL	60513	US

I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application.

The above-identified application was made or authorized to be made by me.

I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Relationship to the inventor to whom this substitute statement applies:

☐ Legal Representative (for deceased or legally incapacitated inventor only),

☒ Assignee,

☐ Person to whom the inventor is under an obligation to assign,

☐ Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or

☐ Joint Inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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SUBSTITUTE STATEMENT

Circumstances permitting execution of this substitute statement:

- ☐ Inventor is deceased.
- ☐ Inventor is under legal incapacity.
- ■ Inventor cannot be found or reached after diligent effort, or
- ☐ Inventor has refused to execute the oath or declaration under 37 CFR 1.63.

If there are joint inventors, please check the appropriate box below:

- ■ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted.

OR

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PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

Name: John J. Giobbi	Date (Optional):
Signature:	

Residence (unless provided in an application data sheet, PTO/AIA/14 or equivalent):

City: Bend	State: OR	Country: US

Mailing Address (unless provided in an application data sheet, PTO/AIA/14 or equivalent)

689 NW Stonepine Drive

City: Bend	State: OR	Zip: 97701	Country: US

Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63.

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INTEL-1002
U.S. Patent 9,265,043

Electronic Patent Application Fee Transmittal

Application Number:	13875895
Filing Date:	02-May-2013
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Filer:	Kanda Ishihara/JoLin Johnson
Attorney Docket Number:	10001-03836 US

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Late Filing Fee for Oath or Declaration	2051	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

INTEL-1002
U.S. Patent 9,265,043

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**70**

INTEL-1002
U.S. Patent 9,265,043

Electronic Acknowledgement Receipt

EFS ID:	16567790
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Kanda Ishihara
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	12-AUG-2013
Filing Date:	02-MAY-2013
Time Stamp:	21:13:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$70
RAM confirmation Number	7693
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

INTEL-1002
U.S. Patent 9,265,043

1	Applicant Response to Pre-Exam Formalities Notice	03836US_ResponsetoNoticetoFileCorrectedApplicationPapers.pdf	71372 0d83614a987a1bb20c611ca6162adc898c1f59c7	no	2
Warnings:					
Information:					
2	Drawings-only black and white line drawings	03836US_ReplacementDrawings.pdf	498098 2c5526b69d7e0778a372dcef860069a5ead4310e	no	13
Warnings:					
Information:					
3	Oath or Declaration filed	03836US_SubStatement_David Brown.pdf	597049 9f2ca4cdc0b8868b79fc7da3ff400cb86767c9fe	no	3
Warnings:					
Information:					
4	Oath or Declaration filed	03836US_SubStatement_Fred Hirt.pdf	593048 03da0c555b721e290a7912d139b3300efb9ab3b5	no	3
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	29985 336ddd865fe07a4c12100b8dfd1b3c07d83225a0	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1789552		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/875,895

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE($)	FEE($)		RATE($)	FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

INTEL-1002
U.S. Patent 9,265,043

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/875,895	05/02/2013	2827	800	10001-03836 US	20	2

CONFIRMATION NO. 8260

89194
Patent Law Works/Proxense
201 South Main Street, Suite 250
Salt Lake City, UT 84111

UPDATED FILING RECEIPT

OC000000063278539

Date Mailed: 08/20/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)
David L. Brown, Jupiter, FL;
Fred S. Hirt, Brookfield, IL;

Applicant(s)
Proxense, LLC, Bend, OR

Assignment For Published Patent Application
Proxense, LLC, Bend, OR

Power of Attorney: None

Domestic Priority data as claimed by applicant
This application is a CON of 13/491,417 06/07/2012 PAT 8457672
which is a CON of 11/620,577 01/05/2007 PAT 8219129
which claims benefit of 60/760,362 01/06/2006

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 06/03/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/875,895**
Projected Publication Date: 11/28/2013
Non-Publication Request: No
Early Publication Request: No

** SMALL ENTITY **

Title

Dynamic Real-Time Tiered Client Access

Preliminary Class

365

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5307349		1994-04-26	Shloss et al.	
	2	5317572		1994-05-31	Satoh	
	3	5392287		1995-02-21	Tiedermann et al.	
	4	5410588		1995-04-25	Ito	
	5	5506863		1996-04-09	Meidan et al.	
	6	5517502		1996-05-14	Bestler et al.	
	7	5689529		1997-11-18	Johnson	
	8	5760705		1998-06-02	Glessner et al.	

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	9	6138010		2000-10-24	Rabe et al.	
	10	6148210		2000-11-14	Elwin et al.	
	11	6240076		2001-05-29	Kanerva	
	12	6279146		2001-08-21	Evans et al.	
	13	6788924		2004-09-07	Knutson et al.	
	14	6795425		2004-09-21	Raith	
	15	6879567		2005-04-12	Callaway et al.	
	16	6889067		2005-05-03	Willey	
	17	6891822		2005-05-10	Gubbi et al.	
	18	6957086		2005-10-18	Bahl et al.	
	19	7031945		2006-04-18	Donner	

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	20	7068623		2006-06-27	Barany et al.	
	21	7130668		2006-10-31	Chang et al.	
	22	7209955		2007-04-24	Major et al.	
	23	7230908		2007-06-12	Vanderaar et al.	
	24	7277737		2007-10-02	Vollmer et al.	
	25	7460836		2008-12-02	Smith et al.	
	26	7573841		2009-08-11	Lee et al.	
	27	7583643		2009-09-01	Smith et al.	
	28	7620184		2009-11-17	Marque Pucheu	
	29	7724720		2010-05-25	Korpela et al.	
	30	8036152		2011-10-11	Brown et al.	

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If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20010024428		2001-09-27	Onouchi	
	2	20020022455		2002-02-21	Salokannel et al.	
	3	20020037732		2002-03-28	Gous et al.	
	4	20020086690		2002-07-04	Takahashi et al.	
	5	20020128017		2002-09-12	Virtanen	
	6	20020153996		2002-10-24	Chan et al.	
	7	20020177460		2002-11-28	Beasley et al.	
	8	20030036416		2003-02-20	Pattabiraman et al.	
	9	20030109274		2003-06-12	Budka et al.	

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	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

	10	20030117969		2003-06-26	Koo et al.	
	11	20030223394		2003-12-04	Parantainen et al.	
	12	20040029620		2004-02-12	Karaoguz	
	13	20040029635		2004-02-12	Giobbi	
	14	20040048570		2004-03-11	Oba et al.	
	15	20040082385		2004-04-29	Silva et al.	
	16	20050040961		2005-02-24	Tuttle	
	17	20050047386		2005-03-03	Yi	
	18	20050049013		2005-03-03	Chang et al.	
	19	20050090200		2005-04-28	Karaoguz et al.	
	20	20050105600		2005-05-19	Culum et al.	

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	21	20050201389		2005-09-15	Shimanuki et al.	
	22	20050272403		2005-12-08	Ryu et al.	
	23	20060022800		2006-02-02	Krishna et al.	
	24	20060025180		2005-02-02	Rajkotia et al.	
	25	20060030353		2006-02-09	Jun	
	26	20060194598		2006-08-31	Kim et al.	
	27	20060198337		2006-09-07	Hoang	
	28	20060205408		2006-09-14	Nakagawa et al.	
	29	20060238305		2006-10-26	Loving et al.	
	30	20060274711		2006-12-07	Nelson, Jr. et al.	
	31	20070008916		2007-01-11	Haugli et al.	

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	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

	32	20070060095		2007-03-15	Subrahmanya et al.	
	33	20070174809		2007-07-26	Brown et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	PCT International Search Report and Written Opinion, PCT/US07/00349, March 19, 2008, 10 pgs.	☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Kanda Ishihara/	Date (YYYY-MM-DD)	2013-08-23
Name/Print	Kanda V. Ishihara	Registration Number	56607

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Fenwick & West LLP

MAR 21 2008

PCT RECEIVED

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Greg T. Sueoka
FENWICK & WEST LLP
Silicon Valley Center
801 California Street
Mountain View, CA 94041

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)*
Applicant's or agent's file reference 12194PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US07/00349	International filing date *(day/month/year)* 08 January 2007
Applicant PROXENSE, LLC	

25000-

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 1435

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Greg T. Sueoka
FENWICK & WEST LLP
Silicon Valley Center
801 California Street
Mountain View, CA 94041

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 19 MAR 2008
Applicant's or agent's file reference 12194PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US07/00349	International filing date *(day/month/year)* 08 January 2007
Applicant PROXENSE, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 1435

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

INTEL-1002
U.S. Patent 9,265,043

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 12194PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US07/00349	International filing date *(day/month/year)* 08 January 2007	(Earliest) Priority Date *(day/month/year)* 06 January 2006
Applicant PROXENSE, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

   a. the figure of the **drawings** to be published with the abstract is Figure No. 4

   ☒ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (April 2007)

INTEL-1002
U.S. Patent 9,265,043

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/00349

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet (page 10)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-16 and 31

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (April 2007)

INTEL-1002
U.S. Patent 9,265,043

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/00349

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04Q 7/20 (2008.01)
USPC - 455/41.2
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - H04Q 7/20 (2008.01)
USPC - 455/41.2, 455/502

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Patbase, Pubwest

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0090200 A1 (KARAOGUZ et al) 28 April 2005 (28.04.2005) entire document	1-6,8-9,12-16,31
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Y		7, 10, 11
Y	US 6,879,567 B2 (CALLAWAY et al) 12 April 2005 (12.04.2005) entire document	7, 10, 11
A	US 6,957,086 B2 (BAHL et al) 18 October 2005 (18.10.2005) entire document	1-16, 31

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
01 February 2008	19 MAR 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

INTEL-1002
U.S. Patent 9,265,043

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-16 and 31, drawn to a system and apparatus configured for communication in a wireless coverage area.
Group II, claims 17-30, 32, 33 and 102-108, drawn to a gaming system, apparatus and method for facilitating data exchange.
Group III, claims 34-59, drawn to a method, apparatus and system facilitating data exchange.
Group IV, claims 60-81, drawn to an apparatus, method and system facilitating wireless data exchange.
Group V, claims 82-101, drawn to a system, method and apparatus facilitating wireless data exchange.

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is a wireless device configured to broadcast synchronization information in a wireless coverage area of a network device to coordinate a data exchange between a first wireless device and a second wireless device located in the wireless coverage area as claimed therein is not present in the invention of Groups II-V; the special technical feature of the Group II invention is arranging to wirelessly detect a presence of a portable wireless user device in proximity to a system as claimed therein is not present in the invention of Groups I and III-V; the special technical feature of the Group III invention is assigning a time slot during which a client device can receive data as claimed therein is not present in the invention of Groups I, II, IV and V; and the special technical feature of the Group IV invention is activating a wireless transceiver from a sleep mode at a beginning of a time slot as claimed therein is not present in the invention of Groups I-III and V; and the special technical feature of the Group V invention is adjusting a wireless coverage range in response to an initiation of a wireless transaction between a reader device and a client device as claimed therein is not present in the invention of Groups I-IV.

Since none of the special technical features of the Group I, II, III, IV and V inventions is found in more than one of the inventions, unity of invention is lacking.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
Greg T. Sueoka
FENWICK & WEST LLP
Silicon Valley Center
801 California Street
Mountain View, CA 94041

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	19 MAR 2008
Applicant's or agent's file reference: 12194PCT	FOR FURTHER ACTION: See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US07/00349	08 January 2007	06 January 2006

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04Q 7/20 (2008.01)
USPC - 455/41.2

Applicant PROXENSE, LLC

1. This opinion contains indications relating to the following items:

- [X] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [X] Box No. IV Lack of unity of invention
- [X] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	01 February 2008	Blaine Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

INTEL-1002
U.S. Patent 9,265,043

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/00349

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-16 and 31, drawn to a system and apparatus configured for communication in a wireless coverage area.
Group II, claims 17-30, 32, 33 and 102-108, drawn to a gaming system, apparatus and method for facilitating data exchange.
Group III, claims 34-59, drawn to a method, apparatus and system facilitating data exchange.
Group IV, claims 60-81, drawn to an apparatus, method and system facilitating wireless data exchange.
Group V, claims 82-101, drawn to a system, method and apparatus facilitating wireless data exchange.

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is a wireless device configured to broadcast synchronization information in a wireless coverage area of a network device to coordinate a data exchange between a first wireless device and a second wireless device located in the wireless coverage area as claimed therein is not present in the invention of Groups II-V; the special technical feature of the Group II invention is arranging to wirelessly detect a presence of a portable wireless user device in proximity to a system as claimed therein is not present in the invention of Groups I and III-V; the special technical feature of the Group III invention is assigning a time slot during which a client device can receive data as claimed therein is not present in the invention of Groups I, II, IV and V; and the special technical feature of the Group IV invention is activating a wireless transceiver from a sleep mode at a beginning of a time slot as claimed therein is not present in the invention of Groups I-III and V; and the special technical feature of the Group V invention is adjusting a wireless coverage range in response to an initiation of a wireless transaction between a reader device and a client device as claimed therein is not present in the invention of Groups I-IV.

Since none of the special technical features of the Group I, II, III, IV and V inventions is found in more than one of the inventions, unity of invention is lacking.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. 1-16 and 31

Form PCT/ISA/237 (Box No. IV) (April 2007)

INTEL-1002
U.S. Patent 9,265,043

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/00349

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7, 10, 11	YES
	Claims	1-6,8-9,12-16,31	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-16,31	NO
Industrial applicability (IA)	Claims	1-16,31	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-6,8-9,12-16 and 31 lack novelty under PCT Article 33(2) as being anticipated by Karaoguz et al. (US 2005/0090200; hereinafter Karaoguz).

Referring to claim 1, Karaoguz discloses a system, comprising: a first wireless device having a first range of wireless coverage (see par. 0015, note the piconet and devices); a second wireless device having a second range of wireless coverage (see par. 0016, note the second plurality of devices); and a synchronization device having a third range of wireless coverage and configured for communication with the first wireless device and the second wireless device, wherein an operation of the first fixed wireless device (see par. 0015, note the piconet coordinator) and an operation of the second fixed wireless device are coordinated based on synchronization information wirelessly broadcast by the synchronization device (see par. 0060, note the synchronized message).

Referring to claim 2, Karaoguz (as discussed in the lack of novelty of claim 1 above) discloses wherein the first range and the second range of wireless coverage at least partially overlap (see fig. 9, also see par. 0075, note the proximity).

Referring to claim 3, Karaoguz discloses wherein an operation of a portable wireless device located in at least one of the first range and the second range is coordinated using the synchronization information (see par. 0075, note the proximity, also see par. 0076, note the piconet devices).

Referring to claim 4, Karaoguz discloses wherein one of the first fixed wireless device and the second fixed wireless device is arranged to communicate with another of the first fixed wireless device and the second fixed wireless device (see par. 0092, note the devices and the arrangement).

Referring to claim 5, Karaoguz discloses wherein at least one of the first fixed wireless device and the second fixed wireless device (see par. 0015, note the piconet and devices) comprises: a first wireless transceiver arranged to continuously monitor broadcasts by the synchronization device (see par. 0015, note the piconet coordinator); and a second wireless transceiver arranged to wirelessly communicate with a portable wireless user device in proximity to the at least one of the first fixed wireless device and the second fixed wireless device (see par. 0075, note the proximity).

