(54) Title: SYSTEM AND METHOD FOR IDENTIFYING GOODS AND SERVICES IN A MOBILE ENVIRONMENT

(57) Abstract: The present invention provides both a system and method for locating a desired good, service, or user in a mobile environment.

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SYSTEM AND METHOD FOR IDENTIFYING
GOODS AND SERVICES IN A MOBILE ENVIRONMENT

Cross Reference to Related Applications

This application claims priority to United States provisional patent application Serial No. 60/186,471 and United States provisional patent application Serial No. 60/227,987, both of which are relied on and incorporated herein by reference.

Background of the Invention

Location and tracking systems using GPS or signal triangulation from wireless messaging towers are known in the art. GPS is a satellite-based radionavigation system developed and operated by the U.S. Department of Defense (DOD). GPS permits land, sea, and airborne users to determine their three-dimensional position, velocity, and time 24 hours a day, in all weather, anywhere in the world with a precision and accuracy far better than other radionavigation systems available today.

To date, GPS and wireless information delivery have been relatively independent, unrelated technologies. However, there is a need for an automated method in which GPS is used to determine the locations of users, and, based on location, information can be transmitted to one or more users in the determined locality via a wireless protocol to a wireless receiving device.

Answering this need, the system of the present invention interfaces location and wireless communication technologies to target intended message recipients in a geographic locality and to forward a message to one or more targeted recipients.
Summary of the Invention

The present invention provides a system and method for identifying and facilitating transactions for users, goods, services, and business opportunities. Utilizing triangulation-based location systems and wireless messaging capabilities providers of goods and services, potential consumers, and other objects equipped with a location-identifying device, such as a GPS communication device, may be selectively targeted based on a service request or other query.

In one embodiment of the present invention, a location provider service receives a request for a good or service, associates that request with a parameter, such as a geographic or time-dependent limitation, calculates a geographic locality from the parameter, determines whether the request can be met within the geographic locality, and communicates the request to a provider with a wireless communication device to meet the request.

Another aspect of the present invention is the ability of a good or service provider to broadcast the availability of a good or service to a location service provider, and based on pre-selected criteria, the location service provider may notify a potential consumer within a geographic locality of the available good or service.

In another embodiment of the present invention a location service provider receives triangulated position data from a wireless communication device of a good or service provider, and when the good or service provider enters a pre-determined geographic boundary a notification is provided to a pre-selected destination that desires notification of the provider entering the geographic locality.

Similarly, in another embodiment of the present invention a notification may be provided when a good or service provider is exiting a pre-determined geographic boundary.
Another aspect of the present invention is a system for identifying the location-based good or service comprising a remote communication device that broadcasts triangulated position data to a position database, a request handler for receiving a request for a good or service, and a notifier for notifying a good or service provider within a pre-determined distance of the remote communication device of the request.

In an embodiment of the invention, a remote communication device includes both a location broadcaster, such as a GPS unit, and wireless messaging capabilities. In one embodiment, the communication device includes function keys for one-touch good and service requests.

Brief Description of the Drawings

FIG. 1 is a schematic relational diagram of the architecture of the system components of an exemplary embodiment of the present invention.

FIG. 2 is a block diagram of the customer entry configuration in an exemplary embodiment of the present invention.

FIG. 3 is a block diagram of the expanded customer entry and subscriber entry configuration in an exemplary embodiment of the present invention.

FIG. 4 is a process relational flow diagram of initial subscriber access processing in an exemplary embodiment of the present invention.

FIG. 5 is a process relational flow diagram of subsequent initial access processing in an exemplary embodiment of the present invention.

FIG. 6 is a relational block diagram of the processing of a good or service request in an exemplary embodiment of the present invention.

FIG. 7 is a top plan view of an exemplary wireless communication device of the present invention.
FIG. 8 is a schematic illustration of a location scenario for locating the closest qualified user in an exemplary embodiment of the present invention.

FIG. 9 is a schematic illustration of a broadcasting location scenario in an exemplary embodiment of the present invention.

FIG. 10 is a schematic illustration of a scenario for a user entering a geo-boundary in an exemplary embodiment of the present invention.

FIG. 11 is a schematic illustration of a scenario for a user exiting a geo-boundary in an exemplary embodiment of the present invention.

FIG. 12 is a schematic illustration of a scenario for time and location based events according to an exemplary embodiment of the present invention.

FIG. 13 is a schematic illustration of a scenario for network/service interaction according to an exemplary embodiment of the present invention.

FIG. 14 is a schematic illustration of a scenario for progressive tracking of a user according to an exemplary embodiment of the present invention.

**Detailed Description of the Invention**

The present invention interconnects triangulation-based location and wireless communications technologies, enabling messages or data to be routed to the wireless device of a targeted user in a defined locality. The present invention also enables a targeted user, equipped with a wireless communication device, to receive, process, and respond to a wireless message. While one embodiment of the present invention is described with respect to GPS-based location systems, those of ordinary skill in the art will appreciate that wireless messaging tower triangulation, and other triangulation-based location methods may be employed.

In the present invention, a user, i.e., a person or object with a wireless communication device possessing GPS capability, is located via a GPS data query. The position of the user
can be calculated relevant to a defined locality, and the position information can be stored as needed. The wireless communication device may include a Personal Identifier & Assistant (PIA), an Onboard device, a RIM pager sitting on a GPS cradle, a Palm unit, Nokia 9000 wireless phone with a GPS embedded battery, and GPS-enabled cellular phones.

A user is preferably notified of a business opportunity, good, or service, via a wireless message from a location service provider. The user can acknowledge the message and accept or reject the opportunity. With a tracking service, an object's location can be determined via the GPS signals and the location information delivered to the customer.

Referring to FIG. 1, the support systems 100 contain the necessary profile information and processing capability to enable the necessary transaction. The support systems 100 include the following components: a directory server 101, a customer care center (CCC) 102, a secure web server 103, call center agents 104, voice processor 105, POP3 mail server 125, customer relationship management (CRM) system 107, accounting system 115 and billing system 108, subject database 129, link 120 to banks, credit card processors, and payment systems, broadcasting systems, and a predictive matching system.

A directory server 101 manages the customer and subscriber requests. The directory server 101 organizes, holds and maintains information about objects until that information is required by the system. The directory server 101 then makes that information available to the system according to predetermined requirements.

The directory server 101 holds in a hierarchical model all the necessary information about the customers, subscribers, devices, personal profiles, current account status, permissions, and access controls. The directory server 101 manages the login and access by customers and subscribers, regardless of the access method. The directory server 101 also checks current account status, and generates warnings and messages. The directory server 101 applies the access controls, and allows self-provisioning of the system.

A customer care center (CCC) 102 configures the subscriber screen and messages presented to the subscriber based on the information stored in the directory server 101. A voice processor 105 does the same if access is by standard wireline telephone or wireless handset. A POP3 server 125 accesses the directory server 101 to retrieve e-mail and e-mail
forwarding addresses. An accounting system 115 posts the account status to the directory server 101. Service can be denied due to unpaid bills or violations of Service Level Agreements (SLA.)

The directory server 101 does not maintain information of a business nature about the customers and subscribers. This information is maintained in customer relationship management (CRM) system 107.

The directory server 101 preferably does not maintain the GPS positioning data for the subscriber devices. This is maintained in subject database 129.

The customer care center CCC 102 is a website. The CCC 102 manages the customer and subscriber interface with the support systems 100 of the present invention. A user can access the CCC 102 from anywhere using the world wide web (WWW) 150 from a PC, notebook, wireless web handset, PDA, or similar device. Assuming proper permissions, a user can view account status, check his or her usage statistics and limitations, set preferences such as e-mail and voice-mail forwarding addresses, self provision some services, or request a connection to a customer care agent.

The CCC website 102 is a high-availability service.

The secure web server 103 manages secure connections across an industry standard firewall 112 when a customer or subscriber makes a request which requires encrypted security to process. Such requests include viewing account status, checking usage statistics and limitations, self provisioning services, or on-line shopping. The secure web server 103 also manages the interface of extranets 153 to the support systems 100. The secure web server 103 also includes user requests to make changes to their service or add authorized users.

The secure web service 103 is a high-availability service.

Customer care agents 104 are customer care representatives who handle customer and subscriber requests which cannot be automated. The agents 104 can access the information in the directory server 101 and, with permission, update the directory server 101. The agents 104 can open new accounts, make changes to existing accounts, and access the CRM system 107 and accounting information 115.
Voice processor 105 manages customer access which comes through a voice-based medium, such as a normal telephone call from the public switched telephone network (PSTN) 151, or a wireless handset. The voice processor 105 manages many of the same requests as the web service 102. It provides the text-to-speech (TTS) conversions necessary to process e-mail to a voice mailbox. The voice processor 105 is also able to process certain voice commands from the subscriber.

The voice processor 105 is a high-availability service.

The POP3 mail server 125 receives the positioning messages from a server provider 122 and delivers the messages to the subject database 129 for posting. The mail server 125 holds inbound e-mail messages to the subscribers based on the mailbox address held in directory server 101 until they are retrieved. The POP3 server 125 sends outbound messages to the subscriber device when there is a service opportunity. The POP3 server 125 can deliver e-mail messages to the voice processor 105 for TTS conversion for deposit in a voice mailbox. The POP3 server 125 also supports the polling service to retrieve subscriber messages from other mailboxes.

The mail server 125 is a high-availability service.

The customer relationship management (CRM) system 107 holds the customer files, e.g., the information about the businesses and individuals who are subscribers of the respective service provider 122. CRM 107 keeps track of the sales personnel, the sales process, territories, vertical markets, customer relationships, commission schedules, etc. CRM 107 also keeps track of the provisioning order process when devices must be configured and delivered to new customers or when existing customers require additional devices.

The accounting system 115 and billing system 108 record the billable information about the customers and subscribers and generate necessary invoices. The accounting system 115 and billing system 108 also keep track of the subscriber account status and notify the directory server 101 when service should be denied.

The subject database 129 keeps track of the position of all devices in the field based on latitude, longitude, and timestamp information. The information is received as a wireless
e-mail message by the POP3 mail server 125 approximately every two minutes, which must then deliver the information contained in the messages to the subject database 129. The subject database 129 is the source of the current location information for a subscriber and device when requested by the directory server 101.

The payment system 120 supports wireless-enabled card readers, debiting of a specified account, and the like, to enable immediate and direct payment for a good or service.

Referring to Fig. 2, the directory server 101 manages a number of relationships between entries in the directory. When the customer is an entity with a number of subscribers, there is a "parent/child" relationship from the directory server 101 perspective.

A single customer entry 200, such as an organization, business, corporation, government entity, etc., has a "parenting" relationship with a number of subscribers 217.

For example, a limousine company might buy the service of the present invention on some sort of payment method, such as a monthly service fee or usage based. The limousine company might also have licensed and installed the system of the present invention for its own use, in which case the accounting and billing features would be different, but the way the service functions would remain the same.

In this example, the customer 200, the limousine service, has a number of limousines available and a number of drivers for those limousines. The drivers, which are employees or contractors to the limousine company, are called subscribers 217.

There are a number of forms this customer-to-subscriber relationship may take. These include: (a) all subscribers have the same services as dictated by the customer, and the customer is responsible for the bill, (b) all subscribers have the same services as dictated by the customer, and the subscriber is responsible for the bill, and (c) all subscribers have the same basic services as dictated by the customer, and the customer is responsible for the basic service bill, but subscribers can add services at their own option and are responsible for the incremental bill.

Those of ordinary skill in the art will appreciate that there may be a number of other possible combinations. A "link" or a "reference" must be maintained between the multiple subscribers 217 and the single customer 200.
The directory server 101 (Fig. 1) must contain an entry for each customer, containing customer information 202 including, for example, the data set forth in Table 1:

**Table 1**

<table>
<thead>
<tr>
<th>5</th>
<th>customerName</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>customerReferenceCode</td>
</tr>
<tr>
<td>10</td>
<td>accountID</td>
</tr>
<tr>
<td></td>
<td>accountStatusIndicator</td>
</tr>
<tr>
<td></td>
<td>accountReferenceCode</td>
</tr>
<tr>
<td></td>
<td>telephoneNumber</td>
</tr>
<tr>
<td></td>
<td>facsimileTelephoneNumber</td>
</tr>
<tr>
<td></td>
<td>tollFreeTelephoneNumber</td>
</tr>
<tr>
<td></td>
<td>mobileTelephoneNumber</td>
</tr>
<tr>
<td></td>
<td>pagerNumber</td>
</tr>
<tr>
<td>15</td>
<td>alternateContactNumber</td>
</tr>
<tr>
<td></td>
<td>gyspiMailAddress</td>
</tr>
<tr>
<td></td>
<td>alternateMailAddress</td>
</tr>
<tr>
<td></td>
<td>mailForwardingAddress</td>
</tr>
<tr>
<td></td>
<td>classOfService</td>
</tr>
<tr>
<td>20</td>
<td>serviceAvailability</td>
</tr>
<tr>
<td></td>
<td>serviceProvided</td>
</tr>
<tr>
<td></td>
<td>member</td>
</tr>
<tr>
<td></td>
<td>actionCode</td>
</tr>
<tr>
<td></td>
<td>brandedGroup</td>
</tr>
<tr>
<td>25</td>
<td>billingResponsibility</td>
</tr>
<tr>
<td></td>
<td>locationInformation</td>
</tr>
<tr>
<td></td>
<td>salesReferenceCode</td>
</tr>
<tr>
<td></td>
<td>salesperson</td>
</tr>
<tr>
<td></td>
<td>seeAlso</td>
</tr>
<tr>
<td>30</td>
<td>username</td>
</tr>
<tr>
<td></td>
<td>password</td>
</tr>
</tbody>
</table>