Referring to claim 6, Karaoguz discloses wherein at least one of the first fixed wireless device and the second fixed wireless device (see par. 0015, note the piconet and devices) comprises: a single transceiver arranged to periodically monitor broadcasts by the synchronization device (see par. 0015, note the piconet coordinator, also see par. 0060, note the synchronized message) and further arranged to wirelessly communicate with a portable wireless user device in proximity to the at least one of the first fixed wireless device and the second fixed wireless device (see par. 0075, note the proximity).

Referring to claim 8, Karaoguz discloses a central server configured to gather information from the first fixed wireless device and the second fixed wireless device (see par. 0044, note the piconet coordinator).

Referring to claim 9, Karaoguz (as discussed in the lack of novelty of claim 8 above) discloses wherein the central server is operatively connected to at least one of the first fixed wireless device and the second fixed wireless device via a wired connection (see par. 0016, note the second plurality of devices, also see par. 0084, note the wired connection).

Referring to claim 12, Karaoguz discloses wherein at least one of the first fixed wireless device and the second fixed wireless device is arranged to simultaneously detect presence of a plurality of portable wireless user devices in proximity to the at least one of the first fixed wireless device and the second fixed wireless device (see par. 0016, note the second plurality of devices , also see par. 0075, note the proximity).

(Cont. in Supplemental Box)

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box No. V
2. Citations and explanations:

Referring to claim 13, Karaoguz (as discussed in the lack of novelty of claim 12 above) discloses wherein the at least one of the first fixed wireless device and the second fixed wireless device is further arranged to differentiate among the plurality of simultaneously detected portable wireless user devices (see par. 0087, note the grouping).

Referring to claim 14, Karaoguz wherein the at least one of the first fixed wireless device and the second fixed wireless device is further arranged to coordinate a plurality of data exchanges with the plurality of simultaneously detected portable wireless user devices (see par. 0016, note the second plurality of devices , also see par. 0075, note the proximity).

Referring to claim 15, Karaoguz (as discussed in the lack of novelty of claim 14 above) discloses discloses wherein the plurality of data exchanges is coordinated based on the synchronization information (see par. 0060, note the synchronized message).

Referring to claim 16, Karaoguz discloses wherein the synchronization device is a standalone device (see par. 0092, note the device).

Referring to claim 31, Karaoguz discloses an apparatus, comprising: a predetermined network device, wherein the network device (see par. 0015, note the piconet and devices) comprises: a wireless transmitter configured to broadcast synchronization information in a wireless coverage area of the network device to coordinate a data exchange between a first wireless device and a second wireless device located in the wireless coverage area (see par. 0015, note the piconet coordinator, also see par. 0075, note the proximity).

Claims 7, 10 and 11 lack an inventive step under PCT Article 33(3) as being obvious over Karaoguz in view of Callaway et al. (US 6,879,567 B2; hereinafter Callaway).

Referring to claim 7, Karaoguz (as discussed in the lack of novelty of claim 1 above) is silent on wherein the synchronization device is arranged to broadcast a security update. However, in disclosing nodes within a communication system, Callaway teaches wherein the synchronization device is arranged to broadcast a security update (see col. 4 lines 32-40, note the security). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein the synchronization device is arranged to broadcast a security update in the invention of Karaoguz as taught by Callaway in order to have message encryption and integrity of the communication (see col. 4 lines 32-40).

Referring to claim 10, Karaoguz (as discussed in the lack of novelty of claim 1 above) is silent on wherein a wireless communication in the system is dependent on an IEEE 802.15.4 protocol. However, in disclosing nodes within a communication system, Callaway teaches a wireless communication in the system is dependent on an IEEE 802.15.4 protocol (see col. 4 lines 14-23, note the IEEE 802.15.4 protocol). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a wireless communication in the system is dependent on an IEEE 802.15.4 protocol in the invention of Karaoguz as taught by Callaway in order to support low power wireless personal area network.

Referring to claim 11, Karaoguz (as discussed in the lack of novelty of claim 1 above) is silent on wherein use of a service provided by the system is accessible with a portable wireless device, wherein successful access depends at least partially on a security mechanism provided in at least one of the first fixed wireless device and the second fixed wireless device. However, in disclosing nodes within a communication system, Callaway teaches wherein use of a service provided by the system is accessible with a portable wireless device, wherein successful access depends at least partially on a security mechanism provided in at least one of the first fixed wireless device and the second fixed wireless device (see col. 4 lines 32-40, note the security). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein use of a service provided by the system is accessible with a portable wireless device, wherein successful access depends at least partially on a security mechanism provided in at least one of the first fixed wireless device and the second fixed wireless device in the invention of Karaoguz as taught by Callaway in order to have message encryption and integrity of the communication (see col. 4 lines 32-40).

Claims 1-16 and 31 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Electronic Acknowledgement Receipt

EFS ID:	16677231
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Kanda Ishihara
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	23-AUG-2013
Filing Date:	02-MAY-2013
Time Stamp:	19:45:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	03836US_IDS.pdf	614266 cb57985f3f6e8ef11f32fb7ab6d6e3c08581e daf	no	9

Warnings:	
Information:	

INTEL-1002
U.S. Patent 9,265,043

2	Non Patent Literature	03836US_ISRPCTUS0700349.PDF	607429 41666400137bee0f9081bec4dbb4a68a24d02b1d	no	10
Warnings:					
Information:					
			Total Files Size (in bytes):	1221695	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/875,895	05/02/2013	David L. Brown	10001-03836 US

CONFIRMATION NO. 8260

89194
Patent Law Works/Proxense
201 South Main Street, Suite 250
Salt Lake City, UT 84111

PUBLICATION NOTICE

OC000000065267830

Title: Dynamic Real-Time Tiered Client Access

Publication No.US-2013-0315210-A1
Publication Date:11/28/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2473
	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6963270		2005-11-08	Gallagher et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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	First Named Inventor	David L. Brown
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	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

	1		☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2473
	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Kanda Ishihara/	Date (YYYY-MM-DD)	2014-04-02
Name/Print	Kanda V. Ishihara	Registration Number	56607

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	18657822
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Kanda Ishihara
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	02-APR-2014
Filing Date:	02-MAY-2013
Time Stamp:	22:50:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	03836US_InformationDisclosureStatement.pdf	611986 456e4891350adc6cdfc2fe1fecfe8b4f184a4ac4	no	4

Warnings:	
Information:	

INTEL-1002
U.S. Patent 9,265,043

Total Files Size (in bytes):	611986

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INTEL-1002
U.S. Patent 9,265,043

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	13875895
Filing Date	2013-05-02
First Named Inventor	David L. Brown
Art Unit	2473
Examiner Name	Kwang Bin Yao
Attorney Docket Number	10001-03836 US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6134283		2000-10-17	Sands et al.	
	2	6369693		2002-04-09	Gibson	
	3	6839542		2005-01-04	Sibecas et al.	
	4	8340672		2012-12-25	Brown et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070072636		2007-03-29	Worfolk et al.	
	2	20070109117		2007-05-17	Heitzmann et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2473
	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

	3	20070133478		2007-06-14	Armbruster et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2473
	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

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OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Kanda Ishihara/	Date (YYYY-MM-DD)	2014-07-24
Name/Print	Kanda V. Ishihara	Registration Number	56607

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Electronic Acknowledgement Receipt

EFS ID:	19678446
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Kanda Ishihara
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	24-JUL-2014
Filing Date:	02-MAY-2013
Time Stamp:	20:25:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	03836US_InformationDisclosureStatement.pdf	612400 d982cd99b660e2dcbc7a24d53d27edd79fc8231d	no	4

Warnings:	
Information:	

INTEL-1002
U.S. Patent 9,265,043

Total Files Size (in bytes):	612400

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New Applications Under 35 U.S.C. 111
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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	05/02/2013	David L. Brown	10001-03836 US	8260

89194 7590 04/21/2015

Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

EXAMINER
LA, PHONG

ART UNIT	PAPER NUMBER
2469	

NOTIFICATION DATE	DELIVERY MODE
04/21/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net
mfurubayashi@patentlawworks.net

PTOL-90A (Rev. 04/07)

Examiner-Initiated Interview Summary	Application No. 13/875,895	Applicant(s) BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	

All participants (applicant, applicant's representative, PTO personnel):

(1) *PHONG LA*. (3)_____.

(2) *Matthew Holmes (Reg.# 65,160)*. (4)_____.

Date of Interview: *26 March 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1-20*.

Identification of prior art discussed: *Yoon et al. (2005/0141451); Jeong et al. (2005/0063372); Chu (2008/0096573); Kim et al. (2003/0087645)*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

*For the purpose of compact prosecution, the Applicant was contacted to propose an Examiner's Amendment regarding the allowable subject matter in the application; it is proposed that claims 7, 3, and 2 to incorporate into claim 1. However, it did not result in placing the application into condition for allowance.*_____.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/PHONG LA/ Examiner, Art Unit 2469	

Office Action Summary	Application No. 13/875,895	Applicant(s) BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/02/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) *3, 7,10,15 and 20* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *5/02/2015* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *See Continuation Sheet*.

3) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *3/26/2015* .

4) ☐ Other: _____.

Continuation of Attachment(s) 2). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :7/24/2014; 4/02/2014; 8/23/2013.

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DETAILED ACTION

1. This office action is in reply communication filed on 5/02/2013.

2. Claims 1-20 are pending.

Claim Objections

3. Claims 1-8 and 12 are objected to because of the following informalities:

Claim 1 recited, "*responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class*".

For clarity, it is suggested to rewrite as "*unassigning, responsive to the change in the network traffic, the first specific time slot based on the priority level data associated with the first class*".

Claim 12 recites the limitation "*the one or more of the portable client device"* in line 11. For clarity, it is suggested to rewrite as "*one or more of the portable client device"*.

Claim 12 recites the limitation "*the user"* in line 11. For clarity, it is suggested to rewrite as "*a user"*.

Claims 2-8 are also objected to, since they are depended on claim1.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of 35 U.S.C. 112(b):

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(B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim 1 recites the limitation "*responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class".* It is unclear ***whether*** *1) unassigning the first specific time slot for the first client device which already been assigned* **or** 2) *unassigning the first specific time slot for other first client device based on the priority level data associated with the first class* ***or*** *3) unassigning the first specific time slot that was previously assigned to the first client device then reassigning the first specific time slot to other first client device based on the priority level data associated with the first class.* Thus, the claim is indefinite.

Claim 12 recites the limitation "*a portable client device configured to wirelessly receive the synchronization information including one or more of information assigning a first specific time slot during which the portable client device can communicate with one*

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or more of the reader device and a network device, and responsive to a change in network traffic, information unassigning the first specific time slot, the time slot determined according to priority level data associated with a class, the class associated with the one or more of the portable client device and the user of the portable client device".

First, it is unclear and ambiguous that the portable client device configured to wirelessly receive the **synchronization information** for assigning a first specific time slot and for unassigning the first specific time slot.

Second, it is unclear the information unassigning is the same or different from the one or more of information assigning.

Third, it is unclear that the one or more of the portable client device and the user of the portable client device come from.

Therefore, the claim is indefinite.

Claim 12 recites the limitation "*responsive to a change in network traffic, information unassigning the first specific time slot, the time slot determined*" in lines 8-9. The claim recites:

First, it is unclear of the time slot is belong to the first specific time slot.

Second, there is no indicating of the first specific time slot has been unassigned after it assigned.

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Third, even if the first specific time slot already unassigned, it is unclear that the information unassigning the first specific time slot was received by the synchronization information so that the time slot is determined.

In view of above interpretation, the claim is indefinite.

Claim 19 recites the limitation "*the reader device is further configured to detect … and* ***sending a message*** *… and further configured to switch to the second channel* ***responsive to receiving the message"***. It is unclear for the reader device configured to switch to the second channel based on the message was received since there was no message was received but rather the message was sent. Thus, the claim is indefinite.

Claims 2-11, 13-18, and 20 are also rejected, since they are depended to claims 1 and 12.

For the purpose of examination, examiner will interpret the claims as best understood.

Double Patenting

Non-Statutory

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

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obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Note that the applicant filing of the continuing application is voluntary and not the direct, unmodified result of restriction requirement under 35 U.S.C. 121 (i.e. without a restriction requirement by the examiner) and the claims of the second application are drawn to the “same invention” as patent.

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It has been held that the omission an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184 (CCPA). Also note *Ex parte Rainu*, 168 USPQ 375 (Bd.App.1969); omission of a reference element whose function is not needed would be obvious to one skilled in the art. Moreover, the doctrine of double patenting seeks to prevent the unjustified extension of patent exclusivity beyond the term of a patent.

Claims 1-2, 4-6 and 8-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Brown et al. (US Patent No 8,457,672) in view of Kim et al. (US 2003/0117980).

Note that the applicant filing of the continuing application is voluntary and not the direct, unmodified result of restriction requirement under 35 U.S.C. 121 (i.e. without a restriction requirement by the examiner) and the claims of the second application are drawn to the "same invention" as the first application or patent. Moreover, although the conflicting claims are not identical, they are not patentably distinct from each other because claims of the instant application are the same scope of the claims of Brown et al. (US Patent No 8,457,672) by adding the well-known elements and functions as set forth below.

Regarding claim 1, Brown'672 discloses a method of facilitating data exchange, comprising:

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determining a first specified time slot based on synchronization information wirelessly received by a first client device and priority level data associated with a first class **(see claim 1, lines 1-5)**,

wherein the first class is associated with one or more of the first client device and a user of the first client device **(see claim 1, lines 15-19)**;

assigning the first specific time slot for the first client device to wirelessly communicate with a fixed proximity-based reader device **(see claim 1, lines 6-8)**.

Brown'672 does not explicitly disclose *determining to a change in network traffic responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class.*

However, Kim'980 discloses *determining to a change in network traffic* **[Para. 110-114; measuring/determining a change of uplink/downlink data rates used by the UE],** *responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class.* **[Para. 115-119; based on change of uplink/downlink data rates used reassigned to a UE through combination of the dedicated channel information given in Table 1 and Table 2].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*determining to a change in network traffic responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class*" as taught by Kim'980 in the system of Brown'672, so that it would to provide an apparatus and method for reassigning channels to a UE and other UEs in a Node B to which the UE belongs in

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order to increase an inter-frequency measurement period or an inter-RAT measurement period **[see Kim'980, Para. 48]**.

Regarding claim 2, Brown'672 discloses the method of claim 1, comprising: assigning a second specific time slot to the first client device, the second specific time slot set according to the first class **(see claim 2)**.

Regarding claim 4, Brown'672 discloses the method of claim 1, wherein assigning the first specific time slot comprises: masking a bit field of the first client device **(see claim 3)**.

Regarding claim 5, Brown'672 discloses the method of claim 4, wherein the mask is wirelessly communicated to the first client device **(see claim 4).**

Regarding claim 6, Brown'672 discloses the method of claim 2, wherein the first specified time slot and the second specified time slot are on different wireless channels **(see claim 6).**

Regarding claim 8, Brown'672 discloses the method of claim 1, further comprising: reassigning the first specific time slot to a second client device in response to a detection that the first client device is unavailable **(see claim 7).**

Regarding claim 9, Brown'672 discloses the method of claim 1, further comprising: determining that the first client device should switch to a different channel; and sending a message to the first client device and the first client device, responsive to receiving the message, switching the channel upon which the first client device wirelessly communicates with a fixed proximity-based reader device **(see claim 8).**

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Regarding claim 10, Brown'672 discloses the method of claim 9, wherein the message includes information identifying the first client device, information identifying the fixed proximity-based reader device, a designation of a channel and a command to switch to the designated channel **(see claim 9).**

Regarding claim 11, Brown'672 discloses the method of claim 9, wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system **(see claim 10).**

Regarding claim 12, Brown'672 discloses a system, comprising:

a reader device having a first interface and a second interface, the first interface configured to receive synchronization information on a first channel and the second interface configured to communicate with a client device on a second channel in accordance with the synchronization information **(see claim 11, lines 4-10)**; and

a portable client device configured to wirelessly receive the synchronization information including one or more of information assigning a first specific time slot during which the portable client device can communicate with one or more of the reader device and a network device **(see claim 11, lines 11-16)**.