The following are directory service specific attributes:
uniqueIdentifier (uid)
userCertificate, binary (only required if X.509 certificates are used)
creatorsName
createTimeStamps
modifiersName
modifyTimeStamps

The directory entry for a customer 200 supports capability to determine the customer's information 202. The customer directory entry 200 also supports self-provisioning by the customer of selected services, features, and preferences 215.
Referring to Fig. 3, a subscriber 204 may be one of many employees or contractors 217 of a customer 200. A subscriber may also be a customer 200, as would be the case when an owner-operator of a single limousine signs up for service from a particular service provider (or other licensed service provider.)

When the subscriber 204 utilizes multiple devices 208 and 210 or has permitted additional users of the account, there are additional parent/child relationships for the subscriber 204 from the directory 101 perspective.

The directory 101 contains subscriber information 206 that includes data set forth in Table 2:

```
| subscriberName       |
| customerName         |
| customerReferenceCode|
| accountID            |
| accountStatusIndicator|
| accountReferenceCode |
| telephoneNumber      |
| facsimileTelephoneNumber|
| tollFreeTelephoneNumber|
| mobileTelephoneNumber|
| pagerNumber          |
| alternateContactNumber|
| gypsyMailAddress     |
| alternateMailAddress |
| mailForwardingAddress|
| classOfService       |
| serviceAvailibility  |
| serviceProvided      |
| device               |
| deviceID             |
| deviceStatus         |
| member               |
| actionCode           |
| brandedGroup         |
| billingResponsibility|
| locationInformation  |
| salesReferenceCode   |
| salesperson          |
| seeAlso              |
| locationInformation  |
| personalProfile      |
| preferredLanguage    |
| subscriberServices   |
```
The following are directory service specific attributes:
uniqueIdentifier (uid)
userCertificate, binary (only required if X.509 certificates are used)
creatorsName
createTimeStamp
modifiersName
modifyTimeStamp

The subscriber directory entry 204 supports self-provisioning by the subscriber 200 of selected services, features and preferences 215.

The directory entry for a subscriber 200 supports system capability to determine the subscriber's information 206. This is particularly important when processing of a system request is dependent on that information 206.

Selected subscriber attributes include account status, device and device ID, device status, forwarding, preferred language preferences, branding support, digital signatures and certificates, directory administration, creation and maintenance of directory entries, and services and groups administration.

The account status system requires a verification or validation 117 (Fig. 1) of customer or subscriber account status with the intent of controlling service to a subscriber who is delinquent with payment or has breached some other provision of the Service Level Agreements (SLA.)

Accounting records are not part of the directory. They are maintained as part of the accounting system 115. The account status system makes account status information available to the directory as required based on its accounting cycle and its terms for disallowing service.
The account status parameter is one of the first things verified upon receipt of a message to a subscriber or a subscriber login attempt.

Device and device ID are where the information about a subscriber device(s) 210 is maintained. The service provider or subscriber sets up the subscriber devices 210 with device and device ID. The system of the present invention determines what type of communication the subscriber can receive based upon the device type.

Device status is where the subscriber advises the system that he or she is active (seeking assignments), busy (answering a service request), standby (temporarily unavailable), or off-duty (unavailable.)

The forwarding system supports the capability for subscribers to elect certain forwarding services and customize the parameters (settings) at any particular time.

If forwarding is a subscriber feature, at least one value in the appropriate form may be required to be present in each forwarding address attribute (a default forwarding address).

A language attribute enables support for various languages.

Preferences includes a variety of preselected settings. Examples include the current setting for a desirable service area or excluded service area.

Branding support enables a service provider to deliver certain logos or messages to the subscriber screen or voice mailbox at login based on the branded value in the directory entry.

The directory schema also contains the necessary attributes to support digital signatures and certificates for applications such as electronic commerce which require authentication.

The directory server 101 also supports its administration by permitted parties. All individuals, systems, or applications which have administrative access to the directory must have an entry in the directory server 101. This is an administrative entry separate from an entry which exists when the individual is also a subscriber. The directory entry controls administration of the directory server 101 itself, but not subscriber configuration of services, features, or preferences.
Administrators, including persons or applications, create and maintain the directory structure. An administrator may have permission to modify the directory structure and/or its schema. Administrators create the initial entries in the directory, and maintain some or all of the information about the entry. They are also responsible for general system administration, reports, log files, and auditing.

Accordingly, the directory server 101 supports remote administration by authorized persons and applications.

The directory server 101 supports creation and maintenance of directory entries for customers and subscribers by the service provider. Thus, when a new customer account or subscriber account is created, the necessary entry (or entries) are also created in the directory. Preferably, the provisioning person or application has an administrative entry in the directory.

The directory server 101 supports the configuration of services and groups. When a new service, class of service, feature, etc., is created, a necessary entry (or entries) is also created in the directory server 101.

Referring again to Fig. 1, the CCC web site 102 manages customer and subscriber interface with the support systems of the present invention.

Based on information held in the directory server 101, the CCC web application 102 (a) determines if the login attempt is from a valid subscriber or customer, determines the subscriber or customer account status, (b) generates a message in response to the login attempt, (c) configures the screen presented based on subscriber/customer profile (if login permitted), (d) delivers notification of messages pending, (e) allows the subscriber to select available services, (f) allows the subscriber to retrieve or view messages pending, (g) allows the subscriber to request view of sensitive account information, (h) allows the subscriber to request self-provisioning of permitted features, (i) allows the subscriber to request a connection to a customer care agent 104, and (j) supports a secure connection to the secure web server 103.

The CCC web site 102 accesses other components of the present invention to carry out these functions. The CCC web site 102 itself holds no data or information other than the
instructions, based on templates or formatted on-the-fly, on how to present requested data to the subscriber and how to respond to subscriber requests.

With continuing reference to Fig. 1, the secure web service 103 is an "invisible" component of the system. The secure web server 103 manages the secure connections when a customer or subscriber makes a request which requires encrypted security. Such requests include viewing account status, checking usage statistics and limitations, self provisioning some services or on-line shopping, and making changes to the service or adding authorized users.

The secure web server 103 establishes a secure connection with the subscriber/customer client device and presents the appropriate displays and messages in response to the requests. The secure web server 103 supports retrieval or view of messages pending, provides a view of sensitive account information, provides a screen for the subscriber to provision permitted features, provides a screen for the subscriber to make permitted changes to account information, and provides a secure connection to a customer care agent 104.