Brown'672 does not explicitly disclose responsive to a change in network traffic, information unassigning the first specific time slot, the time slot determined according to priority level data associated with a class, the class associated with the one or more of the portable client device and the user of the portable client device.

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However, Kim'980 discloses responsive to a change in network traffic **[Para. 110-114; measuring/determining a change of uplink/downlink data rates used by the UE],** information unassigning the first specific time slot, the time slot determined according to priority level data associated with a class, the class associated with the one or more of the portable client device and the user of the portable client device **[Para. 115-119; based on change of uplink/downlink data rates used reassigned to a UE through combination of the dedicated channel information given in Table 1 and Table 2].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "responsive to a change in network traffic, information unassigning the first specific time slot, the time slot determined according to priority level data associated with a class, the class associated with the one or more of the portable client device and the user of the portable client device" as taught by Kim'980 in the system of Brown'672, so that it would to provide an apparatus and method for reassigning channels to a UE and other UEs in a Node B to which the UE belongs in order to increase an inter-frequency measurement period or an inter-RAT measurement period **[see Kim'980, Para. 48]**.

Regarding claim 13, Brown'672 discloses the system of claim 12, wherein the client device is configured to transmit data to one or more of the reader device and the network device during the specific time slot **(see claim 12).**

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Regarding claim 14, Brown'672 discloses the system of claim 12, wherein the client device is configured to receive data from one or more of the reader device and the network device during the specific time slot **(see claim 13).**

Regarding claim 15, Brown'672 discloses the system of claim 12, wherein the time slot is determined based on a mask applied to a bit field stored in the client device, and wherein the mask is wirelessly communicated to the client device as part of the synchronization information wirelessly broadcasted by the network device **(see claim 14).**

Regarding claim 16, Brown'672 discloses the system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to another client device **(see claim 16).**

Regarding claim 17, Brown'672 discloses the system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic **(see claim 17).**

Regarding claim 18, Brown'672 discloses the system of claim 12, wherein the reader device is configured to reassign the timeslot during which the client device communicates with the reader device based at least in part on at least one of a user associated with the client device, a class of a user associated with the client device, a class of the client device, and a network traffic load in the system **(see claim 15).**

Regarding claim 19, Brown'672 discloses the system of claim 12, wherein the reader device is further configured to detect the portable client device on the first

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channel and sending a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device, the reader device capable of wirelessly communicating on the first and the second wireless channels and further configured to switch to the second channel responsive to receiving the message **(see claim 18).**

Regarding claim 20, Brown'672 discloses the system of claim 19, wherein the message includes information identifying the portable client device, information identifying the reader device, a designation of a channel and a command to switch to the designated channel **(see claim 19).**

7. **Claims 3, and 7** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over US Patent No 8,457,672 (hereinafter refers to as Brown'672) in view of Kim et al. (US 2003/0117980), and Jeong et al. (2005/0063372).

Regarding claim 3, Brown'672 discloses the method of claim 2, but does not explicitly disclose determining a second change in the network traffic, and wherein the assignment of the second specific time slot to the first client device according to the first class is responsive to the second change in the network traffic.

However, Jeong discloses determining a second change in the network traffic **[Para. 40; if does not exist voice data to be sent during the voice communications]***, and wherein the assignment of the second specific time slot to the*

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first client device according to the first class is responsive to the second change in the network traffic **[Para. 40; releasing four time slots allocated]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*determining a second change in the network traffic, and wherein the assignment of the second specific time slot to the first client device according to the first class is responsive to the second change in the network traffic*" as taught by Jeong in the combined system of Brown'672 and Kim, so that it would to provide smooth voice communications **[see Jeong, Para. 11]**.

Regarding claim 7, Brown'672 discloses the method of claim 3, but does not explicitly disclose determining a third change in the network traffic; and

reassigning the first specific time slot to the first client device responsive to the third change in the network traffic.

However, Jeong discloses determining a third change in the network traffic **[Para. 40; if does not exist voice data to be sent during the voice communications]**; and reassigning the first specific time slot to the first client device responsive to the third change in the network traffic **[Para.31-32; allocating/assigning the specific time slot for one device 12-18/device four total GTSs in order for voice data communication /first class].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "determining a third change in the network traffic; and reassigning the first specific time slot to the first client device responsive to

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the third change in the network traffic" as taught by the combined system of Brown'672 and Kim, so that it would to provide smooth voice communications **[see Jeong, Para. 11]**.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1, 8-9, 11-14, and 16-19 are rejected under 35 U.S.C. 103(a) unpatentable over Chu (US 2008/0096573) in view of Kim'645 et al. (US 2003/0087645) and further in view of Kim'980 et al. (US 2003/0117980).

Regarding claim 1, Chu discloses a *method of facilitating data exchange* **[Fig. 1, 6, Para. 1-12, 34; channel time allocation method]**, *comprising:*

determining a first specified time slot **[Para. 31-33; determining by monitoring and selecting available frequency channels or subframes/first specified time slot]** *based on synchronization information wirelessly received by a first client device and priority level data* **[Fig. 1, Para. 39, 43-44; based on the channel/subframe information 220/synchronization information including amount of interference associated with each or a subset of the frequency channels or subframes (given priority; See Para. 45-46) received by wireless device 106/first client device]***;*

assigning the first specific time slot for the first client device to wirelessly communicate with a fixed proximity-based reader device **[Para. 34-35, 48; channel selection and subframe allocation processes/(for first specific time) during which the wireless devices 106/ first client device can communicate with one or more of the base station 104/fixed proximity-based reader device]**.

Although, Chu discloses a system including *determining a first specified time slot and assigning the first specific time slot for the first client device to wirelessly communicate with a fixed proximity-based reader device,* **but does not explicitly disclose** a system including *determining a first specified time slot based on "priority level data associated with a first class, wherein the first class is associated with one or more of the first client device and a user of the first client device".*

However, Kim'645 discloses a system including *determining a first specified time slot based on "priority level data associated with a first class"* **[Fig. 2, Para. 40-42, 48, 53; frequency assignment process 28 of AP determining by detect channel status to assign channel based on traffic load/priority level data associated with**

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interferer classification/first class], *wherein the first class is associated with one or more of the first client device and a user of the first client device* **[Para. 53-58; wherein traffic load of all class interferers associated with the one or more of the terminal 16/portable client device and the user interface (PC or workstation)/user of the portable client device; See Fig. 1, Para. 25].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a system including *determining a first specified time slot based on priority level data associated with a first class, wherein the first class is associated with one or more of the first client device and a user of the first client device*" as taught by Kim'645 in the system of Chu, so that it would to provide an effective, distributed mechanism to coordinate the channel access among terminals and APs **[see Kim'645, Para. 7]**.

Combined system of Chu and Kim'645 does not explicitly disclose *determining to a change in network traffic responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class.*

However, Kim'980 discloses *determining to a change in network traffic* **[Para. 110-114; measuring/determining a change of uplink/downlink data rates used by the UE],** *responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class.* **[Para. 115-119; based on change of uplink/downlink data rates used reassigned to a UE through combination of the dedicated channel information given in Table 1 and Table 2]**

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Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*determining to a change in network traffic responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to provide an apparatus and method for reassigning channels to a UE and other UEs in a Node B to which the UE belongs in order to increase an inter-frequency measurement period or an inter-RAT measurement period **[see Kim'980, Para. 48]**.

Regarding claim 8, combined system of Chu, Kim'645 and Kim'980 discloses *the method of claim 1*.

The combined system of Chu, Kim'645 does not explicitly disclose *reassigning the first specific time slot to a second client device in response to a detection that the first client device is unavailable.*

However, Kim'980 discloses *reassigning the first specific time slot to a second client device* **[Para. 48, 89, 142; the Node B/reader device is configured to reassign the time slot was not used/first timeslot to the UE/(portable client device)]** *in response to a detection that the first client device is unavailable* **[Para. 135-136; channel resources for the time slots unused/unassigning by the UE (the period that the UE does not communicate with the Node B)]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*reassigning the first specific time slot to a*

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second client device in response to a detection that the first client device is unavailable" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to provide an apparatus and method for reassigning channels to a UE and other UEs in a Node B to which the UE belongs in order to increase an inter-frequency measurement period or an inter-RAT measurement period **[see Kim'980, Para. 48]**.

Regarding claim 9, combined system of Chu, Kim'645 and Kim'980 discloses *the* method of claim 1.

The combined system of Chu, Kim'645 does not explicitly disclose *determining that the first client device should switch to a different channel; and sending a message to the first client device and the first client device, responsive to receiving the message, switching the channel upon which the first client device wirelessly communicates with a fixed proximity-based reader device.*

However, Kim'980 discloses *determining that the first client device should switch to a different channel* **[Para. 167; analyzing /determining an index in the NBAP message and determines availability of channel assignment];** *and*

sending a message to the first client device and the first client device, responsive to receiving the message **[Fig. 15, Para. 167; Node B transmits a Radio Link Setup Response NBAP message to the SRNC to inform the radio link setup, and then performs call connection with UE in step 1504**, *switching the channel upon which the first client device wirelessly communicates with a fixed proximity-based*

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reader device **[Fig. 15, Para. 167; change/switch channel responsive to receiving the NBAP message]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*determining that the first client device should switch to a different channel; and sending a message to the first client device and the first client device, responsive to receiving the message, switching the channel upon which the first client device wirelessly communicates with a fixed proximity-based reader device*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to maintain communication with the UE using the assigned radio resources **[see Kim'980, Para. 167]**.

Regarding claim 11, combined system of Chu, Kim's 645 and Kim's 980 discloses *the* method of claim 9.

The combined system of Chu, Kim'645 does not explicitly disclose wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system.

However, Kim's 980 discloses wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system **[Para. 170; assigning the time slots**

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reversed according to priority to inter-frequency or inter-RAT measurement-related UEs/(class of the client device)].

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to maintains communication with the UE using the assigned radio resources **[see Kim'980, Para. 167]**.

Regarding claim 12, Chu discloses *a system* **[Fig. 1, Para. 26; system 100]**, *comprising:*

a reader device **[Fig. 2; base station 104]** *having a first interface and a second interface* **[Fig. 2, Para. 39-40; transceiver interface 210 suitable structure supporting wireless transmission of outbound signals and wireless reception of inbound signals]**, *the first interface configured to receive synchronization information on a first channel* **[Fig. 1, Para. 42-43, 47; channel controller 208 controlling the transceiver interface 210/first interface for using communication channels to receive channel/subframe information 220/synchronization information (with respective basestation among other bastations) on a first channel (see Para. 33)]** *and the second interface configured to communicate with a client device on a second channel in accordance with the synchronization information* **[Fig. 1, Para. 27; channel**

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controller 208 controlling the transceiver interface 210/second interface for using communication channels to communicate using a particular wireless frequency channel on a second channel (see Para. 33]; *and*

a portable client device **[Fig. 1, Para. 26; wireless devices 106]** *configured to wirelessly receive the synchronization information including one or more of information* **[Fig. 1, Para. 39, 43-44; receive the channel/subframe information 220/synchronization information including include information associated with those frequency channels or subframes, such as an amount of interference associated with each or a subset of the frequency channels or subframes]** *assigning a first specific time slot during which the portable client device can communicate with one or more of the reader device and a network device* **[Para. 34-35, 48; subframe allocation processes (for first specific time) during which the wireless devices 106/portable client device can communicate with one or more of the base station 104/reader device and another base station 104/network device]**, *the time slot determined according to priority level data* **[Para. 45-46; given priority to the subframe/ first specific time slot used by the base station 104b over other available subframes]**.

Although, Chu discloses a system including *a reader device and a portable client device in communicating and received synchronization information of assigning first specific time slot according to priority level data,* **but does not explicitly disclose** *the time slot determined according to priority level data associated with "a class", "the*

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class associated with the one or more of the portable client device and the user of the portable client device".

However, Kim'645 discloses *the time slot determined according to priority level data associated with "a class",* **[Fig. 2, Para. 40-42, 48, 53; frequency assignment process 28 of AP determining by detect channel status to assign channel based on traffic load/priority level data associated with interferer classification/first class]**, *the class associated with the one or more of the portable client device and the user of the portable client device* **[Para. 53-58; the traffic load of all class interferers/ class associated with the one or more of the terminal 16s/portable client device and the user interface (PC or workstation)/user of the portable client device; See Fig. 1, Para. 25].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "assigning a first specific time slot during which the portable client device can communicate with one or more of the reader device and a network device" as taught by Kim'645 in the system of Chu, so that it would to provide an effective, distributed mechanism to "coordinate" the channel access among terminals and APs **[see Kim'645, Para. 7]**.

Combined system of Chu and Kim'645 does not explicitly disclose *responsive to a change in network traffic, information unassigning the first specific time slot.*

However, Kim'980 discloses *responsive to a change in network traffic* **[Para. 110-114; based on change of uplink/downlink data rates used by the UE],**

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information unassigning the first specific time slot **[Para. 115-119; reassigned to a UE through combination of the dedicated channel information given in Table 1 and Table 2].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*responsive to a change in network traffic, information unassigning the first specific time slot*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to change a position of a period for the inter-frequency measurement or inter-RAT measurement **[see Kim'980, Para. 49]**.

Regarding claim 13, combined system of Chu, Kim'645 and Kim'980 discloses *the system of claim 12.*

The combined system of Chu, Kim'645 does not explicitly disclose *the client device is configured to transmit data to one or more of the reader device and the network device "during the specific time slot".*

However, Kim'980 discloses *the client device is configured to transmit data to one or more of the reader device and the network device "during the specific time slot"* **[Para. 14, 50-54; UE/client device transmit transmission signal/data over the time period among the plurality of time periods of uplink channel to the Node Bs].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*the client device is configured to transmit data to one or more of the reader device and the network device "during the specific*

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time slot" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to change a position of a period for the inter-frequency measurement or inter-RAT measurement **[see Kim'980, Para. 49]**.

Regarding claim 14, combined system of Chu, Kim'645 and Kim'980 *the system of claim 12.*

The combined system of Chu, Kim'645 does not explicitly disclose *wherein the client device is configured to receive data from one or more of the reader device and the network device during the specific time slot.*

However, Kim'980 discloses *wherein the client device is configured to receive data from one or more of the reader device and the network device during the specific time slot* **[Para. 14, 50-54; UE/client device receive transmission signal/data over the time period among the plurality of time periods of down channel from the Node Bs]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein the client device is configured to receive data from one or more of the reader device and the network device during the specific time slot*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to change a position of a period for the inter-frequency measurement or inter-RAT measurement **[see Kim'980, Para. 49]**.

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Regarding claim 16, combined system of Chu, Kim'645 and Kim'980 the system of claim 12.