The secure web server 103 accesses other components of the present invention to carry out its functions. The secure web server 103 itself holds no data or information other than the instructions, based on templates or formatted on-the-fly, on how to present requested data to the subscriber and how to respond to subscriber requests.

The application on the agent desktops 104 permits the customer care representatives to handle customer and subscriber requests which cannot be automated through the CCC web site 102, or when a subscriber chooses not to utilize an automated feature (when permitted.)

The agent application 104 supports access to information in the directory server 101, access to information in the CRM system 107, access to information in the accounting system 115, and access to information in the billing system 108.
The voice processor 105 is an interpreter. The voice processor 105 manages customer access which comes through a voice-based medium, such as a normal telephone call or a wireless handset. The voice processor 105 relies on the directory server 101 for current customer 202 and subscriber information and 206 just as web access does.

The voice processor 105 accesses the directory server 101 to determine subscriber account status, current features and settings, supports subscriber update of selected features, and settings, accepts messages to the service provider 122, provides a connection to the customer care agents 104, supports subscriber access to messages, provides text-to-speech conversions necessary to process e-mail to a voice mailbox, and processes voice commands from the subscriber.

The POP3 mail server 125 manages the processing of SMTP (Internet) mail for customers and subscribers. The mail server 125 receives GPS positioning messages from the location service provider 122 and delivers data to the subject database 129. The inbound message from the location service provider 122 formats position information as a DNS message over an IP wireless network and includes (a) message header, (b) message ID, (c) device status, (d) service provider ID, (e) device ID (such as the Electronic Serial Number), (f) location number, (g) latitude, (h) longitude, and (i) timestamp.

The mail server 125 also accesses the directory server 101 to verify subscriber account status and current settings, generates messages to third parties attempting to e-mail the subscriber, generates messages to the subscriber, holds inbound messages to the subscribers based on the mailbox address until they are retrieved, forwards inbound messages to an alternate subscriber specified mailbox(es), delivers e-mail messages to the voice processor for TTS conversion for deposit in a voice mailbox, and supports the polling service to retrieve subscriber messages from other mailboxes.
From the POP3 server 125, server 110 manages the distribution of messages to users of the system. The server 110 supports a variety of wireless protocols to send messages to a subscriber. Based on a wireless device’s ID the server 110 properly routes messages to the subscriber device.

The CRM system 107 provides customer files, sales support, and provisioning support.

A customer file contains an entry (record) for every customer and subscriber. Information includes (a) customer name, (b) address information, (c) location information (territory, territorial ID, etc.), (d) subscription information (services, features, pricing, etc.), (e) payment methods, (f) billing information, (g) billing address, (h) sales system reference, (i) salesperson reference, (j) past history, and (k) subscriber references.

The CRM system 107 also provides sales support information about a service provider’s sales force, including (a) sales force organization and hierarchy, (b) personal information about managers, (c) personal information about salespersons, (d) territorial ID system, based on geography, services, vertical markets, national accounts, etc., (e) reference code to the customer file, (f) commission rates, (g) commission calculations, and (h) interface to the accounting system 115.

The CRM system 107 also provides provisioning support and delivery of the subscriber devices. The provisioning information includes (a) customer name, (b) subscriber name (if applicable), (c) customer ID, (d) subscriber ID (if applicable), (e) device(s) (type, network, address information), (f) device ID(s), (g) shipping information, and (h) packing list.

The CRM system 107 further supports the configuration of subscriber system parameters. This information is posted to a URL address or delivered to the subscriber as a
message. The CRM system 107 also delivers the provisioned information to the POP3 mail server 125 so that it can be deposited in the subscribers mailbox.

The accounting system 115 supports general business capabilities such as accounts receivable, receipts, ledger, aging, reporting, and sales commissions payable.

In addition, the accounting system 115 supports tracking of: (a) amounts due the service provider from customer and subscriber usage on some special terms, (b) the service provider as a customer credit/collection agency if it is providing this service to the customer, and (c) log of customer credit transactions transmitted to banks, credit card processors, etc.

The billing system 108 supports billing capabilities such as: (a) generating monthly (or other frequency) account statements, (b) generating billing to an authorized credit card on file (distinguished from the on-site wireless processing of a debit or credit transaction at the time of service), (c) billing customers as individual subscribers for services/features/usage, (d) billing customers for a group of subscribers with the same services/features, with different services/features, split payment responsibility, and (e) billing customers/subscribers for ancillary charges (such as a per transaction basis or a percentage of a transaction’s dollar value).

The subject database 129 keeps track of the location information about the subscribers and their devices in the field. For the automated tracking services, the information is received approximately every two minutes from the POP3 mail server 125.

For the requested services, the location information is received at the time of the request.

The position information includes: (a) device status, (b) service provider ID, (c) device ID, (d) location number, (e) latitude, (f) longitude, and (g) timestamp. The position information is maintained in a table or another acceptable format based on geographical position information, such as a ZIP code. Thus, at any given time, a subscriber and his or her device can be pinpointed geographically.
With continuing reference to FIG. 1, a Wireless Application Protocol (WAP) server 106 interfaces the support systems 100 in one embodiment of the present invention. The WAP server 106 converts WAP messages to other formats that the components of the support systems 100 supports such as HTTP, LDAP, and the like.

In an embodiment of the present invention a virtual private network (VPN) 152 also interfaces the support systems 100. A secure, direct link is provided between a third party network and the support systems 100 thus establishing the VPN 152. The VPN 152 permits secure interfacing of the third party network and the support systems 100 network without requirements for encryption and other such security measures.

Referring to FIG. 4, the first step in processing a subscriber request for login is to access the directory server 101 and search for the subscriber entry 316. The subscriber logs in through a web browser 155 via the network cloud 150 to the secure web server 103. Alternatively, login may occur by telephone handset 302 through the voice processor 105, or through another wireless device 304. If the subscriber entry 316 is not found 314, the request is rejected 320. If the entry is found 318, then the entry is read into cache at the web server 103, and a series of edits are performed.

Referring to FIG. 5, the edits performed include checking account status, device starting profile, services, etc. at 406. If the account status is “correct” or “ok,” the screen and messages are presented at 402. If the account status is “not correct,” the screen and messages will not be presented.

From the presented screen 402, a subscriber may update profiles and preferences and update requests 404 to the directory 101.

The screen 402 presented to the subscriber from the web server 103 at login, or an alternative login interface via telephone or another wireless device, can be customized based
on the subscriber profile. The necessary information is stored as part of the subscriber directory entry.

The process of presenting the screen may be by several methods known in the art. Two exemplary methods include (a) format on the fly" as the directory attributes are read, and (b) build from a template" by inserting proper icons, logos, messages, in appropriate reserved fields.

At screen 402 the subscriber does not have a secure connection. The only customized formatting which is displayed is non-sensitive information. This information may include simple instructions to the subscriber, company daily message, service message, call the office, you have mail, and other non-sensitive information. The format also includes icons to establish secure access to the service provider 122, icons to establish access to other portals, and icons to select when responding to the service provider 122.

At step 404, the subscriber is presented a method to access e-mail, set preferences and update his or her current profile in the directory. The access is authenticated, such as by username and password. The connection is also secured by using SSL, TLS, WTLS, or other appropriate methods.

Referring to FIG. 6, the processing of a service request 450 is similar to processing a subscriber login request, but the objective is different. The purpose is to determine the subscribers with an account status as “current” and their device status as “active” which are located in a desired geographic locality of the requested service location.

A request 450 comes in to the CCC 102. The request can be a normal landline call, wireless call, e-mail, or other method. The request is for a good or service at a specified location.

The key parameters to be determined at step 455 are (1) the customer/subscriber base which offers the good or service, (2) which of its goods or services providers have an account
status of current, (3) which subscriber devices are active, (4) which active subscriber device is within the desired geographic locality where the good or service is needed, (5) the characteristics of the subscriber device, (6) a notification 122 is then sent to the subscriber device 505 (such as a page or a short text message) that the subscriber has a pickup to make, and (7) the information is also sent to the subscriber’s mailbox via the POP3 mail server 125.

The information which is made available to the subscriber includes: (a) message ID, (b) date and timestamp, (c) customer information, including street address, city, state, zip code, telephone number, number of passengers if a commercial carrier, and payment information. The subscriber also receives an “accept” or “reject” indicator.

The system of the present invention also starts a timer when the message or page is sent. A default “timeout” parameter for the length of time the clock is to run is also set.

If the timeout parameter expires, the system returns to the search for another active subscriber device in a desired proximity of the “reject” customer location and repeats the process described above. If the subscriber responds to the message with a “reject,” the system returns to the search for another active subscriber device in a desired proximity of the customer location and repeats the process described above.

If the subscriber responds to the message with an “accept,” the system suspends the transaction information to temporary storage pending receipt of a “service fulfilled” message, notifies the individual calling for the good or service that it is on the way, and sets a timing parameter to begin a count of elapsed time since the message was accepted.

Upon completion of the service call, the subscriber sends a “service fulfilled” message to the service provider. The subscriber also resets his or her device status as desired. At that time, the system writes the transaction information to the CRM system 107, posts the transaction information to the accounting system 115 (if required by the billing parameters),
and transmits the customer debit or credit card information if the customer has used on-site payment.

It will be understood by those skilled in the art that the interface of GPS and wireless technologies can be utilized in many embodiments within the scope of the present invention for localization and information routing to a wireless message receiver. WAP and alternative wireless communication technologies and protocols such as SMS, Bluetooth, and others, may be adapted in the present invention.

In one embodiment of the present invention, a requester submits the request 450 for a good or service to the service provider. The request may be submitted via an Internet site, email, fax, telephone, or other communication methods either through land-line or wirelessly, with or without human intervention. At step 455 the request is assessed from the directory server 101 and from the position database 129, to determine what good or service provider is currently within a defined geographic locality of the requester. Based on the targeted area query, users of the GPS system are located within the locality. Based on the determined users in the locality, another query may be used to broaden or confine the locality. Once the desired number of targeted users is determined, information is transmitted from the call center 457 to the targeted users, i.e., desired message receivers. In the exemplary embodiment, this message is forwarded through a communication server by a network transmitting data to a wireless communication device, such as a pager, cellular phone, or wireless computer. In an embodiment of the present invention, the transmitted information includes contact information to which the targeted user may respond, address of the requester, exact location, brief description of the necessary good or service, time or date in which action is needed, and like information of the requester.

Based on the information, a message recipient desiring to provide services will contact a specified telephone number, contact the call center 457, contact the requester, or
travel directly to the requester’s location to accept the request and also notify the call center of acceptance. In one embodiment of the invention, the call center 457 may accept bids from one or more of the good or service providers. Subsequently, the requester may select one of the bids for the good or service requested.

In an exemplary embodiment of the present invention, once a good or service provider is selected, responses from further interested providers are blocked, or the providers are notified, preferably via WAP or other wireless protocol by the call center 457, that the job is filled. In a further embodiment, central response contact information, such as a telephone number, is provided in the message information to the targeted users. If the central telephone number is telephoned by the provider, the call may be routed directly to the requester. If the job is filled, further provider calls to the central telephone number will be disabled.

An exemplary embodiment of the present invention enables a requester to contact an available service provider quicker than prior art contact methods through a central contacting source 457. Further, the present invention enables a provider to provide goods or services according to geographic location, pick which orders the provider will fill, reduce advertising needs and costs, and provide the provider with a more constant source of business, i.e., greater productivity.

The method and system of the present invention is based on location scenarios set forth in FIGS. 8–14, and described in Examples 1-7. The location is determined by finding the user or object device via GPS and calculating its position based on a set of rules, which are part of the service application. These rules calculate a device's position within a defined geographic area or time span, such as a postal code, or its distance from another specified location, or calculate an outward radius based on a specified distance or time, such as three miles or ten minutes. In one embodiment, the location can be plotted on a map using a mapping application.
Example 1

Referring to FIG. 8, a scenario for locating the closest, or qualified user, is shown. A potential customer 805 places a call for service. An example is an individual who is completing a meeting at a business location and now needs a limousine to another location (such as the airport.) The customer contacts the location service provider 122.

The limousine company has a number of limousines available and a number of drivers for those limousines. The drivers, employees or contractors to the limousine company, are called subscribers. These subscribers/users may be located at position 801, position 802, and position 803. The drivers (subscribers) carry wireless GPS-enabled devices, which track their location. Their current status as to their availability to respond to a service call for a limousine in a particular geographical location or within a time span is maintained in the support systems of the present invention.

The system locates the available limousines within a geographic locality 812 a specified radius 807 from the potential customer's location 805. In the example illustrated, three available limousines are located (U1, U2, and U3) within the specified locality 812. Position calculation shows that limousine 801 is closest to the customer location. Additional parameters associated with the particular service may also be used for qualification, such as "size," "color," and other attributes of the good or service desired.

Therefore, the first opportunity to respond to the request for limousine service is delivered to driver 801. If the opportunity is accepted, the driver proceeds toward the customer location and the transaction is recorded. If the opportunity is rejected by the first driver 801, it is then given as an opportunity to the next closest (or qualified) available driver 802 or 803, and so on.
Example 2

Referring to FIG. 9, a scenario for broadcasting to a location service provider is shown.