The combined system of Chu, Kim'645 does not explicitly disclose *wherein after unassigning the first time slot the reader device is configured to reassign the first timeslot to another client device.*

However, Kim'980 discloses wherein after unassigning the first time slot **[Para. 135-136; channel resources for the time slots unused/unassigning by the UE (the period that the UE does not communicate with the Node B)]**, the reader device is configured to reassign the first timeslot to another client device **[Para. 48, 89, 142; the Node B/reader device is configured to reassign the time slot was not used/first timeslot to the UE/(portable client device)]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein after unassigning the first time slot the reader device is configured to reassign the first timeslot to another client device*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to provide an apparatus and method for reassigning channels to a UE and other UEs in a Node B to which the UE belongs in order to increase an inter-frequency measurement period or an inter-RAT measurement period **[see Kim'980, Para. 48]**.

Regarding claim 17, combined system of Chu, Kim'645 and Kim'980 the system of claim 12.

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The combined system of Chu, Kim'645 does not explicitly disclose *wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic.*

However, Kim'980 discloses *wherein after unassigning the first time slot* **[Para. 135-136; channel resources for the time slots unused/unassigning by the UE (the period that the UE does not communicate with the Node B)]**, *the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic* **[Para. 48, 89, 142; the Node B/reader device is configured to reassign the time slot was not used/first timeslot to the UE/(portable client device) when UE interrupts transmission within a subframe or frame period through a data transmission/(responsive to another change in the network traffic)]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to provide an apparatus and method for reassigning channels to a UE and other UEs in a Node B to which the UE belongs in order to increase an inter-frequency measurement period or an inter-RAT measurement period **[see Kim'980, Para. 48]**.

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Regarding claim 18, combined system of Chu, Kim'645 and Kim'980 the system of claim 12.

The combined system of Chu, Kim'645 does not explicitly disclose *wherein the reader device is configured to reassign the timeslot during which the client device communicates with the reader device based at least in part on at least one of a user associated with the client device, a class of a user associated with the client device, a class of the client device, and a network traffic load in the system.*

However, Kim'980 *discloses* *wherein the reader device is configured to reassign the timeslot during which the client device communicates with the reader device based at least in part on at least one of a user associated with the client device, a class of a user associated with the client device, a class of the client device, and a network traffic load in the system* **[Para. 170; assigning the time slots reversed according to priority to inter-frequency or inter-RAT measurement-related UEs/(class of the client device)]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein the reader device is configured to reassign the timeslot during which the client device communicates with the reader device based at least in part on at least one of a user associated with the client device, a class of a user associated with the client device, a class of the client device, and a network traffic load in the system*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to maintains communication with the UE using the assigned radio resources **[see Kim'980, Para. 167]**.

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Regarding claim 19, combined system of Chu, Kim'645 and Kim'980 *the system of claim 12.*

The combined system of Chu, Kim'645 does not explicitly disclose *wherein the reader device is further configured to detect the portable client device on the first channel and sending a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device, the reader device capable of wirelessly communicating on the first and the second wireless channels and further configured to switch to the second channel responsive to receiving the message.*

However, Kim'980 *discloses* *wherein the reader device is further configured to detect the portable client device on the first channel* **[Fig. 15, Para. 167; Node B operating inter-RAT measurement]** *and sending a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device* **[Fig. 15, Para. 167; Node B transmits a Radio Link Setup Response NBAP message to the SRNC to inform the radio link setup, and then performs call connection with UE in step 1504]**, *the reader device capable of wirelessly communicating on the first and the second wireless channels* **[Fig. 15, Para. 167; the Node B/reader device capable of wirelessly communicating on the transmission/reception channels/(first and the second wireless channels)]** *and further configured to switch to the second channel responsive to receiving the message*

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[Fig. 15, Para. 167; change/switch channel responsive to receiving the NBAP message].

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein the reader device is further configured to detect the portable client device on the first channel and sending a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device, the reader device capable of wirelessly communicating on the first and the second wireless channels and further configured to switch to the second channel responsive to receiving the message*" as taught by Kim'980 in the combined system of Chu and Kim'645, so that it would to maintain communication with the UE using the assigned radio resources **[see Kim'980, Para. 167]**.

10. Claims 2, and 4-5 are rejected under 35 U.S.C. 103(a) unpatentable over Chu (US 2008/0096573) in view of Kim'645 et al. (US 2003/0087645) and further in view of Kim'980 et al. (US 2003/0117980), and further in view of Jeong et al. (US 2005/0063372).

Regarding claim 2, combined system of Chu, Kim'645 and Kim'980 discloses *the method of claim 1,* ***but does not explicitly disclose*** *comprising: assigning a second specific time slot to the first client device, the second specific time slot set according to the first class.*

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However, Jeong discloses assigning a second specific time slot to the first client device, the second specific time slot set according to the first class **[Fig. 5, Para. 32; allocating/assigning a different GTS/second specific time slot for one device/device (there are four total GTSs allocated) for use of voice data communication/first class].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*determining to a change in network traffic responsive to the change in the network traffic, unassigning the first specific time slot based on the priority level data associated with the first class*" as taught by Jeong in the combined system of Chu, Kim'645 and Kim'980, so that it would to provide smooth voice communications **[see Jeong, Para. 11]**.

Regarding claim 4, combined system of Chu, Kim'645 and Kim'980 discloses *the method of claim 1*, **but does not explicitly disclose** *wherein assigning the first specific time slot comprises: masking a bit field of the first client device.*

However, Jeong discloses *wherein assigning the first specific time slot comprises: masking a bit field of the first client device* **[Para. 33-34; wherein allocating/assigning GTS field/first specific time slot having total 12 bytes are used and 3 bytes allocated to each GTS].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein assigning the first specific time slot comprises: masking a bit field of the first client device*" as taught by Jeong in the

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combined system of Chu, Kim'645 and Kim'980, so that it would to provide smooth voice communications **[see Jeong, Para. 11]**.

Regarding claim 5, combined system of Chu, Kim'645, Kim'980, and Jeong discloses *the method of claim 4*,

The combined system of Chu, Kim'645, and Kim'980 does not explicitly disclose *wherein the mask is wirelessly communicated to the first client device.*

However, Jeong discloses *wherein the mask is wirelessly communicated to the first client device* **[Para. 33-34; 3 total 12 bytes are used and 3 bytes allocated to each GTS for voice communications to a device]**.

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein the mask is wirelessly communicated to the first client device*" as taught by Jeong in the combined system of Chu, Kim'645 and Kim'980, so that it would to provide smooth voice communications **[see Jeong, Para. 11]**.

11. Claim 6 is rejected under 35 U.S.C. 103(a) unpatentable over Chu (US 2008/0096573) in view of Kim'645 et al. (US 2003/0087645) and further in view of Kim'980 et al. (US 2003/0117980) and further in view of Jeong et al. (US 2005/0063372), and further in view of Neimela (US 2006/0262741).

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Regarding claim 6, combined system of Chu, Kim's 645, Kim's 980 and Jeong discloses *the method of claim 2,* **but does not explicitly disclose** *wherein the first specified time slot and the second specified time slot are on different wireless channels,*

However, Niemela discloses *wherein the first specified time slot and the second specified time slot are on different wireless channels* **[Fig. 7, Para. 41; two timeslots of different carrier frequencies f.sub.t1 and f.sub.t2 of the base station].**

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "*wherein the first specified time slot and the second specified time slot are on different wireless channels*" as taught by Niemela in the combined system of Chu, Kim'645, Kim'980, and Jeong, so that it would to improve quality of transmission through diversity and added capacity through the multicarrier operation **[see Niemela, Para. 8]**.

Allowable Subject Matter

12. Claims 3, 7, 10, 15, and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), 2nd paragraph, ODP rejection set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Conclusion

13. Examiner has cited particular Paragraphs in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. SEE MPEP 2141.02 [R-5] VI. PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS: A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) In re Fulton, 391 F.3d 1195, 1201,73 USPQ2d 1141, 1146 (Fed. Cir. 2004). >See also MPEP §2123.

In the case of amending the Claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

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Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHONG LA whose telephone number is (571)272-2588. The examiner can normally be reached on Monday through Friday from 7:30 A.M. to 4:00 P.M. (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, IAN MOORE can be reached on 571-272-3085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PHONG LA/

Examiner, Art Unit 2469

/IAN N. MOORE/
Supervisory Patent Examiner, Art Unit 2469

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Examiner-Initiated Interview Summary	Application No. 13/875,895	Applicant(s) BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	

All participants (applicant, applicant's representative, PTO personnel):

(1) *PHONG LA*. (3)_____.

(2) *Matthew Holmes (Reg.# 65,160)*. (4)_____.

Date of Interview: *26 March 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1-20*.

Identification of prior art discussed: *Yoon et al. (2005/0141451); Jeong et al. (2005/0063372); Chu (2008/0096573); Kim et al. (2003/0087645)*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

*For the purpose of compact prosecution, the Applicant was contacted to propose an Examiner's Amendment regarding the allowable subject matter in the application; it is proposed that claims 7, 3, and 2 to incorporate into claim 1. However, it did not result in placing the application into condition for allowance.*_____.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/PHONG LA/ Examiner, Art Unit 2469	

Notice of References Cited	Application/Control No. 13/875,895	Applicant(s)/Patent Under Reexamination BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	Page 1 of 3

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*	D	US-2002/0037732 A1	03-2002	Gous et al.	455/502
*	E	US-2002/0105918 A1	08-2002	Yamada et al.	370/294
*	F	US-2002/0128017 A1	09-2002	Virtanen, Kari	455/452
*	G	US-2003/0117980 A1	06-2003	Kim et al.	370/332
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*	I	US-2004/0048609 A1	03-2004	Kosaka, Minoru	455/422.1
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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	V	
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	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 13/875,895	Applicant(s)/Patent Under Reexamination BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	Page 2 of 3

U.S. PATENT DOCUMENTS

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*	C	US-2005/0089000 A1	04-2005	Bae et al.	370/338
*	D	US-2005/0094657 A1	05-2005	Sung et al.	370/431
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*	J	US-7,031,945 B1	04-2006	Donner, Irah H.	705/64
*	K	US-7,068,623 B1	06-2006	Barany et al.	370/329
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Notice of References Cited	Application/Control No. 13/875,895	Applicant(s)/Patent Under Reexamination BROWN ET AL.	
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U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,209,955 B1	04-2007	Major et al.	709/207
*	B	US-7,382,799 B1	06-2008	Young et al.	370/458
*	C	US-7,796,551 B1	09-2010	Machiraju et al.	370/330
	D	US-			
	E	US-			
	F	US-			
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	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

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CONFIRMATION NO. 8260

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/875,895	05/02/2013	370	2469	10001-03836 US

APPLICANTS
Proxense, LLC, Bend, OR

INVENTORS
David L. Brown, Jupiter, FL;
Fred S. Hirt, Brookfield, IL;

**** CONTINUING DATA ***************************
This application is a CON of 13/491,417 06/07/2012 PAT 8457672
which is a CON of 11/620,577 01/05/2007 PAT 8219129
which claims benefit of 60/760,362 01/06/2006

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
06/03/2013

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /PHONG LA/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		FL	42	20	2

ADDRESS
Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111
UNITED STATES

TITLE
Dynamic Real-Time Tiered Client Access

FILING FEE RECEIVED		
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BIB (Rev. 05/07).

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	**Art Unit**
	PHONG LA	2469

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	03/31/2015								
	1	✓								
	2	✓								
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EAST Search History

EAST Search History (Prior Art) /pl/ /pl/ /pl/

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	"20050124294"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/31 12:18
L2	1530	(allocat$3 assign$3 allot$3 locat$3 set$4 designat$3 giv$3 appoint$3) near25 ((Second secondary another other alternative) near3 ((time interval period duration ts) near3 (channel RF slot bandwidth throughput resource freq frequency spectrum))) near25 ((first primary anchor main serving) near3 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/31 12:27
L3	1056	L2 and ((quality near3 service) (quality near3 class) qos QOC priority class level)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/31 12:27
L4	547	L3 and ((traffic load data packet frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/31 12:27
L5	15	L4 and (bit near3 mask$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/31 12:27
L6	3	"20050124294"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/31 12:39
L7	3	"20060262741"	US-PGPUB;	OR	ON	2015/03/31

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:55
S1	21	"8219129"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 10:32
S2	2	"20130315210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 11:28
S3	6	"8457672"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 11:30
S4	182	("20020022455" | "20040029620" | "20050047386" | "20060022800" | "5317572" | "5506863" | "6788924" | "7031945" | "7277737" | "6963270" | "20070072636" | "20070109117" | "6369693" | "20050105600" | "20060025180" | "20070174809" | "6795425" | "7209955" | "7620184" | "7724720" | "5517502" | "6134283" | "20020177460" | "20040048570" | "20040082385" | "20050090200" | "20070008916" | "5392287" | "5517502" | "6240076" | "6957086" | "5317572" | "5392287" | "5410588" | "5760705" | "6839542" | "20010024428" | "20030036416" | "20030117969" | "20040029635" | "20050040961" | "20060274711" | "5410588" | "6148210" | "7130668" | "7230908" | "7583643" | "5307349" | "20020037732" | "20060238305" | "20070060095" | "5760705" | "6891822" | "20020128017" | "20030109274" | "20060194598" | "6279146" | "6889067" | "7068623" | "8036152" | "5506863" | "20070133478" | "20020086690" | "20020153996" | "20030223394" | "20050272403" | "7460836" | "7573841" | "5689529" | "20050049013" | "20050201389" | "20060030353" | "20060198337" | "20060205408" | "5307349" | "5689529" | "6138010" | "6879567" | "8340672").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 15:28
S5	25	"5307349".pn. "20060225408".pn. "7209955".pn. "5517502".pn.	US-PGPUB; USPAT;	OR	ON	2015/03/10 15:30

		"7068623".pn. "6138010".pn. "20020128017".pn. "20020037732".pn.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S6	2	"20060205408"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 15:33
S9	8	S4 and (security near5 (Access entree entrance enter$3 admittance admission transaction service))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 15:39
S10	5428	((Second secondary another other alternative) near3 ((time interval period duration ts) near3 (channel RF slot bandwidth throughput resource freq frequency spectrum))) near25 ((first primary anchor main serving) near3 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 15:59
S11	121445	(allocat$3 assign$3 allot$3 locat$3 set$4 designat$3 giv$3 appoint$3) near15 (first near3 (ts time$1slot (time near3 slot) slot frame))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:04
S12	1517	(allocat$3 assign$3 allot$3 locat$3 set$4 designat$3 giv$3 appoint$3) near25 ((Second secondary another other alternative) near3 ((time interval period duration ts) near3 (channel RF slot bandwidth throughput resource freq frequency spectrum))) near25 ((first primary anchor main serving) near3 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:05
S13	40	((personal near3 key) PDK) same ((reader near3 circuit) RDC) and (security near5 (Access entree entrance enter$3 admittance admission transaction service))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:09
S14	3	@pd<"20060106" and S13	US-PGPUB;	OR	ON	2015/03/10