In this scenario, the user 801 of a GPS-enabled device broadcasts location information and advertises a request for or to provide a good or service.

This might be a courier that enters an office complex for a pick up. The courier could broadcast his presence to everyone in the office complex and notify them of his presence, so additional shipments can be picked up during the stop.

Alternatively, the driver of a car or recreational vehicle may belong to a motor club that has arranged for location service for its membership and provides location-enabled devices as part of the membership fee.

In the event of trouble, the member can broadcast location to the location service provider 122, along with the nature of the trouble and the service required. The complexity of the message, which can be sent, depends on the capability of the member's wireless device, but the support systems provide means to interpret various signals for the business applications.

For example, if the driver has been caught in a sudden snowstorm and has decided not to proceed further, the request might be to provide location and directions to the nearest hotel or the most affordable hotel. The location service provider 122 will not only identify the hotel but also notify the hotels in the locality 812 of the business opportunity. The various hotels at that point will broadcast back their response in real time as to the availability.

If business arrangements are in place, hotel preference information and credit card information stored in the member profile can be used to make a reservation at the hotel if the hotel authorizes acceptance of the instructions.
Example 3

Referring to FIG. 10, a scenario 1000 for entering a geo-locality or time-space locality is shown.

In this scenario 1000, the 801 user carrying a location-enabled device announces arrival at the border 812 of the specified radius area 807 (geo-locality).

An example is a warehouse manager at location 1005 who is looking for a specific truck and equipment for a unique cargo delivery. The manager requests notification once a truck or equipment meeting the criteria enters the geo or time locality 812 specified by the radius 807.

Another example includes a truck driver who has been instructed to announce arrival at the border 812 of a geo-circle so the location 1005 that will receive the delivery can be notified. Since the receiver of the shipment knows the approximate time it will take the truck to cover the remaining radius 807, appropriate time is allotted to prepare for arrival of the shipment.

If desired, the truck's progress toward the delivery location can also be tracked at predetermined intervals. The delivery location can be advised of the result from each tracking interval.

Example 4

Referring to FIG. 11, a scenario 1050 for a user leaving a geo-locality 802 or time-span locality 812 is shown.

In this scenario, the user 1801 carrying a location-enabled device is tracked by the location service provider 122. When the locality border 812 is reached by the exiting user 1801, a notification is provided to location 1005.

Using the example of the truck driver again, a shipper at 1005 may wish to know when a truck 1801 actually departs a particularly congested area (such as the city) and arrives
at the Interstate highway. The shipper and the driver both know when the truck departed the loading dock, but it is often difficult to know how long it will take to clear the congested area. Weather, traffic conditions, time-of-day and other factors can make that portion of the trip highly unpredictable. Alternatively, the destination of the truck drive may wish to have notification of the driver's departure from the locality.

Once the congested area is cleared and arrival at the border 812 is announced, reliable calculation of travel time to the distant delivery location may be made. Time and distance tables are one method of making such calculation. Speed and distance based on position tracking provide an alternative method. The location service provider 122 then notifies the receiving location of an estimated time of arrival for the delivery.

**Example 5**

Referring to FIG. 12, a scenario 1100 for time and location-based events is depicted.

This scenario 1100 illustrates the progress of ordered events, when action is triggered by a prior event.

An example includes a moving van destined to make a delivery at a home or office location. The subscriber 801 may also send notification of the event to the location service provider 122. In either case, the estimated time of the truck's arrival at the delivery location 1005 is calculated.

The location service provider 122 then locates an unpacking crew 802 for the moving company which is close to the delivery location 1005 and notifies the crew of the expected time of the truck's 801 arrival at destination 1005. The crew 802 acknowledges the service request and its planned arrival time at the delivery location.

Finally, the location service provider 122 locates and responds with a carpet cleaning crew 803 and notifies it of the events which have occurred and the estimated time the crew 803 should plan to be at the delivery location 1005.
Example 6

Referring to FIG. 13, a scenario 1150 for interaction between services or networks to accomplish delivery of a service, good, or business opportunity is shown.

In this example, a driver 801 caught in the sudden snowstorm has a location device provided by and serviced by Network A 1151. The driver can notify Network A 1151 of the present location and request a nearby hotel, although Network A 1151 does not have the hotel information or connectivity.

Network A 1151 therefore contacts the location service provider 122, which locates a nearby hotel 1005 via Network B 1152.

The location service provider 122 then contacts the hotel’s reservation service 802 to determine room availability.

In summary, the location service provider 122 bridges independent Network A 1151 and independent Network B 1152 to provide the good or service to the user 801.

Example 7

Referring to FIG. 14, a scenario 1200 using a progressive series of location readings to track the progress of a user 1015 is shown.

The location service provider 122 uses tables to calculate the distance traveled from one position to another and compare with the time expired between readings to determine the subject speed, and therefore estimate the time required to arrive at the destination 1005. The location service provider 122 may also keep others advised of the subject progress, such as at the destination location 1005. The span of the radius 807 is measured by time instead of distance.

In alternative embodiments of the foregoing examples, a user, preferably a service provider, may associate a location with a future location rather than a present location determined via GPS. The future location may be provided to the location service provider
for entry into a database, such that a future request for the service may be matched to the future location. Similarly, queries or requests may be made for a future locality that a user will be located in, rather than a current locality surrounding the user.

In exemplary embodiments, the methods of the present invention may efficiently serve the courier business, medical personnel, commercial carriers, sales and marketing professionals, military services, goods providers, and countless other fields requiring the targeting of individuals in a specific geographic locality to receive wireless communications.

Referring to FIG. 7, a wireless location and communication apparatus 600 of the present invention is shown. The communication apparatus 600 is provided with a viewing screen 615, standard number keys 625, and payment key 620.

The communication apparatus 600 further includes a variety of function keys 605 and preferably a function selector 605 to scroll through many possible functions while supporting minimal function key space. In conjunction with the support systems 100 the communication apparatus 600 enables a user to select a location-based function or service from the function keys 605, such as a small touch screen pad, and send a wireless request for the selected function. Because the communication apparatus is equipped with a locater, such as a GPS unit, the function or service may be location-based. Via wireless messaging, information may be exchanged to and from the communication apparatus 600.