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:10
S15	1312	S10 and S11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:12
S16	766	S10 and S11 and S12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:13
S17	237	@pd<"20060106" and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:13
S18	3	((Carrier$1Sense adj Multiple adj Access near3 Collision adj Avoidance) CSMA$1CA) and S17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:29
S19	15742	broadcast$3 near10 ((Pilot reference synchronization beacon signa) near5 (data payload info information content))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:44
S20	7	S17 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 16:44
S21	377	((Carrier$1Sense adj Multiple adj Access near3 Collision adj Avoidance) CSMA$1CA) and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:05
S22	43	@pd<"20060106" and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2015/03/10 17:05

			IBM_TDB			
S23	98	((personal near3 key) PDK) and ((reader near3 circuit) RDC) and (security near5 (Access entree entrance enter$3 admittance admission transaction service))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:06
S24	174	((personal near3 key) PDK) and ((reader near3 circuit) RDC)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:06
S25	0	S17 and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:06
S26	0	S22 and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:07
S27	12	((Carrier$1Sense adj Multiple adj Access near3 Collision adj Avoidance) CSMA$1CA) and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:07
S28	0	@pd<"20060106" and S27	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:07
S29	16	S19 and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 17:11
S30	24	(US-20020128017-$ or US-20020037732-$ or US-20060205408-$ or US-20070008916-$ or US-20060022800-$ or US-20050105600-$ or US-20050124294-$ or US-20040208139-$ or US-20050089000-$ or US-20050025093-$ or US-20040252659-$ or US-20030169697-$ or US-20050152394-$ or US-20050141451-$ or US-20050094657-$ or US-20040253996-$ or US-	US-PGPUB; USPAT	OR	ON	2015/03/10 18:40

		20040081127-$ or US-20040048609-$).did. or (US-7209955-$ or US-7068623-$ or US-6138010-$ or US-5517502-$ or US-5307349-$ or US-7031945-$).did.				
S31	4	S30 and (((quality neawr3 service) (quality near3 class) qos QOC priority class level) near3 (Criteria standard condition))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 18:44
S32	22	S30 and ((quality near3 service) (quality near3 class) qos QOC priority class level)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 18:46
S33	9	S30 and ((highest higher top largest) near5 ((quality near3 service) (quality near3 class) qos QOC priority class level))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 18:48
S34	17430	H04W4/06.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 19:59
S35	10135	H04W8/005.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 19:59
S36	31058	H04W24/00.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00
S37	17292	H04W48/08.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00
S38	4226	H04W48/10.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00

S39	10976	H04W48/12.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00
S40	3342	H04W48/14.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00
S41	23216	H04W48/16.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00
S42	0	H04W50/00.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:00
S43	12398	H04W52/0216.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:01
S44	7251	H04W52/50.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:01
S45	16431	H04W72/04.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:01
S46	27939	H04W84/12.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:02
S47	29072	H04W84/18.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2015/03/10 20:02

			DERWENT; IBM_TDB			
S48	7758	H04W72/0446.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:02
S49	21	H04W72/0446.cpc. and S17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 20:02
S50	17	(social near3 channel) same (dedicat$3 near3 channel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 11:42
S51	0	(social near3 channel) same (broascast$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 11:44
S52	16	(social near3 channel) same (non$1social near3 channel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 11:44
S53	25	(US-20020128017-$ or US-20020037732-$ or US-20060205408-$ or US-20070008916-$ or US-20060022800-$ or US-20050105600-$ or US-20050124294-$ or US-20040208139-$ or US-20050089000-$ or US-20050025093-$ or US-20040252659-$ or US-20030169697-$ or US-20050152394-$ or US-20050141451-$ or US-20050094657-$ or US-20040253996-$ or US-20040081127-$ or US-20040048609-$ or US-20020105918-$).did. or (US-7209955-$ or US-7068623-$ or US-6138010-$ or US-5517502-$ or US-5307349-$ or US-7031945-$).did.	US-PGPUB; USPAT	OR	ON	2015/03/30 15:45
S54	1	S50 and ((traffic load data packet frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 15:49
S55	18	S53 and ((traffic load data packet	US-PGPUB;	OR	ON	2015/03/30

		frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3))	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			15:49
S56	1530	(allocat$3 assign$3 allot$3 locat$3 set$4 designat$3 giv$3 appoint$3) near25 ((Second secondary another other alternative) near3 ((time interval period duration ts) near3 (channel RF slot bandwidth throughput resource freq frequency spectrum))) near25 ((first primary anchor main serving) near3 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 16:39
S57	1056	S56 and ((quality near3 service) (quality near3 class) qos QOC priority class level)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 16:41
S58	44	S57 and ((reassign$4 re$1allocat$4) near5 (time near3 slot interval))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 16:43
S59	43	S57 and ((reassign$4 re$1allocat$4) near5 (time near3 (slot interval)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 16:43
S60	16	@pd<"20060106" and S59	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 16:44
S61	1	S57 and (((reassign$4 re$1allocat$4) near5 (time near3 slot interval)) near25 ((traffic load data packet frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 17:02
S62	547	S57 and ((traffic load data packet frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2015/03/30 17:03

			IBM_TDB			
S63	32	S62 and ((reassign$4 re$1allocat$4) near5 (time near3 (slot interval)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 17:03
S64	10	@pd<"20060106" and S63	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 17:04
S65	5	S62 and ((bit near3 mask) near25 (time near3 (slot interval)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 20:04
S66	14	S62 and (bit near3 mask)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 20:05
S67	4	@pd<"20060106" and S66	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 20:05
S68	9	(unassign$3 unallocat$3) near30 ((reassign$4 re$1allocat$4) near5 (time near3 (slot interval)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 21:54
S69	7	S62 and ((reassign$4 re$1allocat$4) near5 (time near3 (slot interval)) near15 ((another other second different) near5 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver destination agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/30 22:17

EAST Search History (Interference)

<This search history is empty>

3/31/2015 5:33:56 PM
C:\Users\pla\Documents\EAST\Workspaces\13875895.wsp

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2473
	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/P.L./	1	6963270		2005-11-08	Gallagher et al.	

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Receipt date: 04/02/2014	Application Number	13875895	13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2013-05-02	
	First Named Inventor	David L. Brown	
	Art Unit	2473	
	Examiner Name	Kwang Bin Yao	
	Attorney Docket Number	10001-03836 US	

	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/Phong La/	Date Considered	02/23/2015

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	Art Unit
	PHONG LA	2469

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
H04W4/06; H04W8/005; H04W24/00; H04W48/08; H04W50/00; H04W72/0446; H04W52/0216; H04W52/50; H04W72/04; H04W84/12; H04W84/18; H04W48/10; H04W48/12; H04W48/14; H04W48/16---text search only - see search history printout	3/31/2015	pl
EAST (USPAT, USPGPUB, EPO, USOCR, FERS, JPO, DERWENT, IBM_TDB) - see search history printout	3/31/2015	pl
Inventor and assignee search in EAST - see search history printout	3/31/2015	pl
70/Multiplex Communications (consulted with Ian Moore (SPE	3/31/2015	pl

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2473
	Examiner Name	Kwang Bin Yao
	Attorney Docket Number	10001-03836 US

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/P.L./	1	6134283		2000-10-17	Sands et al.	
/P.L./	2	6369693		2002-04-09	Gibson	
/P.L./	3	6839542		2005-01-04	Sibecas et al.	
/P.L./	4	8340672		2012-12-25	Brown et al.	

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/P.L./	1	20070072636		2007-03-29	Worfolk et al.	
/P.L./	2	20070109117		2007-05-17	Heitzmann et al.	

Receipt date: 07/24/2014	Application Number	13875895	13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2013-05-02	
(Not for submission under 37 CFR 1.99)	First Named Inventor	David L. Brown	
	Art Unit	2473	
	Examiner Name	Kwang Bin Yao	
	Attorney Docket Number	10001-03836 US	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13875895
	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

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Receipt date: 08/23/2013	Application Number	13875895	13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Filing Date	2013-05-02	
	First Named Inventor	David L. Brown	
	Art Unit	2827	
	Examiner Name	Not Yet Known	
	Attorney Docket Number	10001-03836 US	

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Receipt date: 08/23/2013	Application Number	13875895 13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

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/P.L./	21	7130668		2006-10-31	Chang et al.	
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Receipt date: 08/23/2013	Application Number	13875895	13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2013-05-02	
(Not for submission under 37 CFR 1.99)	First Named Inventor	David L. Brown	
	Art Unit	2827	
	Examiner Name	Not Yet Known	
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/P.L./	1	20010024428		2001-09-27	Onouchi	
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Receipt date: 08/23/2013	Application Number	13875895 13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2013-05-02
(Not for submission under 37 CFR 1.99)	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

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Receipt date: 08/23/2013	Application Number	13875895 13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Filing Date	2013-05-02
	First Named Inventor	David L. Brown
	Art Unit	2827
	Examiner Name	Not Yet Known
	Attorney Docket Number	10001-03836 US

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Receipt date: 08/23/2013	Application Number	13875895	13875895 - GAU: 2469
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2013-05-02	
(Not for submission under 37 CFR 1.99)	First Named Inventor	David L. Brown	
	Art Unit	2827	
	Examiner Name	Not Yet Known	
	Attorney Docket Number	10001-03836 US	

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
/P.L./	1	PCT International Search Report and Written Opinion, PCT/US07/00349, March 19, 2008, 10 pgs.	☐

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IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANTS:	David L. Brown et al.
APPLICATION NO:	13/875,895
FILING DATE:	May 2, 2013
TITLE:	Dynamic Real-Time Tiered Client Access
EXAMINER:	Phong La
GROUP ART UNIT:	2469
ATTY. DKT. NO:	10001-03836 US
CONFIRMATION NO:	8260

CERTIFICATE OF EFS-WEB TRANSMISSION

Pursuant to 240 OG 45 and the Legal Framework For EFS-Web, I hereby certify that this follow-on correspondence is being officially submitted through the USPTO EFS-Web system from the Mountain Time Zone of the United States on the local date shown below:

Dated: July 21, 2015 By: /Matthew M. Holmes/

Matthew M. Holmes, Reg. No. 65,160

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AMENDMENT A

Responsive to the Non-Final Office Action mailed on April 21, 2015, which sets a shortened statutory period for response that expires on July 21, 2015, please enter the following amendment and consider the following remarks.

IN THE CLAIMS

All pending claims are reproduced below.

1. (Currently Amended) A method of facilitating data exchange, comprising:

determining a first specified time slot based on synchronization information wirelessly received by a first portable client device and priority level data associated with a first class, wherein the first class is associated with one or more of the first portable client device and a user of the first portable client device;

assigning the first specific time slot for the first portable client device to wirelessly communicate with a fixed proximity-based reader device;

determining a change in network traffic;

unassigning, responsive to the change in the network traffic, ~~unassigning~~ the first specific time slot to which the first portable client device is assigned to wirelessly communicate with a fixed proximity reader based on the priority level data associated with the first class associated with one or more of the first portable client device and the user of the first portable client device.

2. (Currently Amended) The method of claim 1, comprising:

assigning a second specific time slot to the first portable client device, the second specific time slot set according to the first class.

3. (Currently Amended) The method of claim [[2]]1, comprising:

determining a second change in the network traffic, and

assigning, responsive to the second change in network traffic, a ~~wherein the assignment of the~~ second specific time slot to the first portable client device according to the first class ~~is responsive to the second change in the network traffic~~.

4. (Original) The method of claim 1, wherein assigning the first specific time slot comprises:

masking a bit field of the first client device.

5. (Original) The method of claim 4, wherein the mask is wirelessly communicated to the first client device.

6. (Original) The method of claim 2, wherein the first specified time slot and the second specified time slot are on different wireless channels.

7. (Original) The method of claim 3, comprising:

determining a third change in the network traffic; and

reassigning the first specific time slot to the first client device responsive to the third change in the network traffic.

8. (Original) The method of claim 1, further comprising:

reassigning the first specific time slot to a second client device in response to a detection that the first client device is unavailable.

9. (Original) The method of claim 1, further comprising:

determining that the first client device should switch to a different channel; and

sending a message to the first client device and the first client device, responsive to receiving the message, switching the channel upon which the first client device wirelessly communicates with a fixed proximity-based reader device.

10. (Original) The method of claim 9, wherein the message includes information identifying the first client device, information identifying the fixed proximity-based reader device, a designation of a channel and a command to switch to the designated channel.

11. (Original) The method of claim 9, wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system.

12. (Currently Amended) A system, comprising:

a reader device having a first interface and a second interface, the first interface configured to receive synchronization information on a first channel and the second interface configured to communicate with a portable client device on a second channel in accordance with the synchronization information; and

[[a]]the portable client device configured to wirelessly receive the synchronization information including one or more of information assigning a first specific time slot during which the portable client device can communicate with one or more of the reader device and a network device, and information unassigning, responsive to a change in network traffic, ~~information unassigning~~ the first specific time slot, the one or more corresponding assignment and unassignment of the first specific time slot determined according to priority level data associated with a class, the

class associated with ~~the~~ one or more of the portable client device and [[the]]a user of the portable client device.

13. (Currently Amended) The system of claim 12, wherein the portable client device is configured to transmit data to one or more of the reader device and the network device during the specific time slot.

14. (Currently Amended) The system of claim 12, wherein the portable client device is configured to receive data from one or more of the reader device and the network device during the specific time slot.

15. (Currently Amended) The system of claim 12, wherein the time slot is determined based on a mask applied to a bit field stored in the portable client device, and wherein the mask is wirelessly communicated to the portable client device as part of the synchronization information wirelessly broadcasted by the network device.

16. (Original) The system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to another client device.

17. (Original) The system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic.

18. (Currently Amended) The system of claim 12, wherein the reader device is configured to reassign the timeslot during which the portable client device communicates with the reader device based at least in part on at least one of a user associated with the portable client

device, a class of a user associated with the portable client device, a class of the portable client device, and a network traffic load in the system.

19. (Currently Amended) The system of claim 12, wherein the reader device is further configured to detect the portable client device on the first channel and send[[ing]] a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device, the reader device capable of wirelessly communicating on the first and the second wireless channels and the portable client device further configured to switch to the second channel responsive to receiving the message.

20. (Original) The system of claim 19, wherein the message includes information identifying the portable client device, information identifying the reader device, a designation of a channel and a command to switch to the designated channel.

REMARKS

Claims 1-20 were presented for examination. Claims 1-20 stand rejected in the Office Action dated April 21, 2015 (herein, "OA"). Claims 1-3, 12-15, 18 and 19 are amended without acquiescing to the propriety of the rejections. No new matter is added. Claims 1-20 are pending upon entry of this amendment.

Summary of Office Action

1. Claims 1-8 and 12 are objected to because of alleged informalities.

2. Claims 1-20 are rejected under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (pre-AIA), second paragraph, as allegedly being indefinite.

3. Claims 1-2, 4-6, and 8-20 are rejected on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over Brown et al. (U.S. Patent No. 8,457,672, hereinafter "Brown") in view of Kim et al. (U.S. Publication No. 2003/0117980, hereinafter "Kim'980").

4. Claims 3 and 7 are rejected on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over Brown in view of Kim'980, and Jeong et al. (U.S. Publication No. 2005/0063372, hereinafter "Jeong").

5. Claims 1, 8-9, 11-14, and 16-19 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chu (U.S. Publication No. 2008/0096573, hereinafter "Chu") in view of Kim et al. (U.S. Publication No. 2003/0087645, hereinafter "Kim'645") and further in view of Kim'980.

6. Claims 2 and 4-5 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chu in view of Kim'645 and further in view of Kim'980, and further in view of Jeong.

7. Claim 6 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chu in view of Kim'645 and further in view of Kim'980 and Jeong and further in view of Neimela (U.S. Publication No. 2006/0262741, hereinafter "Neimela")

8. Claims 3, 7, 10, 15, and 20 would be allowable if rewritten to overcome the rejections under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (Pre-AIA), 2nd paragraph.

The rejections are traversed herein.

Response to Objections for Specification

Claims 1-8 and 12 are objected to because of informalities. Claims 1 and 12 are objected as suggested by the Examiner. Accordingly, Applicant respectfully requests withdrawal of the objects to claims 1 and 12 as well as claims 2-8 which were objected to since they depend from claim 1.

Response to Rejections under 35 U.S.C. § 112

Claims 1-20 are rejected under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (pre-AIA), second paragraph, as being indefinite.

Claims 1, 12 and 19 are amended. Applicant respectfully submits that amended claims 1, 12 and 19 are not indefinite and, therefore, respectfully requests that the Examiner withdraw the section 112, second paragraph to claims 1-20.

Response to Rejections under 35 U.S.C. § 103

The rejections under § 103 are addressed by reference to the independent claims as follows.

Independent claim 1

Applicants' amended claim 1 recites, in part:

> determining a first specified time slot based on synchronization information wirelessly received by a first portable client device and priority level data associated with a first class, the first class associated with one or more of the first portable client device and a user of the first portable client device; … and
> unassigning, responsive to the change in the network traffic, the first specific time slot to which the first portable client device is assigned to wirelessly communicate with a fixed proximity reader based on the priority level data associated with the first class associated with one or more of the first client device and the user of the first client device.

On page 16 of the OA, the Examiner argues that Chu discloses "determining a first specified time slot based on synchronization information wirelessly received by a first portable client device," as recited by claim 1, and cites paragraphs [0031]-0033], [0039] and [0043]-[0046]. Respectfully, the Applicant disagrees. The Examiner indicates on page 16 of the OA that the Examiner believes Chu's wireless devices 106 read on Applicant's first client device and Chu's base station reads on the Applicant's fixed proximity-based station. However, paragraphs [0031]-0033], [0039] and [0043]-[0046] of Chu at most disclose a base station selecting a "working channel and/or a working subframe." *See* Chu, [0044]. The cited portions of Chu do not, among other things, disclose that "the working channel and/or a working subframe" are determined based on any information received by Chu's wireless devices 106. Therefore, the cited portions of Chu fail to disclose or render obvious, among other things, "determining a first specified time slot based on synchronization information wirelessly received by a first portable

client device," as recited by claim 1. Neither Kim '645 nor Kim '980 remedy the deficiencies of Chu, and the Examiner does not argue that they do. For at least this reason, claim 1 is patentable over the proposed combination of references.

Moreover, claim 1 is patentable for additional reasons. On pages 16-17, the Examiner argues that Kim '645 discloses determining a first specified time slot based on priority level information associate with a first class, wherein the first class is associated with one or more of the first client device and a user of the first client device and cites paragraphs [0025], [0040]-[0042, [0048], and [0053]-[0058] of Kim '645. Respectfully, the Applicant disagrees. The cited portions of the reference at most disclose "classes of interferers" for each Access Point (AP). The cited portions of the reference do not disclose or suggest that a "class of interferer" is associated with one or more of the first portable client device and a user of the first portable client device" or that priority level is associated with a "class of interferer." Neither Chu nor Kim '980 remedy the deficiencies of Kim '645 and the Examiner does not argue that they do. Therefore, the proposed combination of references fails to disclose or render obvious "determining a first specified time slot based on … priority level data associated with a first class, the first class associated with one or more of the first portable client device and a user of the first portable client device," as recited by claim 1. For this reason alone, claim 1 is patentable over the proposed combination of references.

Furthermore, claim 1 is patentable for additional reasons. On pages 17-18, the Examiner argues that Kim '980 discloses "unassigning, responsive to the change in the network traffic, the first specific time slot to which the first portable client device is assigned to wirelessly communicate with a fixed proximity reader based on the priority level data associated with the first class associated with one or more of the first client device and the user of the first client

device" and cites paragraphs [0110]-[0119] of Kim '980. Respectfully, the Applicant disagrees. The cited portions of the reference at most disclose "a format of a channel assigned or reassigned to a UE." The cited portions of Kim'980 do not disclose, among other things, cited portions of the reference do not disclose or suggest "priority level data" or "class," much less "unassigning, responsive to the change in the network traffic, the first specific time slot to which the first portable client device is assigned to wirelessly communicate with a fixed proximity reader based on the priority level data associated with the first class associated with one or more of the first client device and the user of the first client device." Neither Chu nor Kim '645 remedy the deficiencies of Kim '980 and the Examiner does not argue that they do. Therefore, the proposed combination of references fails to disclose or render obvious "unassigning, responsive to the change in the network traffic, the first specific time slot to which the first portable client device is assigned to wirelessly communicate with a fixed proximity reader based on the priority level data associated with the first class associated with one or more of the first client device and the user of the first client device," as recited by claim 1. For this reason alone, claim 1 is patentable over the proposed combination of references

Accordingly, the proposed combination of references fail to disclose or render obvious each and every element of amended claim 1, and thus claim 1, and all claims depending therefrom, are patentable over the proposed combination.

Independent Claim 12

While differing from claim 1 in scope and/or statutory class, claim 12 is patentable over the proposed combination of references for at least reasons analogous to those discussed above with reference to claim 1.

Dependent Claims

Dependent claims 2-11 and 13-20 are patentable over the proposed combination of the cited references by virtue of the features they recite and their dependency from underlying base claims.

In light of the foregoing, it is respectfully requested that the rejections under 35 U.S.C. § 103(a) be withdrawn.

Response to Double Patenting Rejection

Applicant respectfully requests that the double patenting rejections be held in abeyance until it is determined that the independent claims are allowable subject matter, at which time Applicant will respond to the rejection or file a terminal disclaimer.

Allowable Subject Matter

Applicant thanks the Examiner for recognizing the patentable subject matter of claims 3, 7, 10, 15, and 20 but respectfully declines to re-write the claims in independent form at this time.

CONCLUSION

Allowance of all claims is requested. If the Examiner believes that direct contact with Applicants' attorney will advance the prosecution of this case, the Examiner is encouraged to contact the undersigned as indicated below.

Respectfully submitted,
DAVID L. BROWN ET AL.

Dated: July 21, 2015 By: /Matthew M. Holmes/

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EFS ID:	22982445
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	21-JUL-2015
Filing Date:	02-MAY-2013
Time Stamp:	19:44:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		03836US_AmendmentA.pdf	117761 a3c2f0e5a5075773dc53d83894ef82396eb9d3d3	yes	13

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	13
Warnings:			
Information:			
	Total Files Size (in bytes):	117761	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INTEL-1002
U.S. Patent 9,265,043

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/875,895	Filing Date 05/02/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT	07/21/2015	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/JAMES TUNSTALL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANTS:	David L. Brown et al.
APPLICATION NO:	13/875,895
FILING DATE:	May 2, 2013
TITLE:	Dynamic Real-Time Tiered Client Access
EXAMINER:	Phong La
GROUP ART UNIT:	2469
ATTY. DKT. NO:	10001-03836 US
CONFIRMATION NO:	8260

CERTIFICATE OF EFS-WEB TRANSMISSION

Pursuant to 240 OG 45 and the Legal Framework For EFS-Web, I hereby certify that this follow-on correspondence is being officially submitted through the USPTO EFS-Web system from the Mountain Time Zone of the United States on the local date shown below:

Dated: September 18, 2015 By: /Matthew M. Holmes/

Matthew M. Holmes, Reg. No. 65,160

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

AMENDMENT B

Please enter the following amendment and consider the following remarks.

IN THE SPECIFICATION

Please replace paragraph [0001] with the following amended paragraph:

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority, under 35 U.S.C. § 120, to U.S. Patent ~~Application~~ No. ~~13/491,417~~8,457,672, filed June 7, 2012 and entitled "Dynamic Real-Time Tiered Client Access," which claims the benefit, under 35 U.S.C. § 120, of U.S. Patent ~~Application~~ No. ~~11/620,577~~8,219,129, filed January 5, 2007 and entitled "Dynamic Real-Time Tiered Client Access," which claims the benefit, under 35 U.S.C. § 119, of U.S. Provisional Patent Application No. 60/760,362, filed January 6, 2006 and entitled "Securing Transactions Between an Electric Key and Lock Within Proximity of Each Other," the entireties of which are hereby incorporated by reference.

Examiner Interview Summary & Remarks

On September 17, 2015, the Examiner contacted Applicant's representative, Matthew Holmes. During the call, the Examiner proposed amendment to the preambles of the independent claims, proposed amendment to paragraph [0001] of the specification to refer to the patent numbers rather patent application numbers, and proposed filing a terminal disclaimer. The Examiner indicated that, if such proposals were accepted, the application would be allowed. Applicant's representative agreed to amendment language provided to the Examiner, which the Examiner indicated would be entered as an examiner's amendment. Paragraph [0001] is amended herein as suggested by the Examiner. An eTerminal Disclaimer will also be filed as suggested by the Examiner. Accordingly, allowance of claims 1-20 is respectfully requested.

CONCLUSION

Allowance of all claims is requested. If the Examiner believes that direct contact with Applicants' attorney will advance the prosecution of this case, the Examiner is encouraged to contact the undersigned as indicated below.

Respectfully submitted,
DAVID L. BROWN ET AL.

Dated: September 18, 2015 By: /Matthew M. Holmes/

Matthew M. Holmes, Reg. No. 65,160
Attorney for Applicants
PATENT LAW WORKS LLP
201 South Main Street, Suite 250
Salt Lake City, UT 84111
Tel.: (385) 232-7853
Fax: (801) 355-0160
Email: mholmes@patentlawworks.net

MMH:kkt

Electronic Acknowledgement Receipt

EFS ID:	23536628
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	18-SEP-2015
Filing Date:	02-MAY-2013
Time Stamp:	16:43:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	03836US_AmendmentB.pdf	80194 ba616a6a353400d9de3a071addd72fcfc9bb9f82	no	3

Warnings:	
Information:	

INTEL-1002
U.S. Patent 9,265,043

Total Files Size (in bytes):	80194

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
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New International Application Filed with the USPTO as a Receiving Office
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INTEL-1002
U.S. Patent 9,265,043

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	13/875,895
Filing Date	May 2, 2013
First Named Inventor	David L. Brown
Title	Dynamic Real-Time Tiered Client Access
Art Unit	2469
Examiner Name	Phong La
Attorney Docket Number	10001-03836 US

SIGNATURE of Applicant or Patent Practitioner

Signature	/Matthew Holmes/	Date (Optional)	
Name	Matthew Holmes	Registration Number	65160
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Proxense, LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Doc Code: PA..

Document Description: Power of Attorney

PTO/AIA/82B(07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in the attached transmittal letter.

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

89194

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

Name	Registration Number	Name	Registration Number

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant:

☐ Inventor or Joint Inventor

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor

☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (*e.g.*, a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document)

SIGNATURE of Applicant for Patent

Signature		Date	02/20/14
Name	John J. Giobbi	Telephone	
Title and Company	Chief Executive Officer Proxense, LLC		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms for more than one signature, see below *.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INTEL-1002
U.S. Patent 9,265,043

Electronic Acknowledgement Receipt

EFS ID:	23541509
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	18-SEP-2015
Filing Date:	02-MAY-2013
Time Stamp:	17:17:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	03836US_PowerofAttorney.pdf	1028519 386ea23f6dacfe2f357c4a3f90da05e3602080f1	no	3
Warnings:					
Information:					

INTEL-1002
U.S. Patent 9,265,043

Total Files Size (in bytes):	1028519

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New Applications Under 35 U.S.C. 111
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/875,895	05/02/2013	David L. Brown	10001-03836 US

CONFIRMATION NO. 8260

89194
Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

POA ACCEPTANCE LETTER

OC000000077672116

Date Mailed: 09/28/2015

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/18/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mteklemichael/

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	13875895
Filing Date	02-May-2013
First Named Inventor	David Brown
Attorney Docket Number	10001-03836 US
Title of Invention	Dynamic Real-Time Tiered Client Access

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Proxense, LLC	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

8457672

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

INTEL-1002
U.S. Patent 9,265,043

○	I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

◉ Small Entity

○ Micro Entity

○ Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 65160

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

○ A joint inventor; all of whom are signing this request

Signature	/Matthew Holmes/
Name	Matthew Holmes

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	13875895
Filing Date:	02-May-2013
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Filer:	Matthew M. Holmes
Attorney Docket Number:	10001-03836 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Statutory or Terminal Disclaimer	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

INTEL-1002
U.S. Patent 9,265,043

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 13875895

Filing Date: 02-May-2013

Applicant/Patent under Reexamination: Brown et al.

Electronic Terminal Disclaimer filed on September 28, 2015

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	23619717
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	28-SEP-2015
Filing Date:	02-MAY-2013
Time Stamp:	14:47:34
Application Type:	Utility under 35 USC 111(a)

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Payment Type	Credit Card
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RAM confirmation Number	1140
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33340 db987757ba9744fbd0fd0d0b59860944183d932d	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30066 aaf6aba95db2833e216627dce81a98ea6019622c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63406		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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NOTICE OF ALLOWANCE AND FEE(S) DUE

89194 7590 10/08/2015
Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

EXAMINER
LA, PHONG

ART UNIT	PAPER NUMBER
2469	

DATE MAILED: 10/08/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	05/02/2013	David L. Brown	10001-03836 US	8260

TITLE OF INVENTION: Dynamic Real-Time Tiered Client Access

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	01/08/2016

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

89194 7590 10/08/2015
Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	05/02/2013	David L. Brown	10001-03836 US	8260

TITLE OF INVENTION: Dynamic Real-Time Tiered Client Access

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	01/08/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
LA, PHONG	2469	370-336000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INTEL-1002
U.S. Patent 9,265,043

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	05/02/2013	David L. Brown	10001-03836 US	8260

89194 7590 10/08/2015

Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

EXAMINER	
LA, PHONG	

ART UNIT	PAPER NUMBER
2469	

DATE MAILED: 10/08/2015

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INTEL-1002
U.S. Patent 9,265,043

Notice of Allowability	Application No. 13/875,895	Applicant(s) BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/21/2015*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-20*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date *9/18/2015* .
5. ☒ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/PHONG LA/ Examiner, Art Unit 2469	/IAN N. MOORE/ Supervisory Patent Examiner, Art Unit 2469

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 9/28/2015 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 8,457,672 has been reviewed and is accepted. The terminal disclaimer has been recorded.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew M. Holmes (Reg. #65,160) on 9/18/2015).

The application has been amended as follows:

Claim 1. (Currently Amended) A method of facilitating wireless data exchange between a first portable client device and a fixed location proximity reader, comprising:

determining a first specified time slot based on synchronization information wirelessly received by [[a]]the first portable client device and priority level data associated with a first class, wherein the first class is associated with

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one or more of the first portable client device and a user of the first portable client device;

assigning the first specific time slot for the first portable client device to wirelessly communicate with a fixed location proximity-based reader device;

determining a change in network traffic;

unassigning, responsive to the change in the network traffic, the first specific time slot to which the first portable client device is assigned to wirelessly communicate with a fixed location proximity reader based on the priority level data associated with the first class associated with one or more of the first portable client device and the user of the first portable client device.