Exemplary function keys 605 include the following keys listed in Table 3:

<table>
<thead>
<tr>
<th></th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fast Food (predetermined fast food operation name brand may appear)</td>
</tr>
<tr>
<td>2</td>
<td>Coffee shop</td>
</tr>
<tr>
<td>3</td>
<td>Parking</td>
</tr>
<tr>
<td>4</td>
<td>Gasoline</td>
</tr>
<tr>
<td>5</td>
<td>Hotel</td>
</tr>
<tr>
<td>6</td>
<td>Restaurant (sit down)</td>
</tr>
<tr>
<td>7</td>
<td>Drug Store</td>
</tr>
<tr>
<td>8</td>
<td>Cleaners</td>
</tr>
<tr>
<td>9</td>
<td>Grocery store</td>
</tr>
</tbody>
</table>
Preferably the communication apparatus 600 also includes modular hardware for use with alternative wireless network such as GSM, TDMA, CDMA, and the like. The communication apparatus also includes a programmable central processing unit (CPU), random access memory, nonvolatile memory that can be read from and written to, a built-in microphone, a speaker phone, a built-in plug for an earpiece, a GPS unit, and digital/analog converters for TTS conversion.
The communication apparatus 600 further preferably includes TTS software, a calendar, address book, database management system, programming interface and programming cradle, wireless upload and download capabilities, electronic mail software, an internet browser, GIS and raster map software, mobile commerce applications, word processing and spreadsheet software, editor programs, and programming compiler. The software components are preferably compatible with Windows CE or a similar industry standard operating system for hand-held devices.

In an embodiment of the present invention, stationary objects may also be located utilizing the system of the present invention. Such alternative embodiment includes a system and method for locating homes that match user-defined criteria of prospective buyers.

One method for facilitating the buying and selling of homes within the real estate industry is disclosed as follows. A prospective seller provides a real estate agent (or listing database) various data, house specifications, describing the home. Such data may include number of bedrooms, bathrooms, dimensions, whether the house has a pool/fireplace/garage, and other descriptive data. The prospective seller is provided a home wireless communication and data device with a unique ID number, a microchip for storage, and a GPS locating signal generator, to put in the seller’s home. The house specification data is matched to the unique ID number of the home wireless communication and data device and a record for that home is created in a central database. The house specification record is then transmitted wirelessly to the home wireless communication device with the matching ID. The house specification data is thus stored on the home device. Based on the GPS signal, the exact location of home device and respective seller’s home is determined.

A prospective buyer or buyer’s agent is provided with a query wireless communication device that is GPS enabled. Based on intermittent signals, the query wireless device and, accordingly, the prospective buyer’s location is known. During the house-
hunting process, particularly in an automobile, a query with specific criteria to search for houses is made from the query wireless device. This criteria may include number of rooms, price, location, and various other parameters. Preferably, each criteria is also ranked, such as on a scale of 1-10, to prioritize each criteria selected. The query for homes matching the criteria, preferably based on specific score or priority setting, are transmitted to a central processing location, such as a central server. Based on the location of the query device, the query is then transmitted wirelessly to all homes with home devices within a specified radius of the query device. Each home wireless device within the specified radius receives the query and matches the criteria against its own home specifications. If a specified score, i.e. matching criteria, is reached, the home wireless device will forward an affirmative message to the central processing location. The location of a home with a sufficient match is wirelessly forwarded back to the query device. The location may be forwarded as an address for the next closest home or a list of addresses for all home within the specified radius matching the criteria. Preferably, however, utilizing the GPS, actual directions for the next home matching the criteria may be transmitted to the query device, so that the prospective buyer is automatically directed to the home without the necessity of a map. In addition to the obvious advantages of real-time location of objects matching particularly criteria, the maintenance of home specification directly within the home (or other stationary object) wireless device eliminates complicated database set up and records and speeds querying and information delivery. Those skilled in the art will appreciate that although this embodiment discloses application of the invention within the realty industry, the system and method may be adapted to a wide variety of stationary objects for which location information and criteria-based searching and matching is desirable. Further, the present invention is adaptable to criteria-based location of moving objects harboring a wireless/GPS device.
In another alternative embodiment of the present invention, it will be appreciated that one or more databases may be utilized with wireless information delivery systems to perform criteria-based searching of objects sought to be located. For example, in an alternative embodiment of the present invention, a database with specification information regarding a stationary object is not necessarily required to be housed in a communication device at the stationary object. In the realty industry example, house specification could be stored on a remote server and part of the specification data record would include location of the house in terms of street address and GPS-determined coordinates. The remote database may be queried by the wireless query device, and the records on the remote server, rather than a record stored on a wireless device in the home, would be queried. Based on the query device location a specified radius is generated to include as part of the query criteria. The database records are then searched for a specified criteria score, and those records with a minimum score, and located within the particular radius, can be transmitted to the query device. Although this alternative process could eliminate the necessity of an in-home (or stationary object) device, the presence of such device to store information and provide a GPS signal allows faster searching and criteria matching than that of a voluminous database. Further, in-home devices permit queries to be made against only those records within a specified radius, rather than searching all records first by location then performing a criteria matching search.

A further aspect of the invention is a system utilizing the GPS and an ongoing query against a defined location to wait for a triggering event. For example, moving objects, such as an automobile, may be equipped with an GPS-enabled wireless communication device. If, for instance, a query is desired to be made to objects in a specified radius, it is possible that no objects may be present at the instant of the query within the radius. A dispatching algorithm may be used so that once an object “cracks” the radius that object will receive the query of data. A query may be repeated to the radius until an object enters the radius to
receive the data, or, alternatively, once the location of the object enters the radius a trigger causes the query to be transmitted to the wireless communication device of the object.

In another exemplary embodiment of the present invention, the system and method of the present invention includes interfacing GPS and WAP technology for a user to find an available, localized contractor to immediately fix a problem.

While the invention has been described with reference to the structures and methods disclosed, it is not confined to the details set forth, but is intended to cover such modifications or changes as may fall within the scope of the following claims.
Claims

What is claimed is:

1. A method for identifying a location-based good or service comprising:
   a) receiving a request for a good or service;
   b) associating the request with a parameter;
   c) calculating a geographic locality from the parameter;
   d) determining whether the good or service is within the geographic locality based on geographic triangulated position data for a wireless communication device associated with a provider of the good or service; and
   e) communicating the request to the good or service provider if the device is within the geographic locality.

2. The method of claim 1 wherein the parameter is a geographic-dependent parameter.

3. The method of claim 1 wherein the parameter is a time-dependent parameter.

4. The method of claim 1 further comprising automatically communicating a second request for a second good or service to a second good or service provider after step (c) based on predetermined criteria associated with the request in step (a).

5. The method of claim 4 wherein the parameter is a geographic-dependent parameter.

6. The method of claim 4 wherein the parameter is a time-dependent parameter.

7. The method of claim 1 wherein the request is received from a wireless requesting device.

8. The method of claim 7 further comprising receiving payment for the good or service from the wireless requesting device.

9. A method for identifying a location-based good or service comprising:
   a) receiving a notification from a good or service provider of an available good or service;
b) receiving geographic triangulated position data from a wireless communication device associated with the provider;
c) determining a geographic locality from the geographic triangulated position data; and
d) notifying a potential consumer within the geographic locality of the available good or service.