Claim 2. (Previously Presented) The method of claim 1, comprising:

assigning a second specific time slot to the first portable client device, the second specific time slot set according to the first class.

Claim 3. (Previously Presented) The method of claim 1, comprising:

determining a second change in the network traffic, and

assigning, responsive to the second change in network traffic, a second specific time slot to the first portable client device according to the first class.

Claim 4. (Original) The method of claim 1, wherein assigning the first specific time slot comprises:

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masking a bit field of the first client device.

Claim 5. (Original) The method of claim 4, wherein the mask is wirelessly communicated to the first client device.

Claim 6. (Original) The method of claim 2, wherein the first specified time slot and the second specified time slot are on different wireless channels.

Claim 7. (Original) The method of claim 3, comprising:

determining a third change in the network traffic; and

reassigning the first specific time slot to the first client device responsive to the third change in the network traffic.

Claim 8. (Original) The method of claim 1, further comprising:

reassigning the first specific time slot to a second client device in response to a detection that the first client device is unavailable.

Claim 9. (Currently Amended) The method of claim 1, further comprising:

determining that the first client device should switch to a different channel; and

sending a message to the first client device and the first client device, responsive to receiving the message, switching the channel upon which the first client device wirelessly communicates with a fixed location proximity-based reader device.

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Claim 10. (Currently Amended) The method of claim 9, wherein the message includes information identifying the first client device, information identifying the fixed location proximity-based reader device, a designation of a channel and a command to switch to the designated channel.

Claim 11. (Original) The method of claim 9, wherein the determination to switch to the different channel is dependent on at least one of a user associated with the first client device, a class of a user associated with the first client device, a class of the first client device, and a network traffic load in the system.

Claim 12. (Currently Amended) A system for facilitating wireless data exchange between a reader device and a portable client device, comprising:

[[a]]the reader device having a first interface and a second interface, the first interface configured to receive synchronization information on a first channel and the second interface configured to communicate with [[a]]the portable client device on a second channel in accordance with the synchronization information; and

the portable client device configured to wirelessly receive the synchronization information including one or more of information assigning a first specific time slot during which the portable client device can communicate with one or more of the reader device and a network device, and information unassigning, responsive to a change in network traffic, the first specific time slot, the one or more corresponding assignment and unassignment of

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the first specific time slot determined according to priority level data associated with a class, the class associated with ~~the~~ one or more of the portable client device and a user of the portable client device.

Claim 13. (Previously Presented) The system of claim 12, wherein the portable client device is configured to transmit data to one or more of the reader device and the network device during the specific time slot.

Claim 14. (Previously Presented) The system of claim 12, wherein the portable client device is configured to receive data from one or more of the reader device and the network device during the specific time slot.

Claim 15. (Previously Presented) The system of claim 12, wherein the time slot is determined based on a mask applied to a bit field stored in the portable client device, and wherein the mask is wirelessly communicated to the portable client device as part of the synchronization information wirelessly broadcasted by the network device.

Claim 16. (Original) The system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to another client device.

Claim 17. (Original) The system of claim 12, wherein after unassigning the first time slot, the reader device is configured to reassign the first timeslot to the portable client device responsive to another change in the network traffic.

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Claim 18. (Previously Presented) The system of claim 12, wherein the reader device is configured to reassign the timeslot during which the portable client device communicates with the reader device based at least in part on at least one of a user associated with the portable client device, a class of a user associated with the portable client device, a class of the portable client device, and a network traffic load in the system.

Claim 19. (Previously Presented) The system of claim 12, wherein the reader device is further configured to detect the portable client device on the first channel and send a message to the portable client device on the first channel responsive to a determination that the reader device wants to communicate with the portable client device, the reader device capable of wirelessly communicating on the first and the second wireless channels and the portable client device further configured to switch to the second channel responsive to receiving the message.

Claim 20. (Original) The system of claim 19, wherein the message includes information identifying the portable client device, information identifying the reader device, a designation of a channel and a command to switch to the designated channel.

Response to Arguments

3. Applicant's argument, see page 8, filed 07/21/2015, with respect to claim objections has been fully considered and is persuasive. The claim objections have been withdrawn.

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4. Applicant's arguments, see page 8, filed 07/21/2015, with respect to claims 1-20 have been fully considered and are persuasive. The rejection under 35 U.S.C § 112(b) of claims 1-20 have been withdrawn.

5. Applicant's arguments, see pages 9-12, filed 07/21/2015, with respect to claims 1-20 have been fully considered and are persuasive. The rejection on the ground of non-statutory obviousness-type double patenting of claims 1-20 have been withdrawn.

6. Applicant's arguments, see pages 9-11, filed 08/24/2015, with respect to claims 1-22 have been fully considered and are persuasive. The rejection under 35 U.S.C § 103 of claims 1-11, 13-22 have been withdrawn.

Allowable Subject Matter

7. **Amended claims 1, 9-10, 12** and claims 2-8, 11, 13-20 are allowed.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHONG LA whose telephone number is (571)272-2588. The examiner can normally be reached on Monday to Friday 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ian Moore can be reached on 571-272-3085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

INTEL-1002
U.S. Patent 9,265,043

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PHONG LA/

Examiner, Art Unit 2469

INTEL-1002
U.S. Patent 9,265,043

Examiner-Initiated Interview Summary	Application No. 13/875,895	Applicant(s) BROWN ET AL.	
	Examiner PHONG LA	Art Unit 2469	

All participants (applicant, applicant's representative, PTO personnel):

(1) *PHONG LA*. (3)_.

(2) *Matthew M. Holmes (Reg.#65,160)*. (4)_____.

Date of Interview: *21 September 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1 and 12*.

Identification of prior art discussed: *none*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

set forth in Examiner Amendment.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/PHONG LA/ Examiner, Art Unit 2469	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	Art Unit
	PHONG LA	2469

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
H04W4/06; H04W8/005; H04W24/00; H04W48/08; H04W50/00; H04W72/0446; H04W52/0216; H04W52/50; H04W72/04; H04W84/12; H04W84/18; H04W48/10; H04W48/12; H04W48/14; H04W48/16---text search only - see search history printout	3/31/2015; updated - 9/21/2015]	pl; [pl]
EAST (USPAT, USPGPUB, EPO, USOCR, FERS, JPO, DERWENT, IBM_TDB) - see search history printout	3/31/2015; updated - 9/21/2015]	pl; [pl]
Inventor and assignee search in EAST - see search history printout	3/31/2015; updated - 9/21/2015]	pl; [pl]
70/Multiplex Communications (consulted with Ian Moore (SPE	3/31/2015	pl; [pl]

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	see Interference search history printout	9/21/2015	pl

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	**Art Unit**
	PHONG LA	2469

CPC							
Symbol						**Type**	**Version**
H04W		72	/	0446		F	2013-01-01
H04W		52	/	0216		I	2013-01-01
H04W		52	/	50		I	2013-01-01
H04W		12	/	02		I	2013-01-01
H04W		4	/	06		A	2013-01-01
H04W		8	/	005		A	2013-01-01
H04W		24	/	00		A	2013-01-01
H04W		48	/	08		A	2013-01-01
H04W		56	/	00		A	2013-01-01
Y02B		60	/	50		A	2013-01-01
			/				
			/				
			/				
			/				
			/				

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

/PHONG LA/ Examiner.Art Unit 2469	9/21/2015	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/IAN N MOORE/ Supervisory Patent Examiner.Art Unit 2469	09/29/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	**Art Unit**
	PHONG LA	2469

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
370	336	H	0	4	J	3 / 00 (2006.01.01)						
CROSS REFERENCE(S)												
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)											

/PHONG LA/ Examiner.Art Unit 2469	9/21/2015	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/IAN N MOORE/ Supervisory Patent Examiner.Art Unit 2469	09/29/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	**Art Unit**
	PHONG LA	2469

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	17												
2	2	18	18												
4	3	19	19												
6	4	20	20												
7	5														
3	6														
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8	8														
9	9														
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11	11														
12	12														
13	13														
14	14														
15	15														
16	16														

/PHONG LA/ Examiner.Art Unit 2469	9/21/2015	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/IAN N MOORE/ Supervisory Patent Examiner.Art Unit 2469	09/29/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office Part of Paper No. 20150921

INTEL-1002
U.S. Patent 9,265,043

EAST Search History

EAST Search History (Prior Art) /pl/ /pl/ /pl/

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S78	8110	((David near3 Brown) (Fred near3 Hirt)).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 09:57
S79	72	Proxense.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 09:58
S80	1631	(allocat$3 assign$3 allot$3 locat$3 set$4 designat$3 giv$3 appoint$3) near25 ((Second secondary another other alternative) near3 ((time interval period duration ts) near3 (channel RF slot bandwidth throughput resource freq frequency spectrum))) near25 ((first primary anchor main serving) near3 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:22
S81	1107	S80 and ((quality near3 service) (quality near3 class) qos QOC priority class level)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:22
S82	568	S81 and ((traffic load data packet frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:22
S83	58	(((reassign$4 re$1allocat$4) near5 (time near3 (slot interval)) near15 ((another other second different) near5 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver destination agent consumer customer provider device equipment station terminal cell$1phone	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:24

		mobil$1phone smart$1phone pda phone telephone ms))))				
S84	4	S78 and S79 and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:24
S85	8	S82 and S83	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:26
S86	11	H04W4/06.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:27
S87	7	H04W8/005.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:27
S88	26	H04W24/00.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:27
S89	21	H04W48/08.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:27
S90	0	H04W48/10.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:28
S91	4	H04W48/12.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:28
S92	0	H04W48/14.cpc. and S82	US-PGPUB; USPAT; USOCR;	OR	ON	2015/09/21 10:28

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S93	15	H04W48/16.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:28
S94	12	H04W52/0216.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:28
S95	36	H04W72/04.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:29
S96	52	H04W72/0446.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:29
S97	9	@pd<"20060106" and S96	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:30
S98	4	@pd<"20060106" and S95	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:30
S99	4	@pd<"20060106" and S88	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:30
S100	8	@pd<"20060106" and S89	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:30
S101	12	H04W52/0216.cpc. and S82	US-PGPUB;	OR	ON	2015/09/21

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:31
S102	8	H04W12/02.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:32
S103	5	H04W52/50.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:32
S104	8	H04W56/00.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:33
S105	16	y02B60/50.cpc. and S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/21 10:33

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S106	710	((allocat$3 assign$3 allot$3 locat$3 set$4 designat$3 giv$3 appoint$3) near25 ((Second secondary another other alternative) near3 ((time interval period duration ts) near3 (channel RF slot bandwidth throughput resource freq frequency spectrum))) near25 ((first primary anchor main serving) near3 (subscriber UE WTRU client user caller mobile member target end$1point host sender receiver agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms))).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2015/09/21 10:22
S107	12935	(((quality near3 service) (quality near3 class) qos QOC priority class level) near25 ((traffic load data packet frame) near5 (chang$3 modify$5 modif$3 increas$3 decreas$3 vary$3))).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2015/09/21 10:23
S108	14	(((reassign$4 re$1allocat$4) near5 (time near3 (slot interval)) near15 ((another other second different) near5 (subscriber UE	US-PGPUB; USPAT;	OR	ON	2015/09/21 10:24

		WTRU client user caller mobile member target end$1point host sender receiver destination agent consumer customer provider device equipment station terminal cell$1phone mobil$1phone smart$1phone pda phone telephone ms)))).clm.	UPAD			
S109	1	S106 and S107	US-PGPUB; USPAT; UPAD	OR	ON	2015/09/21 10:25

9/28/2015 4:19:43 PM
C:\Users\pla\Documents\EAST\Workspaces\13875895.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13875895	BROWN ET AL.
	Examiner	Art Unit
	PHONG LA	2469

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	03/31/2015	09/21/2015							
1	1	✓	=							
2	2	✓	=							
4	3	✓	=							
6	4	✓	=							
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3	6	✓	=							
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8	8	✓	=							
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13	13	✓	=							
14	14	✓	=							
15	15	O	=							
16	16	✓	=							
17	17	✓	=							
18	18	✓	=							
19	19	✓	=							
20	20	O	=							

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	05/02/2013	David L. Brown	10001-03836 US	8260

89194 7590 10/23/2015

Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

EXAMINER
LA, PHONG

ART UNIT	PAPER NUMBER
2469	

NOTIFICATION DATE	DELIVERY MODE
10/23/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net

PTOL-90A (Rev. 04/07)

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Application No. : 13875895
Applicant : Brown
Filing Date : 05/02/2013
Date Mailed : 10/23/2015

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given two (2) months from the mail date of this Notice within which to respond. This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED.

See attachment(s).

A copy of this notice MUST be returned with the reply. Please address response to "Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450".

/Russell Lucas/
Publication Branch
Office of Data Management
(571) 272-4200

IDENTIFICATION OF DRAWING DEFICIENCIES

- ☐ There is a hole or the image thereof within the illustration. FIG(s)
- ☐ The illustration is penetrated or traversed by a solid or broken line that is not intended to be part of the drawing, such as a dark line caused by a flaw in the copying process. FIG(s)
- ☐ An ink stamp or the image thereof obscures part of the illustration. FIG(s)
- ☐ The drawing is marred by black smudges, obliterations, or fax/copier marks (for example, speckles or dots in a substantial portion of the drawing). FIG(s)
- ☐ Figure numbers are duplicated or missing. FIG(s)
- ☐ Drawing sheet or figure is missing. FIG(s)
- ☐ Numbers, letters, or reference characters in the drawing have been crossed out or are illegibly handwritten. FIG(s)
- ☐ The character of the lines, numbers, and letters is poor. FIG(s)
- ☐ The drawing's background shows that the original drawing was made on graph paper or other paper with a pattern or decoration. FIG(s)
- ☐ The FIG. number label is placed in a location that causes the drawing to be read upside down. FIG(s)
- ☐ Data, a reference number, or part of the drawing is truncated or missing, or a lead line has no reference number. FIG(s)
- ☐ The drawing and/or the FIG. label contain(s) foreign language. FIG(s)
- ☐ This utility application contains a photograph of a view that is capable of being illustrated as a line drawing. FIG(s)
- ☐ A petition under 37 CFR 1.84(a)(2) to accept color drawings has been granted, but the brief description of the drawings in the specification does not contain (or has not been amended to contain) the paragraph required by 37 CFR 1.84(a)(2)(iii).
- ☐ This reissue application contains added and/or amended drawings that are not labeled as “New” or “Amended” or “Canceled” as required by 37 CFR 1.173(b)(3). FIG(s)
- ☐ This Design reissue application contains a drawing that is labeled as “Canceled” but is not surrounded by brackets, or a drawing that is surrounded by brackets but is not labeled as “Canceled.” See 37 CFR 1.173(b)(3). FIG(s)
- ☐ OTHER:
- ☒ COMMENTS:
  Drawings filed 08/12/2013 contains a replacement sheet for FIG(s) 2 but did not include FIG(s) 1. Per 37 CFR 1.121(d) the replacement sheet shall include all of the figures appearing on the immediate prior version, even if only one figure is being amended.