10. The method of claim 9 wherein the geographic locality in step (c) is further determined as a factor of time between a recorded position of the device and a destination location of the device.

11. The method of claim 9 wherein the consumer is notified on a receiving wireless communication device.

12. The method of claim 11 further comprising receiving payment for an available good or service provided to the consumer.

13. A method for identifying a location-based good or service provider comprising:
   a) receiving periodic geographic triangulated position data from a wireless communication device associated with a good or service provider;
   b) determining whether the device has penetrated a predetermined geographic boundary from the geographic triangulated position data; and
   c) sending a notification to a preselected destination after the device has penetrated the boundary.

14. The method of claim 13 wherein the device is inside the boundary in step (a).

15. The method of claim 13 wherein the device is outside the boundary in step (a).

16. The method of claim 13 wherein the geographic boundary is determined as a factor of time between a recorded position of the device and a destination location of the device.

17. The method of claim 16 wherein the device is inside the boundary in step (a).

18. The method of claim 16 wherein the device is outside the boundary in step (a).
19. The method of claim 13 wherein the destination is a wireless communication device.

20. A method for identifying a location-based good or service provider comprising:
   a) receiving periodic geographic triangulated position data from a wireless
      communication device associated with a consumer of a good or service provider;
   b) determining whether the device has penetrated a predetermined geographic boundary
      from the geographic triangulated position data; and
   c) sending a notification to the consumer after the device has penetrated the boundary.

21. The method of claim 20 wherein the notification in step (c) is sent when the device is a
    predetermined distance from an advertisement.

22. The method of claim 21 wherein the advertisement is a billboard.

23. The method of claim 20 wherein the notification in step (c) is sent when the device is a
    predetermined distance from a preselected good or service provider.

24. The method of claim 23 wherein the good or service provider is a retail establishment.

25. A method for identifying a location-based good or service provider comprising:
   a) receiving the periodic geographic triangulated position of a wireless communication
      device;
   b) receiving data from a computer network associated with a user of the device;
   c) identifying a good or service within a predetermined distance of the device based on
      the data; and
   d) notifying a user of the identified good or service.

26. The method of claim 25 wherein the predetermined distance is calculated as a factor of
    time between a recorded position of the device and a destination location of the device.

27. The method of claim 25 wherein the data includes a preselected event associated with the
    user of the device.

28. A system for identifying a location-based good or service comprising:
a) a remote communication device communicating periodic triangulated position data of the device to a position database;

b) a request handler for receiving a request for a good or service; and

c) a notifier for notifying a good or service provider within a predetermined distance from the remote communication device of the request.

29. The method of claim 28 wherein the request originates from the device.

30. The method of claim 28 wherein the predetermined distance is calculated as a factor of time between a recorded position of the device and a destination location of the device.

31. A system for identifying a location-based good or service comprising:

10 a) a remote communication device communicating periodic triangulated position data of the device to a position database, wherein the device is associated with a good or service provider;

b) a receiver database for receiving a notification from the good or service provider of an available good or service; and

c) a notifier for notifying a potential consumer within a predetermined distance of the device of the available good or service received by the database.

32. The system of claim 31 wherein the notification on step (b) originates from the device.

33. The system of claim 31 wherein the predetermined distance is calculated as a factor of time between a recorded position of the device and a destination location of the device.

34. A system for identifying a location-based good or service comprising:

20 a) a remote communication device communicating periodic triangulated position data of the device to a position database, wherein the device is associated with a good or service provider;

b) a receiver database for receiving a notification of an available good or service from the good or service provider;
c) a monitor for detecting the distance of the device from the predetermined geographic boundary; and

d) a notifier for notifying a potential consumer of the available good or service after the device is within a preselected distance of the geographic boundary.

35. The system of claim 33 wherein the preselected distance is computed as a factor of time between a recorded position of the device and a destination location of the device.

36. The system of claim 33 wherein the preselected distance is penetration of the geographic boundary.

37. The system of claim 36 wherein the device is on the opposite side of the boundary from the potential consumer prior to penetration.

38. The system of claim 36 wherein the device is on the same side of the boundary as the potential consumer prior to penetration.

39. A system for identifying a location-based good or service comprising:

   a) a remote communication device communicating periodic triangulated position data of the device to a position database, wherein the device is associated with a consumer of a good or service;

   b) a receiver database for receiving a notification of an available good or service from a good or service provider;

   c) a monitor for detecting the distance of the device from the predetermined geographic boundary; and

   d) a notifier for notifying the consumer of the available good or service after the device is within a preselected distance of the geographic boundary.

40. The system of claim 39 wherein the preselected distance is computed as a factor of time between a recorded position of the device and a destination location of the device.
41. The system of claim 39 wherein the preselected distance is penetration of the geographic boundary.

42. The system of claim 41 wherein the device is on the opposite side of the boundary from the potential consumer prior to penetration.

43. The system of claim 41 wherein the device on the same side of the boundary as the potential consumer prior to penetration.

44. A system for identifying a location-based good or service comprising:
   a) a remote communication device communicating periodic triangulated position data of the device to a position database;
   b) a request handler for receiving a request for a good or service from the device;
   c) a notifier for notifying a provider of the good or service within a predetermined distance from the device of the request for the good or service.

45. The method of claim 44 wherein the predetermined distance is calculated as a factor of time between a recorded position of the device and a destination location of the device.

46. A remote communication device for identifying a location-based good or service comprising:
   a) a wireless communicator for communicating periodic triangulated position data of the device to a position database;
   b) a request transmitter for sending a request for a good or service from the device to a remote processing network, wherein position of the device determines a reply generated by the remote processing network;
   c) a trigger for initiating the request from the request transmitter to the remote processing network; and
   d) a receiver for receiving the reply to the request from the remote processing network.

47. The remote communication device of claim 46 wherein the trigger is voice-activated.
48. The remote communication device of claim 46 wherein the trigger is a button assigned to a predetermined good or service request.

49. The remote communication device of claim 48 further comprising a selector for a user to select the predetermined good or service request from a preselected list of requests.

50. The remote communication device of claim 46 further comprising a selector for a user to select a predetermined good or service request from a preselected list of requests, and wherein the trigger initiates the request displayed by the selector.

51. The remote communication device of claim 46 further comprising a payment transmitter for initiating payment for the good or service from the device.
FIGURE 2
Processing Initial Subscriber Access - Step #1

- Telephone handset
- Other Wireless Device
- Voice Processor
- Web Server
- TCP Local Table
- Subscriber
- Web browser John.Doe@serviceprovider.net
- Directory

FIGURE 4
FIGURE 5
FIGURE 10