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANTS:	David L. Brown et al.
APPLICATION NO:	13/875,895
FILING DATE:	May 2, 2013
TITLE:	Dynamic Real-Time Tiered Client Access
EXAMINER:	Phong La
GROUP ART UNIT:	2469
ATTY. DKT. NO:	10001-03836 US
CONFIRMATION NO:	8260

CERTIFICATE OF EFS-WEB TRANSMISSION

Pursuant to 240 OG 45 and the Legal Framework For EFS-Web, I hereby certify that this follow-on correspondence is being officially submitted through the USPTO EFS-Web system from the Pacific Time Zone of the United States on the local date shown below:

Dated: January 5, 2016 By: /Paige Alsbury/

Paige M. Alsbury, Reg. No. 72,965

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Sir:

Responsive to the Notice to File Corrected Application Papers dated October 23, 2015, received in the above-identified application,

☒ Enclosed are:

☒ As instructed a copy of Notice to File Corrected Application Papers dated October 23, 2015; and

☒ replacement drawing of Figures 1 and 2, which per 37 CFR 1.121(d) the replacement drawings sheet includes all figures appearing on the immediate prior version.

RESPONSE TO NOTICE TO CORRECTED APPLICATION PAPERS

Additionally, a one-month extension of time is requested and the fee for which is submitted herewith.

No new matter has been added.

Respectfully submitted,
DAVID L. BROWN ET AL.

Dated: January 5, 2016 By: /Paige Alsbury/

Paige M. Alsbury, Reg. No. 72,965
Attorney for Applicants
PATENT LAW WORKS LLP
201 South Main Street, Suite 250
Salt Lake City, UT 84111
Tel.: (801) 258-9837
Fax: (801) 355-0160
Email: patents@patentlawworks.net

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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89194 7590 10/23/2015

Patent Law Works/Proxense
Greg Sueoka
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Salt Lake City, UT 84111

EXAMINER
LA, PHONG

ART UNIT	PAPER NUMBER
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docketing@patentlawworks.net
patents@patentlawworks.net

PTOL-90A (Rev. 04/07)

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Application No. : 13875895
Applicant : Brown
Filing Date : 05/02/2013
Date Mailed : 10/23/2015

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See attachment(s).

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/Russell Lucas/
Publication Branch
Office of Data Management
(571) 272-4200

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- ☐ The illustration is penetrated or traversed by a solid or broken line that is not intended to be part of the drawing, such as a dark line caused by a flaw in the copying process. FIG(s)
- ☐ An ink stamp or the image thereof obscures part of the illustration. FIG(s)
- ☐ The drawing is marred by black smudges, obliterations, or fax/copier marks (for example, speckles or dots in a substantial portion of the drawing). FIG(s)
- ☐ Figure numbers are duplicated or missing. FIG(s)
- ☐ Drawing sheet or figure is missing. FIG(s)
- ☐ Numbers, letters, or reference characters in the drawing have been crossed out or are illegibly handwritten. FIG(s)
- ☐ The character of the lines, numbers, and letters is poor. FIG(s)
- ☐ The drawing's background shows that the original drawing was made on graph paper or other paper with a pattern or decoration. FIG(s)
- ☐ The FIG. number label is placed in a location that causes the drawing to be read upside down. FIG(s)
- ☐ Data, a reference number, or part of the drawing is truncated or missing, or a lead line has no reference number. FIG(s)
- ☐ The drawing and/or the FIG. label contain(s) foreign language. FIG(s)
- ☐ This utility application contains a photograph of a view that is capable of being illustrated as a line drawing. FIG(s)
- ☐ A petition under 37 CFR 1.84(a)(2) to accept color drawings has been granted, but the brief description of the drawings in the specification does not contain (or has not been amended to contain) the paragraph required by 37 CFR 1.84(a)(2)(iii).
- ☐ This reissue application contains added and/or amended drawings that are not labeled as “New” or “Amended” or “Canceled” as required by 37 CFR 1.173(b)(3). FIG(s)
- ☐ This Design reissue application contains a drawing that is labeled as “Canceled” but is not surrounded by brackets, or a drawing that is surrounded by brackets but is not labeled as “Canceled.” See 37 CFR 1.173(b)(3). FIG(s)
- ☐ OTHER:
- ☒ COMMENTS:
  Drawings filed 08/12/2013 contains a replacement sheet for FIG(s) 2 but did not include FIG(s) 1. Per 37 CFR 1.121(d) the replacement sheet shall include all of the figures appearing on the immediate prior version, even if only one figure is being amended.

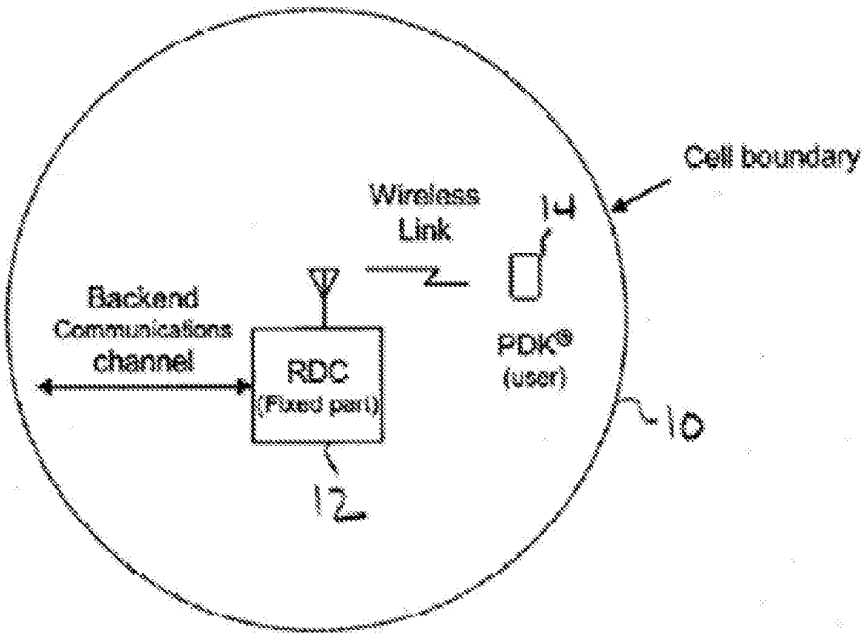


FIGURE 1

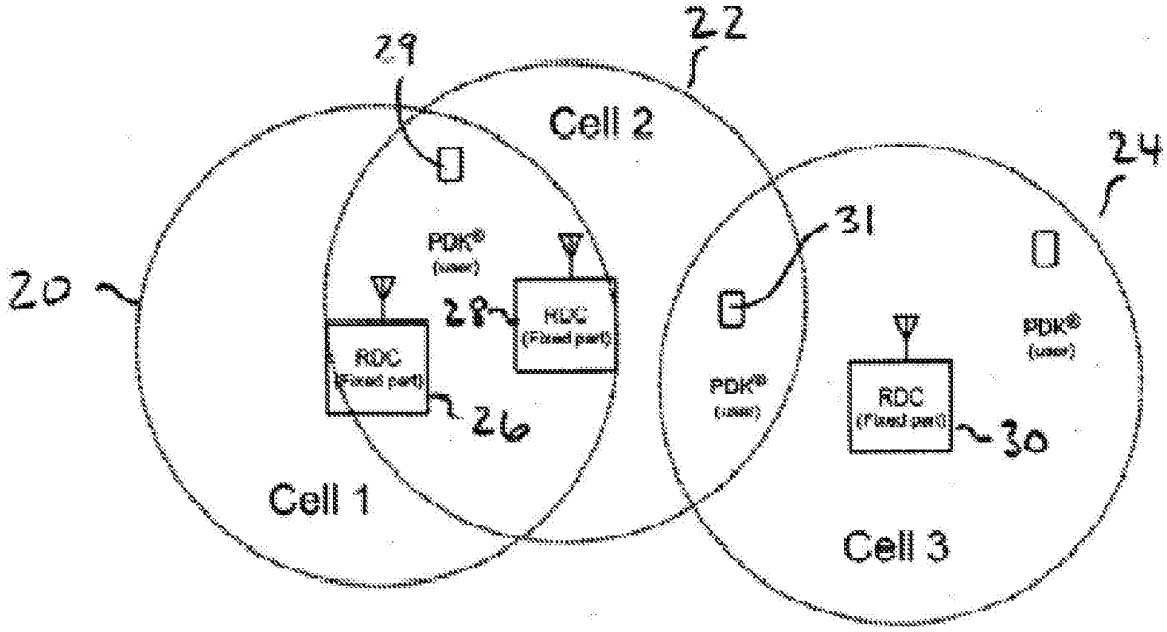


FIGURE 2

INTEL-1002
U.S. Patent 9,265,043

Electronic Patent Application Fee Transmittal

Application Number:	13875895
Filing Date:	02-May-2013
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Filer:	Paige McDede Alsbury/Cynthia Kersey
Attorney Docket Number:	10001-03836 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
		Total in USD ($)		**100**

Electronic Acknowledgement Receipt

EFS ID:	24532820
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	05-JAN-2016
Filing Date:	02-MAY-2013
Time Stamp:	17:18:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$100
RAM confirmation Number	3939
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	03836US2016-01-05-ResponetoNoticetoFileCorrectedPapers.pdf	667158 dbe0e1d7827824c04aa5dd7a570254bb075652fa	no	5
Warnings:					
Information:					
2	Drawings-only black and white line drawings	03836US2016-01-05-ReplacementDrawings.pdf	66502 e9882b87d225732db54a601198cf3fc5b5c55e44	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30621 b6f266c5b2715d13fcd7623c0dcaf044aa80e38f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	764281		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INTEL-1002
U.S. Patent 9,265,043

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
13875895	02-May-2013	David Brown	10001-03836 US	8260

TITLE OF INVENTION :

Dynamic Real-Time Tiered Client Access

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2469	336000	PHONG LA

Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
$480	$0	$480	08-Jan-2016	$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
89194 Patent Law Works/Proxense Greg Sueoka 201 South Main Street, Suite 250 Salt Lake City UT 84111 UNITED STATES 8012589820 docketing@patentlawworks.net	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

◉ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

○ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:

☒ Issue Fee	☐ I authorize USPTO to apply my previously paid issue fee to the current fees due
☐ Publication Fee	☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____
☐ Advance Order - # of copies _____	☐ If i**n addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number _____ . The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed

NOTE: If no name is listed, no name will be printed
For printing on the patent front page, list to be displayed as entered

1. PATENT LAW WORKS LLP
2.
3.

5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
Proxense, LLC	Bend		united states	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Paige Alsbury/	**Date**	01-07-2016
Name	Paige McDede Alsbury	**Registration Number**	72965

WEB IFEE 1.0

INTEL-1002
U.S. Patent 9,265,043

Electronic Patent Application Fee Transmittal

Application Number:	13875895
Filing Date:	02-May-2013
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Filer:	Paige McDede Alsbury
Attorney Docket Number:	10001-03836 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility Appl Issue Fee	2501	1	480	480
Publ. Fee- Early, Voluntary, or Normal	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**480**

Electronic Acknowledgement Receipt

EFS ID:	24561917
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	07-JAN-2016
Filing Date:	02-MAY-2013
Time Stamp:	16:27:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$480
RAM confirmation Number	4525
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	45743 818cd49943374cdb168bd2b9f699315e6b432e55	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32163 31e878466af2e5ecbdb120ff61c24b30a3daf546	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	77906		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	02/16/2016	9265043	10001-03836 US	8260

89194 7590 01/27/2016

Patent Law Works/Proxense
Greg Sueoka
201 South Main Street, Suite 250
Salt Lake City, UT 84111

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 181 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

David L. Brown, Jupiter, FL;
Fred S. Hirt, Brookfield, IL;
Proxense, LLC, Bend, OR

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
13/875,895	05/02/2013	David L. Brown	10001-03836 US	117527

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 07/24/2020 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.
NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Greg T. Sueoka/
Name:	Greg T. Sueoka
Registration Number:	33800

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	David L. Brown
PATENT NO:	9,265,043
ISSUE DATE:	February 16, 2016
APPLICATION NO:	13/875,895
FILING DATE:	May 2, 2013
TITLE:	Dynamic Real-Time Tiered Client Access
EXAMINER:	Phong La
GROUP ART UNIT:	2469
ATTY. DKT. NO:	10001-03836 US
CONFIRMATION NO:	8260

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on the date below.

Date: August 4, 2020 By: /Greg T. Sueoka/

Greg T. Sueoka, Reg. No. 33,800

MAIL STOP 16
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

NOTIFICATION OF LOSS OF SMALL ENTITY STATUS UNDER 37 CFR 1.27(g)(2) AND PAYMENT OF DEFICIENCY IN FEES

Sir/Madam:

On or about June 11, 2020, the undersigned was made aware of the above-identified property having been licensed to a large entity since August 5, 2019. The undersigned is hereby

taking action to rectify the situation and the pay the fees associated with this application as a large entity. The amount of additional fees to be paid as a large entity are as follows:

Date Paid	Fee Code	Description	Amount Paid	Undiscounted Fee	Amount Owed
08-06-2019	2551	3.5 year maintenance fee – small entity	$800	$1600	$800
				Total Amount Owed:	$800

The Director is hereby authorized to charge the above-identified fees totaling $800 to Deposit Account No. 603148.

Respectfully submitted,

PROXENSE, LLC

Dated: August 4, 2020 By: /Greg T. Sueoka/

Greg T. Sueoka, Reg. No. 33,800
Attorney for Applicant
PATENT LAW WORKS LLP
310 East 4500 South, Suite 400
Salt Lake City, UT 84107
Tel.: (801) 258-9821
Fax: (801) 355-0160
Email: gsueoka@patentlawworks.net

GTS/kdl

Electronic Acknowledgement Receipt

EFS ID:	40192243
Application Number:	13875895
International Application Number:	
Confirmation Number:	8260
Title of Invention:	Dynamic Real-Time Tiered Client Access
First Named Inventor/Applicant Name:	David L. Brown
Customer Number:	89194
Filer:	Greg T. Sueoka
Filer Authorized By:	
Attorney Docket Number:	10001-03836 US
Receipt Date:	04-AUG-2020
Filing Date:	02-MAY-2013
Time Stamp:	18:00:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions	03836US_20200804_NoticeofLossofSmallEntityStatus.pdf	23104 2c5fe84a55110401835742 6ae9cba5bd45d9774c	no	2

Warnings:

INTEL-1002
U.S. Patent 9,265,043

Information:	
Total Files Size (in bytes):	23104

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/875,895	05/02/2013	David L. Brown	10001-03836 US	8260

89194 7590 10/09/2020

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
LA, PHONG	

ART UNIT	PAPER NUMBER
2469	

NOTIFICATION DATE	DELIVERY MODE
10/09/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

In re Patent No. 9,265,043	:	
Issue Date: February 16, 2016	:	
Application No. 13/875,895	:	NOTICE
Filed: May 2, 2013	:	
Attorney Docket No: 10001-03836 US	:	

This is a notice regarding the request for acceptance of a fee deficiency submission under 37 CFR 1.28(c) filed August 4, 2020.

The Office no longer investigates or rejects original or reissue applications under 37 CFR 1.56. 1098 Off. Gaz. Pat. Office 502 (January 3, 1989). Therefore, nothing in this Notice is intended to imply that an investigation was done.

The fee deficiency submission under 37 CFR 1.28(c) is hereby ACCEPTED.

This patented file is no longer entitled to small entity status. Accordingly, all future fees paid must be paid at the undiscounted rate.

Inquiries related to this communication should be directed to the Paralegal Specialist Debra Wyatt at (571) 272-3621.

/DEBRA WYATT/
Paralegal Specialist, OPET